SUFU 2018 Winter Meeting
February 27 - March 3, 2018
Hilton Austin  |  Austin, Texas

PROGRAM COMMITTEE:
Kathleen Kobashi, MD, FACS (Chair)
Stephen R. Kraus, MD (Co-Chair)
Adam P. Klausner, MD (Basic Science Committee Chair)
Georgi V. Petkov, PhD (Basic Science Committee Co-Chair)

CREIGHTON UNIVERSITY
Health Sciences Continuing Education

#SUFU2018

JOINTLY PROVIDED BY:
Creighton University Health Sciences Continuing Education and the Society of Urodynamics, Female Pelvic Medicine and Urogenital Reconstruction
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It is a pleasure to welcome you to spirited Austin, Texas, and the 15th Annual Winter Meeting of the Society of Urodynamics, Female Pelvic Medicine, and Urogenital Reconstruction (SUFU). We had our largest attendance to date in 2017, and the meeting continues to grow and evolve. A slight change in the program last year allowed for more interactive panels, case-based discussions, and point-counterpoint sessions, and the feedback was favorable for this lively format of presenting the material. SUFU's goals continue to include, 1) discussion of the strongest science and contemporary information in FPMRS, 2) the strengthening of the basic and clinical science partnership, and, 3) the fostering of collaborative relationships amongst all those who touch our field. We endeavor to bring the translational aspect of FPMRS to the program by encouraging our clinical membership to attend the basic science program, our basic science colleagues to attend the clinical program, and by placing an excellent translational science talk by Dr. Adam Klausner on the plenary session. It is only by understanding each other’s perspectives that we can help one another prosper and acquire new perspectives.

This year, we have the luxury of meeting at the beautiful, newly renovated Hilton Austin, only blocks from amazing food, shopping, and of course, the incredible live music for which Austin is famous. This dynamic setting will allow us the opportunity to share ideas and learnings, collaborate with each other to advance our field, and enjoy time with new and old friends. We will once again be having a live and silent auction to support the SUFU Foundation that sponsors the Rodney Appell Traveling Preceptorship for Residents, the popular annual resident preceptorship course, and the new SUFU visiting professorship that got off to a fantastic start in 2016. The auction was a huge and successful hit last year, and we hope you’ll jump in and participate again at the 2018 meeting! Regarding the scientific program, I want to sincerely thank my basic science co-chairs, Drs. Adam Klausner and Georgi Petkov, who have put together another well thought out and incredible basic science agenda. I owe them both a debt of gratitude for their perpetual elevation of the program. The 2018 program includes stimulating topics such as ATP signaling in the lower urinary tract, novel approaches to bladder innervation, and an update on the use of stem cells in the lower urinary tract. Additionally, with the emphasis that the NIH is placing on benign urology and the clear potential that focus affords SUFU, there will be a session dedicated to discussion around the NIH-funded flagship O’Brien Research Centers.

This year’s clinical program is intended to include practical applications of new and well-established tools and principles to an array of clinical quandaries. We will discuss captivating yet practical topics such as management of the underactive bladder in a variety of clinical scenarios including male LUTS and female SUI, a multidisciplinary approach to nocturia, management of advanced neurogenic bladder and the most refractory of overactive bladder cases, challenges related to transgender medicine, management of the 200 gm prostate, management of the apex and uterus, and “vaginal rejuvenation”. Breakout sessions will focus on important topics such as the use of imaging in pelvic floor surgery and transitional medicine, as well as how to set up a collaborative research program. Several short informational lectures will be presented covering issues like physician burnout that affect all that practice medicine. Additionally, updates on the network trials and FPMRS MOC, as well as a coding session, are on the agenda.

In closing, I would like to thank Dr. Steve Kraus, my co-chair, who oversaw the abstract review process and helped me with many of the logistics of the program. He was instrumental in coordinating what promises to be phenomenal poster and podium sessions this year. Thank you also to our industry partners who make this meeting possible every year, and most importantly, a huge and sincere thank you to Heather Swanson and Michelle DeConcilis without whom we simply wouldn’t have the meeting. We hope you enjoy the meeting, learn a ton, and make some wonderful new connections! On behalf of my co-chairs and the SUFU Executive Committee, welcome to Austin!

Best Regards,
Kathleen C. Kobashi, MD, FACS
SUFU Vice President/Program Committee Chair
We thank each reviewer for the timely review of the abstracts and for conforming to the scoring grid. We gratefully acknowledge the participation of:

Michael Albo, MD
Karl-Erik Andersson, MD, PhD
Katie N. Ballert, MD
Lori Birder, PhD
Jerry Blaivas, MD
Maude Carmel, MD
Toby Chai, MD
Chris Chermansky, MD
Doreen Chung, MD, FRCSC
Lindsey Cox, MD
Vivian Cristofaro, PhD
Margot Damaser, PhD
Benjamin Dillon, MD
Karyn Eilber, MD, FPMRS
Dan Elliott, MD
Matthew Fraser, PhD
Tomas Griebling, MD
Alex Gomelsky, MD
Adonis Hijaz, MD
Melissa Kaufman, MD
Richard Kershen, MD
Adam Klausner, MD
Sang Don Koh, MD, PhD
Rose Khavari, MD
Jason Kim, MD

We would also like to thank the 2018 SUFU Video Award Review Committee:

2018 SUFU Video Award Review Committee

David A. Ginsberg, MD (Chair)
Benjamin E. Dillon, MD
Jason P. Gilleran, MD
Priya Padmanabhan, MD, FACS
Yahir Santiago-Lastra, MD

Lastly, we would also like to thank the 2018 SUFU Essay Competition Reviewers:

2018 SUFU Essay Competition Reviewers Basic Science Essay Reviewers

Georgi Petkov, PhD (chair)
John Lavelle, MB, FRCSI
Henry Lai, MD

Clinical Essay Reviewers
Anne Suskind, MD (chair)
Elise De, MD
Rose Khavari, MD
Schedule at a Glance

All sessions will be located in Austin Grand Ballroom, Salon H, 6th Floor, unless otherwise noted.

**TUESDAY, FEBRUARY 27, 2018**

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<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Location</th>
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<tbody>
<tr>
<td>11:00 a.m. – 5:30 p.m.</td>
<td>Registration/Information Desk - Austin Grand Ballroom Foyer, 6th Floor</td>
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<tr>
<td>11:00 a.m. – 5:00 p.m.</td>
<td>Speaker Ready Room - Room 602, 6th Floor</td>
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<tr>
<td>1:00 p.m.</td>
<td>Panel 1: New Frontiers in Bladder Innervation</td>
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<tr>
<td>2:30 p.m.</td>
<td>Keynote Lecture: Detrusor Interstitial Cells, The Mystery Resolved</td>
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<tr>
<td>3:30 p.m.</td>
<td>Break</td>
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<tr>
<td>3:45 p.m.</td>
<td>Panel 2: ATP Signaling in the Lower Urinary Tract</td>
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<tr>
<td>5:10 p.m.</td>
<td>Break</td>
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<tr>
<td>5:25 p.m.</td>
<td>*Basic Science Poster Session I</td>
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**WEDNESDAY, FEBRUARY 28, 2018**

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<tr>
<th>Time</th>
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<tbody>
<tr>
<td>7:00 a.m. - 6:30 p.m.</td>
<td>Registration/Information Desk - Austin Grand Ballroom Foyer, 6th Floor</td>
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<tr>
<td>7:00 a.m. - 5:30 p.m.</td>
<td>Speaker Ready Room - Room 602, 6th Floor</td>
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<tr>
<td>7:30 a.m. - 8:30 a.m.</td>
<td>Breakfast - Austin Grand Ballroom Foyer, 6th Floor</td>
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<tr>
<td>7:00 p.m. - 8:30 p.m.</td>
<td>Welcome Reception with Industry Partners - Austin Grand Ballroom, Salon F-G, 6th Floor</td>
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<tr>
<td>1:30 p.m. - 5:45 p.m.</td>
<td>*Fellows Forum - Room 616 A-B, 6th Floor (Participating Fellows Only)</td>
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<tr>
<td>4:00 p.m. - 6:30 p.m.</td>
<td>Urology Fellowship Program Director’s Meeting - Room 415 A-B, 4th Floor</td>
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<tr>
<td>8:30 a.m.</td>
<td>Welcome</td>
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<td>8:45 a.m.</td>
<td>Top 10 Basic Science Abstract Presentations</td>
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<tr>
<td>11:00 a.m.</td>
<td>Keynote Speaker: Non-Voiding Contractions Encode Essential Information on Urinary Bladder Fullness: Implications for Urinary Bladder Dysfunction</td>
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<tr>
<td>12:00 p.m.</td>
<td>2018 Basic Science Prize Essay Award Presentation and Top Podium Selection</td>
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<td>12:15 p.m.</td>
<td>Lunch</td>
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<tr>
<td>1:15 p.m.</td>
<td>Panel 3: The Use of Stem Cells in Lower Urinary Tract Research</td>
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<tr>
<td>2:50 p.m.</td>
<td>Break</td>
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<tr>
<td>3:00 p.m.</td>
<td>Panel 4: NIH-Funded Flagship (O’Brien) Research Centers in Benign Urology: What Can the Core Facilities Offer to the Urology Research Community</td>
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<tr>
<td>5:10 p.m.</td>
<td>*Basic Science Poster Session II</td>
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**THURSDAY, MARCH 1, 2018**

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<th>Time</th>
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<tbody>
<tr>
<td>6:30 a.m. - 5:30 p.m.</td>
<td>Registration/Information Desk - Austin Grand Ballroom Foyer, 6th Floor</td>
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<tr>
<td>6:30 a.m. - 5:30 p.m.</td>
<td>Speaker Ready Room - Room 602, 6th Floor</td>
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<tr>
<td>7:00 a.m. - 7:45 a.m.</td>
<td>Breakfast in the Exhibit Hall - Austin Grand Ballroom, Salon F-G, 6th Floor</td>
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<tr>
<td>7:00 a.m. - 8:00 a.m.</td>
<td>Residents and Fellows Breakfast - Governor’s Ballroom, Salon A-B, 4th Floor</td>
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<td>7:00 a.m. - 4:00 p.m.</td>
<td>Exhibit Hall Open - Austin Grand Ballroom, Salon F-G, 6th Floor</td>
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<tr>
<td>7:45 a.m.</td>
<td>*Introduction</td>
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<td>7:50 a.m.</td>
<td>*History of SUFU</td>
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<td>8:00 a.m.</td>
<td>SUFU Awards Presentation</td>
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<td>8:10 a.m.</td>
<td>Point-Counterpoint: The Failed Male Sling</td>
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<td>8:30 a.m.</td>
<td>Management of the Most Refractory Cases of OAB: Case-based Discussion</td>
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<tr>
<td>9:00 a.m.</td>
<td>Panel: Underactive Bladder</td>
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<td>9:35 a.m.</td>
<td>Presidential Address</td>
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<td>9:50 a.m.</td>
<td>Break - Visit with Exhibitors</td>
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<tr>
<td>10:20 a.m.</td>
<td>Point-Counterpoint - Management of LUTS in the Male Underactive Bladder</td>
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<tr>
<td>10:40 a.m.</td>
<td>Point-Counterpoint - Management of SUI in the Female Underactive Bladder</td>
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<tr>
<td>11:00 a.m.</td>
<td>GURS Lecture: Pelvic Floor Reconstruction Following Radical Non-Urologic Surgery</td>
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<td>11:20 a.m.</td>
<td>AUA/SUFU SUI Guidelines</td>
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<td>11:35 a.m.</td>
<td>Diokno-Lapides Award Presentation</td>
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<td>11:40 a.m.</td>
<td>*Continence Care Champion Award Presentation</td>
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<td>11:45 a.m.</td>
<td>Industry Sponsored Lunch Symposium</td>
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<tr>
<td>1:00 p.m.</td>
<td>IC/Pelvic Pain/Geriatrics/ BPH Podium Session</td>
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<td></td>
<td>LUTS/Voiding Dysfunction/Neurogenic Bladder</td>
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<td></td>
<td>Moderated Poster Session</td>
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<td></td>
<td>Austin Grand Ballroom Salon K, 6th Floor</td>
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<tr>
<td>2:20 p.m.</td>
<td>Blaivas Lectureship: Lifetime Achievement Award Winner</td>
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<td>2:35 p.m.</td>
<td>Break - Visit with Exhibitors</td>
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<td>3:05 p.m.</td>
<td>State of the Art: Nocturia: Pathophysiology</td>
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<td>3:25 p.m.</td>
<td>AUGS Presidential Address</td>
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<td>4:05 p.m.</td>
<td>BREAKOUT SESSION 1. Healthcare Reform: Where Are We Headed?</td>
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<td>BREAKOUT SESSION 2. Transitional Urology</td>
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<td></td>
<td>Austin Grand Ballroom Salon J, 6th Floor</td>
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<td>BREAKOUT SESSION 3. Troubleshooting the AUS</td>
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<td>Room 403/402, 4th Floor</td>
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<td>5:05 p.m.</td>
<td>Male Incontinence/Urodynamics</td>
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<td></td>
<td>Podium Session</td>
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<td>*Female Urology/Incontinence</td>
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<td></td>
<td>Non-Moderated Poster Session</td>
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<td>Austin Grand Ballroom Salon K, 6th Floor</td>
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<td>*Female Urology/Incontinence</td>
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<td>Non-Moderated Poster Session</td>
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<td>Austin Grand Ballroom Foyer, 6th Floor</td>
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<td>5:45 a.m.</td>
<td>Zumba - ROOM 415 A-B, 4th Floor</td>
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<td>(Tickets available for purchase at Registration/Information Desk)</td>
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<tr>
<td>6:30 a.m.</td>
<td>Registration/Information Desk - Austin Grand Ballroom Foyer, 6th Floor</td>
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<td>7:00 a.m.</td>
<td>Speaker Ready Room - Room 602, 6th Floor</td>
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<td>7:00 a.m.</td>
<td>Exhibit Hall Open - Austin Grand Ballroom Salon F-G, 6th Floor</td>
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<td>7:00 a.m.</td>
<td>Breakfast in the Exhibit Hall - Austin Grand Ballroom Salon F-G, 6th</td>
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<td>6:00 p.m.</td>
<td>Cocktail Hour - Award Recognition &amp; SUFU Foundation Auction in Exhibit</td>
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<td>Hall - Austin Grand Ballroom Salon F-G, 6th Floor</td>
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<td>6:30 a.m.</td>
<td>*Biostatistics Course - Austin Grand Ballroom Salon J, 6th Floor</td>
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<td>(Pre-Registered Attendees Only)</td>
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<td>3:00 p.m.</td>
<td>*The Journal of Neurourology and Urodynamics: Peer Review Course-</td>
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<td>Learn How to Effectively Review Manuscripts</td>
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<td>NAU course is in Governor’s Ballroom Salon A-B, 4th Floor</td>
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<td>(Pre-Registered Attendees Only)</td>
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<td>7:00 a.m.</td>
<td>Video Session I</td>
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<td>8:00 a.m.</td>
<td>Annual Business Meeting</td>
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<td>8:30 a.m.</td>
<td>Pelvic Organ Prolapse/Reconstruction Podium Session</td>
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<td>10:00 a.m.</td>
<td>Break - Visit with Exhibitors</td>
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<tr>
<td>10:30 a.m.</td>
<td>*Announcements</td>
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<td>10:35 a.m.</td>
<td>A Field Guide to Translational Research for the SUFU Clinician</td>
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<td>11:00 a.m.</td>
<td>Panel: Transgender Medicine and Gender Affirmation Surgery</td>
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<td>11:30 a.m.</td>
<td>SUFU Foundation Grant Presentations</td>
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<td>11:45 a.m.</td>
<td>Industry Satellite Symposium Lunch</td>
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<td>1:00 p.m.</td>
<td>Physician Burnout</td>
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<td>1:15 p.m.</td>
<td>The Generation Gap: Effects in the Workplace</td>
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<td>1:30 p.m.</td>
<td>Point-Counterpoint - Vaginal Rejuvenation: Fact or Fiction?</td>
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<td>1:50 p.m.</td>
<td>Point-Counterpoint: Is Urodynamics Necessary Before Surgery for</td>
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<td>Post-Prostatectomy Incontinence?</td>
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<td>2:15 p.m.</td>
<td>Innovations in FPMRS</td>
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<td>2:30 p.m.</td>
<td>Break - Visit with Exhibitors</td>
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<td>3:00 p.m.</td>
<td>Zimskind Lecture</td>
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<td>3:10 p.m.</td>
<td>Management of the HUGE Prostate (200 gm)</td>
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<td>3:40 p.m.</td>
<td>SUFU Foundation Grant Presentations</td>
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<td>3:50 p.m.</td>
<td>Distinguished Service Award Lecture</td>
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<td>4:00 p.m.</td>
<td>Neuromodulation/OAB Moderated Podium Session</td>
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<td>IC/ Pelvic/ Geriatrics/ BPH</td>
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<td>Moderated Poster Session</td>
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<td>Austin Grand Ballroom, Salon K, 6th Floor</td>
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<td>*IC/ Pelvic/ Geriatrics/ BPH</td>
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<td>Non-Moderated Poster Session</td>
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<td>Austin Grand Ballroom Foyer, 6th Floor</td>
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<td>5:00 p.m.</td>
<td>BREAKOUT SESSION 1. Collaborative Research</td>
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<td>BREAKOUT SESSION 2. Imaging in FPMRS</td>
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<td>Austin Grand Ballroom, Salon J, 6th Floor</td>
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<td>BREAKOUT SESSION 3. Recurrent UTI</td>
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<td>Room 400/402, 4th Floor</td>
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<td>Time</td>
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<td>6:00 a.m. - 12:00 p.m.</td>
<td>Registration/Information Desk - Austin Grand Ballroom Foyer, 6th Floor</td>
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<td>6:00 a.m. - 12:00 p.m.</td>
<td>Speaker Ready Room - Room 602, 6th Floor</td>
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<td>6:00 a.m. - 7:00 a.m.</td>
<td>Breakfast - Austin Grand Ballroom Foyer, 6th Floor</td>
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<td>7:00 a.m.</td>
<td>Video Session II</td>
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<td>8:00 a.m.</td>
<td>Female Urology/Incontinence Moderated Podium Session</td>
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<tr>
<td>8:00 a.m.</td>
<td>LUTS/Voiding Dysfunction/Neurogenic Bladder Moderated Podium Session</td>
<td>Austin Grand Ballroom, Salon J, 6th Floor</td>
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<tr>
<td>8:00 a.m.</td>
<td>Pelvic Organ Prolapse/Reconstruction Moderated Poster Session</td>
<td>Austin Grand Ballroom, Salon K, 6th Floor</td>
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<td>8:00 a.m.</td>
<td>*Pelvic Organ Prolapse/Reconstruction Non-Moderated Poster Session</td>
<td>Austin Grand Ballroom Foyer, 6th Floor</td>
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<tr>
<td>9:30 a.m.</td>
<td>What Has the Urinary Incontinence Treatment Network Taught Us?</td>
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<td>9:45 a.m.</td>
<td>Update on FPMRS/MOC</td>
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<td>9:55 a.m.</td>
<td>Case-Based Coding in FPMRS</td>
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<td>10:40 a.m.</td>
<td>Panel: Management of Apical Apex: How to...</td>
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<td>11:00 a.m.</td>
<td>Point-Counterpoint: Management of Uterine Prolapse</td>
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<tr>
<td>11:30 a.m.</td>
<td>Panel: Unique Challenges in Neurogenic Bladder</td>
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<td>12:00 p.m.</td>
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<td>Michael J. Kennelly, MD, FACS</td>
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<td>Alan J. Wein, MD, PhD (Hon)</td>
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<td><strong>Editor – The Journal of Neurourology and Urodynamics</strong></td>
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<td>Kathleen C. Kobashi, MD, FACS (Chair)</td>
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<td><strong>Basic Science Committee Co-Chairs</strong></td>
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<td><strong>AUGS Quality of Outcome Committee</strong></td>
<td>Michael E. Albo, MD (Lead)</td>
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<td><strong>Overactive Bladder Committee</strong></td>
<td>Stephen R. Kraus, MD (Chair)</td>
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<td><strong>Young SUFU Member Committee</strong></td>
<td>W. Stuart Reynolds, MD, MPH (Chair)</td>
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<td><strong>Nominating Committee</strong></td>
<td>Kathleen C. Kobashi, MD, FACS (Chair)</td>
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<td><strong>Nominating Committee</strong></td>
<td>Kathleen C. Kobashi, MD, FACS (Chair)</td>
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Seattle, WA

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The University of Texas Health Science Center at San Antonio
San Antonio, TX

Basic Science Program Committee
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Virginia Commonwealth University
Richmond, VA

Georgi V. Petkov, PhD (Co-Chair)
University of Tennessee Health Science Center
Memphis, TN
2017 Chemodenervation – Allergan Grant Recipients

Rachel Sosland, MD - Vanderbilt University Medical Center
“Comparison of Methods for Prevention of Urinary Tract Infection Following Botox Injection: A Non-Inferiority Trial”

Raveen Syan, MD - Stanford University
“Feasibility and Efficacy of Transvaginal OnabotulinumtoxinA Chemodenervation of the Trigone for the Third Line Treatment of Refractory Overactive Bladder”

2017 Chemodenervation – Allergan Grant Review Committee

Stephen R. Kraus, MD (Chair)
Angelo Gousse, MD
Sara Lenherr, MD, MS
Alvaro Lucioni, MD

2017 OAB – Cogentix Grant Recipient

Alexis Dieter, MD - UNC at Chapel Hill
“Optimizing Overactive Bladder Therapy: A Randomized Trial of Concomitant Probiotics in Women Initiating Anticholinergic Medication”

2017 OAB – Cogentix Grant Review Committee

Alexander Gomelsky, MD (Chair)
Jason Gilleran, MD
Alana Murphy, MD

2017 Neuromodulation – Medtronic Grant Recipients

Tara Cohen, PhD - Cedars-Sinai Medical Center
“Improving Patient Experience with Sacral Neuromodulation: A Human Factors Approach”

Evgeniy Kreydin, MD - University of Southern California
“Characterization of Brain Activity During the Micturition Cycle”

Shannon Wallace, MD - Stanford University
“Optogenetic Neuromodulation in the Diabetic Cystopathy Rat Model”

2017 Neuromodulation – Medtronic Grant Review Committee

Jennifer T. Anger, MD, MPH, FPMRS (Chair)
Kevin Benson, MD, MS
Seth Cohen, MD
Leslie Rickey, MD, MPH
Educational Needs

The 2018 SUFU winter meeting will include both a basic and translational research focus as well as a high-level clinical curriculum. The meeting will be comprised of panel discussions, keynote addresses, and research abstracts on conditions that affect the lower urinary tract and pelvic floor. This format will be utilized to provide an interactive presentation of state-of-the-art knowledge in some of the most active areas in benign urologic research. The overall objective of the meeting will be to disseminate current knowledge in this field and stimulate advanced thinking to further our understanding of the pathophysiology and treatment of pelvic floor disorders.

Though the conditions that will be discussed are benign, it is well-established that they can have a tremendous negative quality of life impact on patients and their families not to mention the huge economic burden they place on society. The educational needs of the attendees are based upon the importance of having a global understanding of pelvic floor disorders in order to optimize the care of our patients with these disorders. The clinical science portion of the meeting will include topics related to male and female incontinence, underactive bladder, refractory overactive bladder, neurogenic bladder, transgender medicine and gender reassignment surgery, recurrent urinary tract infections, nocturia, benign prostatic hypertrophy, the use of imaging in the assessment of pelvic floor disorders, the role of urodynamics, transitional medicine, and different approaches to pelvic floor reconstruction. In addition, practical and important non-clinical topics such as coding, physician burnout, differences in generational approaches and attitudes in the workplace, and potential effects of healthcare reform on FPMRS will be covered.

Attendees of the SUFU program should be familiar with these conditions and the latest thinking regarding these important clinical and practice-related topics. The meeting will be designed to encourage and foster interactions and collaboration between clinicians, investigators and basic scientists. Attendees will benefit from dialogue regarding these topics, which will facilitate their ability to provide optimal patient care.
Educational Objectives

At the conclusion of the SUFU 2018 Winter Meeting, participants will be able to:

1. Discuss the options for patients in the face of clinically significant recurrent or persistent post-prostatectomy incontinence following a male sling.
2. Describe caveats of treating the truly refractory OAB, how to counsel patients, and when to consider reconstruction.
3. Discuss the entity of underactive bladder, the pathophysiology of the condition, and the impact of UAB in certain clinical scenarios.
4. Explain approaches to urologic reconstructive surgery following injuries sustained during non-urologic radical surgery.
5. Identify the updated AUA/SUFU SUI guidelines, including the rationale behind the key points of focus.
6. Describe the pathophysiology of nocturia and be comfortable with the proper thorough evaluation and treatment of patients with nocturia, taking into consideration the potential contributing factors to their condition.
7. Identify the challenges and needs that patients with spina bifida and their parents face as they transition from the care of the pediatric to the adult urologist.
8. Discuss different causes for AUS failure, the appropriate work-up and troubleshooting, and the management of the patient with the failed AUS.
9. Describe current and future directions and anticipated challenges that may be encountered as healthcare reform proceeds.
10. Assess the major accomplishments of the UITN, its impact on the current evaluation and management of female urinary incontinence, and the current gaps and future directions in the field.
11. Explain the unique health issues associated with the transgender patient population and the process of gender reassignment.
12. Review the phenomenon of physician burnout, its potential causes, and strategies to combat and address this problem.
13. Identify the differences in backgrounds, beliefs, and attitudes between generations that can pose challenges in today’s workplace, as the most successful individuals will be those who recognize these inherent differences and incorporate that thinking into their approach to each other.
14. Describe the concept of vaginal rejuvenation, patient perception and reasons for pursuit of this treatment, and the pros and cons of vaginal rejuvenation in contemporary practice given the current state of the evidence.
15. Discuss the role and value of urodynamics in the management of patients with post-prostatectomy incontinence.
16. Explain the changes brought forth by the evolution of the FPMRS specialty and what might be anticipated in the future.
17. Identify the variety of options available for treatment of the “huge” prostate, and the pros, cons, and challenges of each.
18. Recognize the imaging modalities available to facilitate diagnosis and treatment or patients with pelvic floor FPMRS disorders and understand their utility and optimal roles.
19. Discuss the importance of collaborative research in the advancement of FPMRS and the imperative role of a multi-disciplinary team, with each member bringing a different and important perspective to the table.
20. Employ proper evaluation and diagnosis of UTIs, preventative strategies based on each individual patient, and appropriate treatment utilizing good stewardship of antibiotics.
21. Recognize the concept and importance of translational research and how it may impact the field of FPMRS.
22. Review FPMRS-specific coding in order to be in compliance with proper practice.
23. Explain surgical options for apical prolapse, including a variety of vaginal, open abdominal and robotic approaches and be able to discuss the important considerations and the pros and cons of each treatment option.
24. Describe the differences between hysterectomy and hysteropexy insofar as that which is reflected in the contemporary literature and best evidence.
25. Discuss important considerations and the pros and cons of each of a variety of treatment options for neurogenic bladder and the considerations associated with each.
CME Accreditation

Category 1
Creighton University Health Sciences Continuing Education designates this live activity for a maximum of 30.25 AMA PRA Category 1 Credit(s)™. Physicians should claim only credit commensurate with the extent of their participation in this activity.

AAPA accepts AMA category 1 credit for the PRA from organizations accredited by ACCME.

Accreditation Statement

In support of improving patient care, this activity has been planned and implemented by Creighton University Health Sciences Continuing Education (HSCE) and the Society of Urodynamics, Female Pelvic Medicine and Urogenital Reconstruction (SUFU). Creighton University Health Sciences Continuing Education (HSCE) is jointly accredited by the Accreditation Council for Continuing Medical Education (ACCME), the Accreditation Council for Pharmacy Education (ACPE), and the American Nurses Credentialing Center (ANCC), to provide continuing education for the healthcare team.

Other healthcare professionals will receive a Certificate of Attendance. For information on the applicability and acceptance of Certificates of Attendance for educational activities certified for AMA PRA Category 1 Credit™ from organizations accredited by the ACCME, please consult your professional licensing board.

Disclosure Report

The disclosure report for this meeting was provided to all attendees electronically in advance of the meeting. If you require a printed disclosure report, please visit the registration desk.

General Disclaimer

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Special Assistance

We encourage participation by all individuals. If you have a disability, advance notification of any special needs will help us better serve you. Call (847) 517-7225 if you require special assistance to fully participate in the meeting.
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## Industry Satellite Symposium Events

### THURSDAY, MARCH 1, 2018

11:45 a.m. - 1:00 p.m.  
**Industry Sponsored Lunch Symposium**  
*Location: Governor's Ballroom, Salon A-B, 4th Floor*  
*Sponsored by: Medtronic*

"Celebrating 20 Years of Partnership"

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Vice President & General Manager  
Pelvic Health & Gastric Therapies  
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Metropolitan Urologic Specialist  
St. Paul, MN

**David Rhew, MD**  
Chief Medical Officer and Head of Healthcare and Fitness  
Samsung Electronics America  
Ridgefield Park, NJ

### FRIDAY, MARCH 2, 2018

11:45 a.m. - 1:00 p.m.  
**Industry Sponsored Lunch Symposium**  
*Location: Governor's Ballroom, Salon A-B, 4th Floor*  
*Sponsored by: Avadel*

"Interactive Panel Discussion: Nocturia—A Nighttime Condition With Daytime Consequences"

**Benjamin M. Brucker, MD**  
New York University Langone Medical Center  
Scarsdale, NY

**Diane K. Newman, D.N.P. F.A.A.N.**  
University of Pennsylvania Medical Center  
Philadelphia, PA

**David O. Sussman D.O., FACOS**  
Rowan University School of Osteopathic Medicine  
Sewell, NJ

**Peter Sand, MD**  
Skokie, IL
Registration/Information Desk Hours
Location: Austin Grand Ballroom Foyer, 6th Floor

- **Tuesday, February 27, 2018** 11:00 a.m. – 5:30 p.m.
- **Wednesday, February 28, 2018** 7:00 a.m. – 6:30 p.m.
- **Thursday, March 1, 2018** 6:30 a.m. – 5:30 p.m.
- **Friday, March 2, 2018** 6:30 a.m. – 5:00 p.m.
- **Saturday, March 3, 2018** 6:00 a.m. – 12:00 p.m.

Exhibit Hall Hours
Location: Austin Grand Ballroom, Salon F-G, 6th Floor

- **Wednesday, February 28, 2018**
  - **Welcome Reception with Industry Partners** 7:00 p.m. – 8:30 p.m.
- **Thursday, March 1, 2018** 7:00 a.m. – 4:00 p.m.
- **Friday, March 2, 2018** 7:00 a.m. – 7:30 p.m.
  - **Cocktail Hour – Award Recognition & SUFU Foundation Auction in Exhibit Hall** 6:00 p.m. – 7:30 p.m.

Speaker Ready Room Hours
Location: Room 602, 6th Floor

- **Tuesday, February 27, 2018** 11:00 a.m. – 5:00 p.m.
- **Wednesday, February 28, 2018** 7:00 a.m. – 5:30 p.m.
- **Thursday, March 1, 2018** 6:30 a.m. – 5:30 p.m.
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- **Saturday, March 3, 2018** 6:00 a.m. – 12:00 p.m.

Registration Fee Includes:
- Entry to Welcome Reception with Industry Partners
- Entry to Cocktail Hour – Award Recognition & SUFU Foundation Auction in Exhibit Hall
- Entry to Scientific Sessions
- Program Materials

SUFU has a green initiative, so instead of cutting down trees to make paper program books, we are cutting down on the use of paper and going electronic, which also cuts costs for the society as a whole. A link to the electronic version of the program book will be available on the website one week before the meeting.

Spouse/Guest Registration Fee Includes:
- Entry to Welcome Reception with Industry Partners
- Entry to Cocktail Hour – Award Recognition & SUFU Foundation Auction in Exhibit Hall

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One ticket to each evening function is included in attendee and spouse registration fees.

Welcome Reception with Industry Partners

Date: Wednesday, February 28, 2018  
Time: 7:00 p.m. – 8:30 p.m.  
Location: Austin Grand Ballroom, Salon F-G, 6th Floor  
Attire: Business  
Description: Enjoy a beverage and light hors d’oeuvres as you meet with industry partners in the Exhibit Hall.

Cocktail Hour – Award Recognition & SUFU Foundation Auction in Exhibit Hall

Date: Friday, March 2, 2018  
Time: 6:00 p.m. – 7:30 p.m.  
Location: Austin Grand Ballroom Salon F-G, 6th Floor  
*Award Ceremony to start promptly at 6:00 p.m.  
Attire: Business  
Description: Finish off the Winter Meeting with an evening of cocktails, networking, award presentations and our exciting SUFU Foundation Auction in the Exhibit Hall. The SUFU Foundation Auction has many great items up for bid, including vacation homes, one-of-a-kind jewelry, tickets to the Hollywood Bowl, and even a pair of skis.

Zumba

Date: Friday, March 2, 2018  
Time: 5:45 a.m. – 6:30 a.m.  
Location: Room 415AB, 4th Floor  
Cost: $20.00  
Description: Proceeds will go to the SUFU Foundation (medical students, residents & fellows are free). Whether you're interested in relieving some tension before a packed day of educational sessions or just have a strong desire to dance, sign up to join the SUFU Zumba class! Led by colleague, SUFU EC Member and certified Zumba instructor, Jennifer T. Anger, MD, MPH, FPMRS, you'll get a full body workout all while learning some new moves! Help support the SUFU Foundation while getting your workout in. Don't miss the fun!
SUFU at the AUA 2018
May 18, 2018
12:30 p.m. – 5:10 p.m.
Moscone Center West, Room 3001/3003, Level 3
The Moscone Center
San Francisco, California

SUFU Research Foundation Resident Preceptorship 2018
Nominations opening April 2018
August 3-5, 2018
Sheraton Philadelphia Society Hill Hotel
Philadelphia, Pennsylvania

SUFU 2019 Winter Meeting
February 26 – March 2, 2019
InterContinental Miami Hotel
Miami, Florida
SCIENTIFIC PROGRAM

All sessions will be located in Austin Grand Ballroom, Salon H, 6th Floor, unless otherwise noted. Speakers and times are subject to change.

SUFU Basic and Translational Science Meeting

TUESDAY, FEBRUARY 27, 2018

OVERVIEW

11:00 a.m. - 5:00 p.m.  Speaker Ready Room Hours
Location: Room 602, 6th Floor

11:00 a.m. - 5:30 p.m.  Registration/Information Desk Open
Location: Austin Grand Ballroom Foyer, 6th Floor

GENERAL SESSION

1:00 p.m. - 2:30 p.m.  Panel 1: New Frontiers in Bladder Innervation
Moderator: Michel A. Pontari, MD

New Preclinical Models of Neurogenic Bladder Function
Panelist: Anna Malykhina, PhD

Dog Model of Nerve Re-Routing for Neurogenic Bladder
Panelist: Michael R. Ruggieri, Sr., PhD

Translational Aspects of Research Into Neurogenic Bladder
Panelist: Kenneth M. Peters, MD

2:30 p.m. - 3:30 p.m.  Keynote Lecture: Detrusor Interstitial Cells, The Mystery Resolved
Speaker: Kenton M. Sanders, PhD

3:30 p.m. - 3:45 p.m.  Break

3:45 p.m. - 5:10 p.m.  Panel 2: ATP Signaling in the Lower Urinary Tract
Moderator: Vivian Cristofaro, PhD

How Do We Void, the Role of Purinergic Signaling in the Bladder
Panelist: Christopher Fry, BSc, PhD

The Many Faces of Purinergic Regulation in Smooth Muscle: Lessons from the Gut and Bladder
Panelist: Violeta Mutafova-Yambolieva, MD, PhD

To Void or Not to Void: ATP Signaling in Bladder Mechotransduction
Panelist: Sylvia Suadicani, PhD

5:10 p.m. - 5:25 p.m.  Break

5:25 p.m. - 7:40 p.m.  Basic Science Poster Session I*
Judges: Matthew O. Fraser, PhD
         H. Henry Lai, MD
*Not CME Accredited. Please note there will be 30 minutes of viewing time. Presentations will start promptly at 5:55 p.m.

Poster #BS1  CHARACTERIZATION OF BACTERIA IDENTIFIED ON EXPLANTED MESH SLINGS USING NEXT-GENERATION SEQUENCING TECHNIQUES
A. Lenore Ackerman, MD, PhD, Victoria Scott, MD, Guo Liu, PhD, Wenyuan Shi, PhD and Shlomo Raz, MD
Los Angeles, CA
Presented By: A. Lenore Ackerman, MD, PhD
Poster #BS2  
NEUROANATOMICAL EVALUATION OF PERI-VESICAL NERVE PLEXUS IN FEMALE WITH 3T-MR DIFFUSION TENSOR IMAGING  
Bilal Farhan, MD, Hon J. Yu, BSc, PhD, Mohammad Helmy, MD and Gamal Ghoniem, MD, FACS  
University of California, Irvine, CA  
Presented By: Bilal Farhan, MD

Poster #BS3  
ANALYSIS OF VERSICAN AND HYALURONAN DEPOSITION IN THE FIBROTIC AND INFLAMMATORY RESPONSE TO POLYPROPYLENE MESH IN SYMPTOMATIC WOMEN UNDERGOING PELVIC FLOOR MESH REMOVAL  
Katherine Amin, MD\textsuperscript{1}, Sarah Adelstein, MD\textsuperscript{1}, Stephen P Evanko, PhD\textsuperscript{2}, Alvaro Lucioni, MD\textsuperscript{1}, Kathleen Kobashi, MD\textsuperscript{1}, Thomas Wight, PhD\textsuperscript{2} and Una Lee, MD\textsuperscript{1}  
\textsuperscript{1}Virginia Mason Medical Center, Department of Urology, Seattle, WA; \textsuperscript{2}Virginia Mason Medical Center, Benaroya Research Institute Wilske Translational Research, Seattle, WA  
Presented By: Katherine Amin, MD

Poster #BS4  
OVERACTIVE VOIDING BEHAVIOR IN SURGICALLY-INDUCED MENOPAUSAL MICE EXPOSED TO LIPOPOLYSACCHRIDE (LPS) IS MODULATED BY DISTINCT GENE NETWORK PATHWAYS  
Marian Acevedo Alvarez, MD\textsuperscript{1}, Judy Yeh, MD\textsuperscript{2}, Lery Alvarez-Lugo, MS\textsuperscript{2}, Ming Lu, MD\textsuperscript{2}, Warren G. Hill, MD\textsuperscript{1,2} and Toby Chai, MD\textsuperscript{1}  
\textsuperscript{1}CT; \textsuperscript{2}New Haven, CT; \textsuperscript{3}Boston, MA  
Presented By: Marian Acevedo-Alvarez, MD

Poster #BS5  
REPEATABILITY OF MOTOR UNIT NUMBER ESTIMATION OF THE EXTERNAL ANAL SPHINCTER  
Chuan Zhang, MSE\textsuperscript{1,2,3}, Alvaro Munoz, PhD\textsuperscript{3}, Timothy Boone, MD, PhD\textsuperscript{3} and Yingchun Zhang, PhD\textsuperscript{1,2}  
\textsuperscript{1}Guangdong Provincial Work Injury Rehabilitation Hospital, Guangzhou, China; \textsuperscript{2}Department of Biomedical Engineering, University of Houston, Houston, TX, USA; \textsuperscript{3}Regenerative Medicine Program, Houston Methodist Research Institute, and Department of Urology, Houston Methodist Hospital, Houston, TX, USA  
Presented By: Yingchun Zhang, PhD

Poster #BS6  
OPTIMIZING TENSILE STRENGTH USING DIFFERENT COLLAGEN-BASED NANOPARTICLES FOR ELECTROCHEMICAL ALIGNMENT GRAFT FABRICATION OF BIOTEXTILES DESIGNED FOR INCONTINENCE AND PELVIC RECONSTRUCTIVE SURGERY  
Raymond Rackley, MD\textsuperscript{1}, Nicole Edwards BME\textsuperscript{2}, XingGuo Cheng, PhD\textsuperscript{2}, Brad Gill BME, MD\textsuperscript{3} and David Staskin, MD\textsuperscript{4}  
\textsuperscript{1}Cleveland, OH; \textsuperscript{2}SouthWest Research Institute; \textsuperscript{3}Cleveland Clinic; \textsuperscript{4}Steward Health Tufts University of Medicine  
Presented By: Raymond Robert Rackley, MD

Poster #BS7  
DIFFERENTIAL PROTEIN EXPRESSION IN PATIENTS WITH UCPPS: A MAPP STUDY  
Jennifer Anger, MD, MPH\textsuperscript{1}, A. Lenore Ackerman, MD, PhD\textsuperscript{2}, Weston Spivia, MS\textsuperscript{2}, Irene van den Broek, PhD\textsuperscript{2}, Daniel Crear, MS\textsuperscript{3}, Karyn Elber, MD\textsuperscript{2}, Michael Freeman, PhD\textsuperscript{2}, Jayoung Kim, PhD\textsuperscript{2}, Qin Fu, PhD\textsuperscript{2} and Jennifer Van Eyk, PhD\textsuperscript{2}  
\textsuperscript{1}Cedars-Sinai Medical Center; \textsuperscript{2}Cedars-Sinai Medical Center, Los Angeles, California; \textsuperscript{3}Virginia Institute of Marine Science, Gloucester Point, Virginia  
Presented By: Jennifer T. Anger, MD, MPH, FPMRS

Poster #BS8  
REGULATION OF CONJUGATIVE TRANSFER OF B-LACTAM RESISTANCE FROM UROPATHOGENIC STRAINS OF ESCHERICHIA COLI  
Tatjana Sysoeva, PhD and Lingchong You, PhD  
Duke University, Durham, NC  
Presented By: Tatjana A. Sysoeva, PhD

Poster #BS9  
THE UROPATHOGENIC ESCHERICHIA COLI PILUS USHER CONTROLS PILUS ASSEMBLY THROUGH A 2-STEP VERIFICATION PROCESS DURING ACTIVATION  
Glenn Werneburg, PhD, Hemil Chauhan, BS, Nadine Henderson, MS and David Thanassi, PhD  
Stony Brook University School of Medicine, Stony Brook, NY  
Presented By: Glenn Thomas Werneburg, PhD
Poster #BS10  THE ROLE OF PDGFRα+ CELLS IN CYCLOPHOSPHAMIDE-INDUCED DETRUSOR OVERACTIVITY
Haeyeong Lee, PhD, Byoung Koh, BS, Lauren Peri, BS, Kenton Sanders, PhD and Sang Koh, MD,PhD
University of Nevada, Reno, School of Medicine, Department of Physiology and Cell Biology, Reno, NV
Presented By: Haeyeong Lee, PhD

Poster #BS11  COMPARISON OF IRON-DEPENDENT REGULATION OF SURFACE MOTILITY IN UROPATHOGENIC AND NONPATHOGENIC ESCHERICHIA COLI
Parker McDill, BS, MS¹, Larry Reitzer, BS, PhD¹ and Philippe Zimmer, MD²
¹UTD; ²UT Southwestern Medical Center
Presented By: Parker Matsuo McDill, BS, MS

Poster #BS12  A RELIABLE, SENSITIVE AND FAST ENZYMATIC METHOD TO MEASURE D-MANNOSURIA IN WOMEN
Iti Mehta, BS, MS¹, Larry Reitzer, BS, PhD¹ and Philippe Zimmer, MD²
¹UTD; ²UT Southwestern Medical Center
Presented By: Iti Mehta, MS

Poster #BS13  WITHDRAWN

Poster #BS14  MYOGENIC MECHANISMS OF DETRUSOR OVERACTIVITY IN SPINAL CORD INJURY
Haeyeong Lee, PhD, Byoung Koh, BS, Robert Corrigan, BS, Andrew Yanez, Tong Zhou, PhD, Kenton Sanders, PhD and Sang Koh, MD, PhD
University of Nevada, Reno, School of Medicine, Department of Physiology and Cell Biology, Reno, NV
Presented By: Haeyeong Lee, PhD

Poster #BS15  CHARACTERIZATION OF RELAXIN RECEPTOR EXPRESSION IN HUMAN BLADDER SMOOTH MUSCLE CELLS AND EVALUATION OF ITS EFFECT ON TISSUE REMODELING AND FIBROSIS
Edward Diaz, MD, Mason Briggs, BS, Yan Wen, MD, Amy Dobberfuhl, MD and Bertha Chen, MD
Stanford University School of Medicine
Presented By: Edward C. Diaz, MD

Poster #BS16  NERVE STIMULATION INCREASES VOIDING EFFICIENCY IN A NOVEL MODEL OF DETRUSOR UNDERACTIVITY
Eric Gonzalez, PhD and Warren Grill, PhD
Department of Biomedical Engineering, Duke University, Durham, NC
Presented By: Eric Gonzalez, PhD

Poster #BS17  AMPLITUDE EFFECTS OF SACRAL NEUROMODULATION IN THE FULLY CONSCIOUS OVINE MODEL
Thaddeus Brink, PhD, Tina Billstrom, Melissa Mattson and Lance Zirpel, PhD
Medtronic Inc., Minneapolis, MN
Presented By: Thaddeus S. Brink, PhD
WEDNESDAY, FEBRUARY 28, 2018

OVERVIEW

7:00 a.m. - 5:30 p.m. Speaker Ready Room Hours
   Location: Room 602, 6th Floor

7:00 a.m. - 6:30 p.m. Registration/Information Desk Open
   Location: Austin Grand Ballroom Foyer, 6th Floor

7:30 a.m. - 8:30 a.m. Breakfast
   Location: Austin Grand Ballroom Foyer, 6th Floor

12:15 p.m. - 1:15 p.m. Lunch
   Location: Austin Grand Ballroom Foyer, 6th Floor

4:00 p.m. - 6:30 p.m. Urology Fellowship Program Directors Meeting
   Location: Room 415 AB, 4th Floor

7:00 p.m. - 8:30 p.m. Welcome Reception with Industry Partners
   Location: Austin Grand Ballroom, Salon F-G, 6th Floor

GENERAL SESSION

8:30 a.m. - 8:45 a.m. Welcome
   President: Gary E. Lemack, MD
   Vice President: Kathleen C. Kobashi, MD, FACS
   Program Chair Adam P. Klausner, MD
   Program Co-Chair: Georgi V. Petkov, PhD

8:45 a.m. - 10:45 a.m. Top 10 Basic Science Abstract Presentations
   Moderators: John P. Lavelle, MD
                  John Malysz, PhD

8:45 a.m. #1 EXPRESSION AND FUNCTION OF HETEROmeric KV7.4/KV7.5 CHANNELS IN HUMAN
          DETRUSOR SMOOTH MUSCLE
          Aaron Provence, BSc1, John Malysz2, Damiano Angoli, MSc2, Eric Rovner, MD3 and Georgi Petkov, PhD2
          1Department of Drug Discovery and Biomedical Sciences, South Carolina College of Pharmacy, University of South Carolina, Columbia, SC; 2Department of Pharmaceutical Sciences, College of Pharmacy, The University of Tennessee Health Science Center, Memphis, TN; 3Department of Urology, Medical University of South Carolina, Charleston, SC
          Presented By: John Malysz, PhD

8:57 a.m. #2 OVEREXPRESSION OF ESTROGEN RECEPTOR β IN UROTHELIUM PROTECTS AGAINST
          UROPATHOGENIC E. COLI URINARY TRACT INFECTION
          Judy Yeh, MD1, Marian Acevedo, MD1, Lery Alvarez, MS1, Ming Lu, MD1, Warren Hill, PhD2 and
          Toby Chai, MD1
          1Yale, New Haven, CT; 2Beth Israel Deaconess, Boston, MA
          Presented By: Toby C. Chai, MD

9:09 a.m. #3 TRANSGENIC FEMALE MICE WITH ORNITHINE DECARBOXYLASE (ODC) OVER-
          EXPRESSION RESTRICTED TO UROTHELIUM EXHIBIT OAB VOIDING BEHAVIOR AND
          INCREASED URINARY CYTOKINES: A TRANSLATIONAL MURINE MODEL OF OAB
          Judy Yeh, MD1, Lery Alvarez-Lugo, MS1, Ming Lu, MD1, Warren Hill, PhD2 and Toby Chai, MD1
          1Yale, New Haven, CT; 2Beth Israel Deaconess, Boston, MA
          Presented By: Toby C. Chai, MD
9:21 a.m.  #4 FLOW STUDIES IN THE ISOLATED PERFUSED WORKING PIG BLADDER DEMONSTRATE PRESERVATION OF TISSUE OXYGENATION DESPITE DECREASING VASCULAR FLOW: POTENTIAL MECHANISMS OF UNDERACTIVE BLADDER

Uzoma Anele, MD, Andrew Tracey, MD, Andrew Colhoun, MD, John Speich, PhD, Paul Ratz, PhD and Adam Klausner, MD
1Virginia Commonwealth University Medical Center, Richmond, VA; 2Virginia Commonwealth University, Richmond, VA; 3Virginia Commonwealth University School of Medicine, Richmond, VA
Presented By: Uzoma Anele, MD

9:33 a.m.  #5 UNDERSTANDING THE PATHOGENS RESPONSIBLE FOR RECURRENT URINARY TRACT INFECTIONS IN POSTMENOPAUSAL WOMEN

Nicole De Nisco, BS, PhD, Luming Chen, BS, Marcela de Souza Santos, PhD, Kelli Palmer, PhD, Kim Orth, BS, MS, PhD and Philippe Zimmern, MD
1UT Southwestern Medical Center and Howard Hughes Medical Institute; 2UT Southwestern Medical Center; 3UTD
Presented By: Nicole De Nisco, BS, PhD

9:45 a.m.  #6 STRESS-INDUCED BLADDER HYPERSENSITIVITY, HINDPAW ALLODYNIA, AND DEPRESSION-LIKE BEHAVIOR IN AN ANXIETY-PRONE STRAIN OF MICE

Pau Yen Wu, Xiaofang Yang, MD, Douglas Wright, PhD and Julie Christianson, PhD
University of Kansas Medical Center, Kansas City, KS
Presented By: Julie A. Christianson, PhD

9:57 a.m.  #7 SUSTAINED INHIBITION OF BLADDER FUNCTION IS EVOKED BY SAPHENOUS NERVE STIMULATION: AN EVALUATION OF A CONTINUOUS URODYNAMIC MODEL IN ANESTHETIZED RATS

Zainab Moazzam, BS and Paul Yoo, PhD
1Institute of Biomaterials and Biomedical Engineering, University of Toronto, Toronto, Canada; 2University of Toronto
Presented By: Paul Yoo, PhD

10:09 a.m.  #8 EXPRESSION PROFILING OF EXPERIMENTAL NEUROGENIC BLADDER REVEALS DECREASED BETA 3-AR EXPRESSION THAT CAN BE REVERSED BY INOSINE TREATMENT.

Bryan Sack, MD, Mary Piper, PhD, Justin Cotellesa, BSc, Claire Doyle, PhD, Mehraz Gharaei-Kermani, PhD, DVM, Amy Avery, BSc, Fabiha Mahmood, BSc, Vivian Cristofaro, PhD, Maryrose Sullivan, PhD, Jill Macoska, PhD and Rosalyn Adam, PhD
1Boston Children's Hospital & Harvard Medical School; 2Harvard T.H. Chan School of Public Health, Boston, MA; 3University of Massachusetts Boston, Boston, MA; 4Boston Children's Hospital & Harvard Medical School, Boston, MA; 5VA Boston Healthcare System, West Roxbury, MA & Harvard Medical School, Boston, MA
Presented By: Bryan Sack, MD

10:21 a.m.  #9 QUANTIFICATION OF BLADDER WALL MICROMOTION DURING URODYNAMICS IN A NOVEL ANESTHETIZED PIG MODEL WITH LOW AMPLITUDE RHYTHMIC CONTRACTIONS USING M-MODE ULTRASOUND

Anna Nagle, PhD, Zachary Cullingsworth, BS, Uzoma Anele, MD, Charles Blocher, MS, Adam Klausner, MD and John Speich, PhD
1Department of Mechanical & Nuclear Engineering, Virginia Commonwealth University; 2Department of Mechanical & Nuclear Engineering, Virginia Commonwealth University, Richmond VA; 3Department of Surgery, Virginia Commonwealth University School of Medicine, Richmond, VA; 4Department of Surgery, Virginia Commonwealth University School of Medicine, Richmond, VA and Department of Surgery Hunter Holmes McGuire Veterans Affairs Medical Center, Richmond, VA
Presented By: Anna S. Nagle, PhD
*2016 SUFU OAB Grant Recipient

10:33 a.m.  #10 URINARY LEVELS OF MONOCYTE CHEMOATTRACTANT PROTEIN-1 (MCP-1) PREDICT THE SEVERITY OF SYMPTOM AND RESPONSE TO TREATMENT IN PATIENTS WITH OVERACTIVE BLADDER (OAB)

Gamal Ghoniem, MD, FACS, Bilal Farhan, MD, Ahmed Ahmed, MD and Frank Zaldivar, MD, PhD
UC, Irvine, CA
Presented By: Bilal Farhan, MD

10:45 a.m. - 11:00 a.m. Break
11:00 a.m. - 12:00 p.m.  Keynote Speaker: Non-Voiding Contractions Encode Essential Information on Urinary Bladder Fullness: Implications for Urinary Bladder Dysfunction  
Speaker:  Mark T. Nelson, PhD

12:00 p.m. - 12:15 p.m.  2018 Basic Science Prize Essay Award Presentation and Top Podium Selection  
Moderator:  Una J. Lee, MD, FPMRS  
Winner:  Zachary Cullingsworth, BS

AUTOMATED QUANTIFICATION OF LOW AMPLITUDE RHYTHMIC CONTRACTIONS (LARC) DURING URODYNAMICS: IDENTIFICATION OF A DETRUSOR OVERACTIVITY SUBGROUP?  
Zachary Cullingsworth, BS1, Brooks Kelly, BS2, Nicholas Deebel, BS2, Andrew Colhoun, MD2, Anna Nagle, PhD3, Adam Klausner, MD2 and John Speich, PhD3  
1Virginia Commonwealth University; 2Department of Surgery/Division of Urology, Virginia Commonwealth University, Richmond, Virginia; 3Department of Mechanical and Nuclear Engineering, Virginia Commonwealth University, Richmond, Virginia  
Presented By:  Zachary Cullingsworth, BS

12:15 p.m. - 1:15 p.m.  Lunch  
Location:  Austin Grand Ballroom Foyer, 6th Floor

1:15 p.m. - 2:50 p.m.  Panel 3: The Use of Stem Cells in Lower Urinary Tract Research*  
Moderator:  Adonis K. Hijaz, MD  
*Not CME Accredited

Functional Tissue Reconstruction by an Acellular Regenerative Medicine Approach  
Panelist:  Stephen F. Badylak, DVM, PhD, MD

Urothelial Progenitor Cells in Regeneration  
Panelist:  Cathy L. Mendelsohn, PhD

Tissue Injury, Cytokine Response and Stem Cell Mobilization  
Panelist:  Marc S. Penn, MD, PhD, FACC

Stem Cells Modulate the Host Response to Urethral Injury  
Panelist:  Adonis K. Hijaz, MD

1:30 p.m. - 5:45 p.m.  Fellows Forum*  
Location:  Room 616 AB, 6th Floor  
*For Participating Fellows Only) Not CME Accredited

4:00 p.m. - 6:30 p.m.  Fellowship Program Directors Meeting  
Location:  Room 415 AB, 4th Floor

2:50 p.m. - 3:00 p.m.  Break

3:00 p.m. - 4:55 p.m.  Panel 4: NIH-Funded Flagship (O'Brien) Research Centers in Benign Urology: What Can the Core Facilities Offer to the Urology Research Community  
Moderators:  Toby C. Chai, MD  
Maryrose P. Sullivan, PhD

Urological Research Resources from the University of Pittsburgh  
Panelist:  Zhou Wang, PhD

Urological Research Resources from the University of Wisconsin  
Panelist:  William Ricke, PhD

Urological Research Resources from Columbia University  
Panelist:  Cathy L. Mendelsohn, PhD

Urological Research Resources from Harvard University  
Panelist:  Mark L. Zeidel, MD

4:55 p.m. - 5:10 p.m.  Break
5:10 p.m. - 7:00 p.m. Basic Science Poster Session II*  
Judges:  
Lori A. Birder, PhD  
Christopher J. Chenmansky, MD  
*Not CME Accredited. Please note there will be 20 minutes of viewing time. Presentations will start promptly at 5:30 p.m.

Poster #BS18  
CORRELATION BETWEEN DETRUSOR AND MOTOR FUNCTION IN AN ANIMAL MODEL OF PARKINSON’S DISEASE  
Vivian Cristofaro, PhD, Andrew Orlando, Sean D Carey, Yifei Xu, Josephine A Carew and Maryrose P Sullivan  
VA Boston Healthcare System, Harvard Medical School, Boston, MA  
Presented By: Vivian Cristofaro, PhD

Poster #BS19  
SEARCHING FOR THE SOURCE: MACROSCOPIC MEASUREMENT OF CALCIUM SIGNALS AND MICROMOTIONS IN THE MOUSE URINARY BLADDER  
Nathan Tykocki, PhD, Grant Hennig, PhD and Mark Nelson, PhD  
University of Vermont, Burlington, VT  
Presented By: Nathan R. Tykocki, PhD

Poster #BS20  
CHANGES IN DETRUSOR FUNCTION AND PROTEIN O-GLCNACYLATION IN AN ANIMAL MODEL OF TYPE 2 DIABETES  
Yifei Xu, Josephine A. Carew, PhD, Raj K. Goyal, MD, Maryrose P. Sullivan, PhD and Vivian Cristofaro, PhD  
VA Boston Healthcare System, Harvard Medical School, Boston, MA.  
Presented By: Vivian Cristofaro, PhD

Poster #BS21  
APPLICATION OF NEAR INFRARED SPECTROSCOPY TO CHARACTERIZE HEMODYNAMICS OF PELVIC FLOOR MUSCULATURE IN WOMEN WITH LOWER URINARY TRACT SYMPTOMS AND VOIDING DYSFUNCTION  
Emily Deegan BA, BScN, RN, Lynn Stothers D, FRCSc, Darren Lazare BEng, BA, MD, FRCSc, and Andrew Macnab, MD (London), FRCPCP, FRCPCH, FCAHS  
Department of Experimental Medicine, University of British Columbia International Collaboration on Repair Discoveries; Department of Urological Sciences & Peter Wall Institute for Advanced Studies, University of British Columbia, International Collaboration on Repair Discovery (ICORD), Vancouver, British Columbia; Department of Obstetrics and Gynaecology & Department of Physical Therapy, University of British Columbia, BC Women’s Hospital, Vancouver, British Columbia; Stellenbosch Institute for Advanced Study, Wallenberg Research Centre, Stellenbosch, South Africa, Department of Urologic Sciences, University of British Columbia & International Collaboration on Repair Discoveries (ICORD), Vancouver, British Columbia  
Presented By: Emily Grace Deegan, BA, BScN, RN

Poster #BS22  
THE EFFECTS OF ACUTE ISCHEMIA ON INTRAVESICAL PRESSURE IN AN ISOLATED PERFUSED WORKING BLADDER MODEL  
Andrew Tracey, MD, Uzoma Anele, MD, Andrew Colhoun, MD, John Speich, PhD, Adam Klausner, MD and Paul Ratz, PhD  
Virginia Commonwealth University Medical Center, Richmond, VA; Virginia Urology, Richmond, VA; Virginia Commonwealth University Department of Engineering, Richmond, VA; Virginia Commonwealth University School of Medicine, Richmond, VA  
Presented By: Uzoma Anele, MD

Poster #BS23  
THE NATURAL HISTORY OF RADIATION CYSTITIS IN A RAT MODEL OF ACUTE AND CHRONIC LOWER URINARY TRACT DYSFUNCTION  
Amy D. Dobberfuhl, MD, Mason A. Briggs, BS, Yan Wen, MD, Shoucheng Ning, PhD, Edward E. Graves, PhD, Edward C. Diaz, MD and Bertha Chen, MD  
Stanford University, Dept. of Urology; Stanford University, Dept. of Obstetrics and Gynecology; Stanford University, Dept. of Radiation Oncology  
Presented By: Amy Diane Dobberfuhl, MD
Poster #BS24  
CHRONIC MEALTIME SHIFT DISTURBS METABOLIC AND URINARY FUNCTIONS IN MICE: EFFECTS OF DAILY SUPPLEMENTATION OF ANTIOXIDANTS  
Kyung-Jin Chung MDPhD¹, Su Jin Kim ², Sung Tae Cho MDPhD³, Hyeong Gon Kim MDPhD⁴, Kyu-Sung Lee MDPhD⁴, Myung-Soo Choo MDPhD⁴, Khae Hawn Kim MDPhD⁴, Young-Suk Lee MDPhD⁸ and Jae Yup Hong  MDPhD⁹  
¹Department of Urology, Gachon University Gil Hospital, Gachon University of Medicine and Science, Incheon, Korea; ²Department of Urology, Seoul St. Mary’s Hospital, The Catholic University of Korea College of Medicine; ³Department of Urology, Hallym University Kangnam Sacred Heart Hospital, Hallym University College of Medicine, Seoul, Korea; ⁴Department of Urology, Konkuk University School of Medicine, Seoul, Korea; ⁵Department of Urology, Samsung Medical Center, Sungkyunkwan University School of Medicine, Seoul, Korea; ⁶Department of Urology, Asan Medical Center, University of Ulsan College of Medicine, Seoul, Korea; ⁷Department of Urology, Gachon University Gil Medical Center, Gachon University School of Medicine, Incheon, Korea; ⁸Department of Urology, Samsung Changwon Hospital, Sungkyunkwan University School of Medicine; ⁹Department of Urology, Cha University School of Medicine.  
Presented By: Su Jin Kim, MD, PhD

Poster #BS25  
COMPARISON OF DETRUSOR ULTRASTRUCTURE IN WOMEN AND MEN WITH BLADDER OUTLET OBSTRUCTION – A POTENTIAL ROLE FOR DIAGNOSTIC BLADDER BIOPSY  
Audrey Wang MBBS, FRACS¹, Susan Brammah MApplSc², Amanda Chung MBBS, MS, FRACS³, Vincent Tse MBBS, MS, FRACS⁴ and Lewis Chan MBBS, FRACS, DDU⁴  
¹Department of Urology, Westmead Hospital, Westmead NSW, Australia; ²Electron Microscopy Unit, Department of Anatomical Pathology, Concord Repatriation General Hospital, Concord NSW, Australia; ³The University of Sydney, Sydney Medical School, Department of Urology, Concord Repatriation General Hospital, Concord NSW, Australia; ⁴The University of Sydney, Sydney Medical School, Department of Urology, Concord Repatriation General Hospital, Concord NSW, Australia  
Presented By: Amanda S.J. Chung, BSc, MBBS, MS, FRACS

Poster #BS26  
PROPHYLACTIC TREATMENT MARKEDLY IMPROVES BLADDER CAPACITY FOLLOWING PELVIC RADIATION  
Doreen Chang MA¹, Bryce A. Allio, MD², Jillene M. Brooks, MS³, Danielle J. Degoski, BS³, A. Adam Kahokehr, MD, PhD², Andrew C. Peterson, MD² and Matthew O. Fraser, PhD⁴  
¹Duke University School of Medicine, Duke University Medical Center, Durham, NC; ²Division of Urology, Department of Surgery, Duke University Medical Center, Durham, NC; ³Institute for Medical Research, Durham, NC; ⁴Division of Urology, Department of Surgery, Duke University Medical Center and Department of Research and Development, Durham Veterans Affairs Medical Center, Durham, NC  
Presented By: Matthew O. Fraser, PhD

Poster #BS27  
INDIVIDUALIZED ADD-ON TREATMENT BASED ON THE DIFFERENCE OF RECEPTOR OF ALPHA BLOCKER IN ANIMAL MODELS OF OVERACTIVE BLADDER AND BENIGN PROSTATE HYPERPLASIA  
Sung Tae Cho, MD, PhD¹, Don Kyoung Choi, MD¹, Ohseong Kwon, MD¹, Khae Hawn Kim, MD, PhD¹ and Ji-Yeon Han, MD³  
¹Hallym University Kangnam Sacred Heart Hospital, Seoul, Korea; ²Gachon University Gil Hospital; ³Pusan National University Yangsan Hospital, Pusan, Korea  
Presented By: Sung Tae Cho, MD, PhD

Poster #BS28  
COMPARISON OF ANTERIOR VAGINAL WALL INDENTATION PARAMETERS IN AGE-MATCHED CONTROL AND PROLAPSE PATIENTS USING AN OPERATOR INDEPENDENT ARTIFICIAL FINGER  
Connie Wang, BA, Panos Shiakolas, PhD¹, Michael Abraham, BS¹, Christopher Abrego, BS¹ and Philippe Zimmern, MD²  
¹UTA; ²UT Southwestern Medical Center  
Presented By: Connie Nan Wang, BA
Poster #BS29  
**BETA-3 ADRENOCEPTOR EXPRESSION IN THE UTEROSACRAL LIGAMENT IN THE POSTMENOPAUSAL WOMEN WITH PELVIC ORGAN PROLAPSE**  
Woojin Chong, MD1, John Andrew Fantl, MD1, Michael Donovan, MD, PhD2 and Charles Ascher-Walsh, MD1  
1Division of Female Pelvic Medicine & Reconstructive Surgery. Department of Obstetrics, Gynecology and Reproductive Sciences. Mount Sinai Medical Center/Icahn School of Medicine, NY, NY; 2Department of Anatomic Pathology. Mount Sinai Medical Center/Icahn School of Medicine, NY, NY  
Presented By: Woojin Chong, MD

Poster #BS30  
**FEMALE PELVIC FLOOR MECHANICS: ANALYSIS OF PRESSURE DATA AND IMAGING**  
Tova Ablove, MD, Scott Doyle, PhD, ALexandra Marasco, BS and Frank Mendal, PhD Buffalo, NY  
Presented By: Tova Ablove, MD

Poster #BS31  
**FRESH HUMAN CADAVER VAGINOPLASTY SURGICAL PROSECTIONS TO GUIDE SURGICAL TECHNIQUE, POST-OPERATIVE CARE, AND THE DESIGN OF A NOVEL NEOVAGINAL DILATOR AND DOUCHING DEVICE**  
Maurice Garcia, MD, MAS  
Cedars Sinai Medical Center  
Presented By: Maurice Garcia, MD

Poster #BS32  
**NANOPARTICLE ENHANCED ADHESION OF MUSSEL INSPIRED HYDROGELS FOR TISSUE INTERFACING**  
Nikhil Pandey, MS1, Andres Urias, Undergraduate1, Jun Liao, PhD1, Philippe Zimmerm, MD2, Kytai Nguyen, PhD1 and Yi Hong, PhD1  
1University of Texas at Arlington; 2UT Southwestern Medical Center  
Presented By: Nikhil Pandey, MS

Poster #BS33  
**ACCURACY OF THREE NON-INVASIVE METHODS FOR BLADDER VOID VOLUME ANALYSIS IN HEALTHY VOLUNTEERS**  
Naomi Vinod1, Anna S. Nagle, PhD2, Hameeda A. Naimi, BS3, Derek Sheen, BS3, Hiren Kolli, BS3, Uzoma A. Anele, MD4, Adam P. Klausner, MD3,4 and John E. Speich, PhD2  
1Department of Surgery/Division of Urology, Richmond, VA; 2Department of Mechanical & Nuclear Engineering, Virginia Commonwealth University School of Engineering, Richmond, VA; 3Department of Surgery/Division of Urology, Virginia Commonwealth University School of Medicine, Richmond, VA; 4Department of Surgery Hunter Holmes McGuire Veterans Affairs Medical Center, Richmond, VA  
Presented By: Naomi Vinod, BS

7:00 p.m. - 8:30 p.m.  
**Welcome Reception with Industry Partners**  
*Location: Austin Grand Ballroom, Salon F-G, 6th Floor*

**THURSDAY, MARCH 01, 2018**

**OVERVIEW**

6:30 a.m. - 5:30 p.m.  
**Registration/Information Desk Open**  
*Location: Austin Grand Ballroom Foyer, 6th Floor*

6:30 a.m. - 5:30 p.m.  
**Speaker Ready Room Hours**  
*Location: Room 602, 6th Floor*

7:00 a.m. - 7:45 a.m.  
**Breakfast in Exhibit Hall**  
*Location: Austin Grand Ballroom, Salon F-G, 6th Floor*

7:00 a.m. - 8:00 a.m.  
**Residents and Fellows Breakfast**  
*Location: Governor's Ballroom, Salon A-B, 4th Floor*

7:00 a.m. - 4:00 p.m.  
**Exhibit Hall Open**  
*Location: Austin Grand Ballroom, Salon F-G, 6th Floor*

11:45 a.m. - 1:00 p.m.  
**Lunch**
GENERAL SESSION

7:45 a.m. - 7:50 a.m. Introduction  
Speaker: Kathleen C. Kobashi, MD, FACS

7:50 a.m. - 8:00 a.m. History of SUFU  
Speaker: Steven J. Weissbart, MD

8:00 a.m. - 8:10 a.m. SUFU Awards Presentations  
Speaker: Gary E. Lemack, MD

8:10 a.m. - 8:30 a.m. Point-Counterpoint: The Failed Male Sling  
Moderator: Roger R. Dmochowski, MD, MMHC, FACS

Repeat Sling  
Speaker: Craig V. Comiter, MD

Artificial Urinary Sphincter (AUS)  
Speaker: Alvaro Lucioni, MD

8:30 a.m. - 9:00 a.m. Management of the Most Refractory Cases of OAB: Case-based Discussion  
Moderator: J. Christian Winters, MD, FACS

OnabotulinumtoxinA  
Speaker: Benjamin M. Brucker, MD

Neuromodulation  
Speaker: Steven W. Siegel, MD

9:00 a.m. - 9:35 a.m. Panel: Underactive Bladder  
Moderator: Brian J. Flynn, MD

Pathophysiology of UAB  
Panelist: Michael B. Chancellor, MD

The Future of UAB  
Panelist: Alan J. Wein, MD, PhD (hon), FACS

9:35 a.m. - 9:50 a.m. Presidential Address  
Speaker: Gary E. Lemack, MD

9:50 a.m. - 10:20 a.m. Break - Visit with Exhibitors

10:20 a.m. - 10:40 a.m. Point-Counterpoint - Management of LUTS in the Male Underactive Bladder  
Moderator: Angelo E. Gousse, MD

Treat the Outlet  
Speaker: Victor W. Nitti, MD

Treat the Bladder  
Speaker: Gregory T. Bales, MD

10:40 a.m. - 11:00 a.m. Point-Counterpoint - Management of SUI in the Female Underactive Bladder  
Moderator: Nirit Rosenblum, MD

Treat the Outlet  
Speaker: Elise J.B. De, MD, ICS Education Committee Chair

Treat the Bladder  
Speaker: Philippe E. Zimmern, MD, FACS, FPMRS

11:00 a.m. - 11:20 a.m. GURS Lecture: Pelvic Floor Reconstruction Following Radical Non-Urologic Surgery  
Speaker: Jaspreeet S. Sandhu, MD
11:20 a.m. - 11:35 a.m.  AUA/SUFU SUI Guidelines  
Speaker: Stephen R. Kraus, MD

11:35 a.m. - 11:40 a.m.  Diokno-Lapides Award Presentation  
Moderator: Michael B. Chancellor, MD

“Optogenetic Stimulation of Corticotropin-Releasing Hormone Expressing Neurons in Barrington’s Nucleus Recapitulates the Social Stress Voiding Phenotype in Mice”  
Recipient: Jason P. Van Batavia, MD

11:40 a.m. - 11:45 a.m.  *Continence Care Champion Award Presentation  
Speaker: Steven G. Gregg, PhD  
*Not CME Accredited

11:45 a.m. - 1:00 p.m.  Industry Sponsored Lunch Symposium  
Location: Governor's Ballroom, Salon A-B, 4th Floor

1:00 p.m. - 2:20 p.m.  **CONCURRENT POSTER/PODIUM SESSION**

**IC/Pelvic Pain/Geriatrics/BPH Podium Session**  
Moderators: Melissa R. Kaufman, MD, PhD  
Christopher K. Payne, MD

1:00 p.m.  **#1**  5 YEAR RESULTS OF THE PROSTATIC URETHRAL LIFT (PUL) PIVOTAL STUDY  
Michael Trotter, MD¹, Claus Roehrborn, MD² and Daniel Rukstalis, MD³  
¹Midtown Urology Associates; ²UT Southwestern Medical Center, Dallas, TX; ³Wake Forest Baptist Health Urology, Winston-Salem, NC  
Presented By: Michael D. Trotter, MD

1:10 p.m.  **#2**  COMPARATIVE EFFECTIVENESS OF BENIGN PROSTATE ENLARGEMENT PROCEDURES AT ENABLING UROLOGIC MEDICATION DISCONTINUATION  
Bradley Gill, MD, MS, Navin Sabharwal BA, Elodi Deilubanza, MD, James Ulchaker, MD, Khaled Fareed, MD, MBA and Daniel Shoskes, MD  
Cleveland Clinic  
Presented By: Bradley C. Gill, MD, MS

1:20 p.m.  **#3**  EFFECT OF AGE ON OUTCOMES OF TRANSVAGINAL NATIVE TISSUE REPAIRS FOR APICAL VAGINAL PROLAPSE  
Lindsay Kissane, MD¹, Isuzu Meyer, MD¹, Kimberly Martin, PhD², Jubilee Tan, MD¹, Kathryn Miller, MD³ and Holly Richter, MD¹  
¹University of Alabama at Birmingham, Division of Urogynecology and Pelvic Reconstructive Surgery, Birmingham, AL; ²University of Alabama at Birmingham, Department of Epidemiology, Birmingham, AL; ³University of Alabama at Birmingham, Department of Obstetrics and Gynecology, Birmingham, AL  
Presented By: Lindsay Martin Kissane, MD

1:30 p.m.  **#4**  CLINICAL EXPERIENCE WITH POSTERIOR TIBIAL NERVE STIMULATION IN THE ELDERLY  
Cristina Palmer, DO, Nobel Nguyen and Gamal Ghoniem, MD, FACS  
University of California Irvine, Orange, CA  
Presented By: Cristina J. Palmer, DO

1:40 p.m.  **#5**  IMMUNOFLUORESCENCE LOCALIZATION OF BACTERIAL BIOFILMS ON EXPLANTED TRANSVAGINAL MESH SLINGS REMOVED FOR CHRONIC PAIN  
Victoria C.S. Scott, MD, A. Lenore Ackerman, MD, PhD, Guo Liu, PhD, Wenyuan Shi, PhD and Shlomo Raz, MD  
Los Angeles, CA  
Presented By: Victoria C. Scott, MD
1:50 p.m. #6 CLINICAL STUDY UPDATE ON A NOVEL RIBOSOMAL RNA-BASED RAPID DIAGNOSTIC METHOD TO DETECT, IDENTIFY AND ASSESS ANTIBIOTIC SUSCEPTIBILITY OF UROPATHOGENS
Lauren N. Wood, MD, Melissa A. Markowitz, BA, Seth A. Cohen, MD, Andrew R. Medendorp, MD, Colin Halford, Gabriel Monti, Bernard M. Churchill, David A. Haake, MD and Ja-Hong Kim, MD
1UCLA, Los Angeles, CA; 2City of Hope, Los Angeles, CA
Presented By: Lauren N. Wood, MD

2:00 p.m. #7 PROSPECTIVE SINGLE CENTER INVESTIGATIONAL DEVICE EXEMPTION STUDY OF PROSTATE ARTERY EMBOLIZATION FOR LOWER URINARY TRACT SYMPTOMS
Riad Salem, MD, MBA, Samdeep Mouli, MD, Ahsun Riaz, MD, Ahmed Gabr, MD, Rehan Ali, MD, Frank Miller, MD, Nabeel Hamoui, MD, MBA, Robert Lewandowski, MD and John Hairston, MD
1Northwestern Memorial Hospital; 2Northwestern Chicago, IL
Presented By: John Hairston, MD

2:10 p.m. #8 NON-PATHOGENIC AND UROPATHOGENIC ESCHERICHIA COLI HAVE DIFFERENT NUTRIENT REQUIREMENTS FOR SWARMING MOTILITY
Sushmita Sudarshan, BS, MS, Larry Reitzer, BS, PhD and Philippe Zimmern, MD
1UTD; 2UT Southwestern Medical Center
Presented By: Sushmita Sudarshan, BS, MS

1:00 p.m. - 2:20 p.m. LUTS/Voiding Dysfunction/Neurogenic Bladder Moderated Poster Session
Location: Austin Grand Ballroom, Salon K, 6th Floor
Moderators: Sara M. Lenherr, MD, MS; Deborah J. Lightner, MD

Poster #M1 HIGH ATTRITION RATE AND LOW PROGRESSION TO ADVANCED THERAPY FOR PATIENTS WITH OVERACTIVE BLADDER: A HOSPITAL SYSTEM WIDE STUDY
Siobhan Hartigan, MD, Katherine Fischer, MD, Alan Wein, MD, PhD, FACS and William Jaffe, MD
Division of Urology, Department of Surgery, University of Pennsylvania Health System, Philadelphia, PA
Presented By: Siobhan M. Hartigan, MD

Poster #M2 A RANDOMIZED, CONTROLLED TRIAL OF ACTIVE VS. PASSIVE VOIDING TRIALS
James Mills, MD, MSCR, Nathan Shaw, MD, Helen Houghen, MD, Hannah Agard, MD, Robert Case, MD, Timothy McMurry, PhD, Noah Schenckman, MD and Tracey Krupski, MD, MPH
1University of Virginia Department of Urology; 2Charlottesville, VA; 3MedStar Georgetown University Hospital Department of Urology; 4Washington, DC; 5Oregon Health and Sciences University Department of Urology; 6Portland, OR; 7Cleveland Clinic Akron General Department of Urology; 8Akron, OH; 9University of Florida Department of Medicine; 10Gainesville, FL; 11University of Virginia Department of Public Health Sciences
Presented By: James T. Mills, MD, MS

Poster #M3 ASSOCIATION BETWEEN OVERACTIVE BLADDER SEVERITY AND BOLD FMRI BRAIN ACTIVITY
Steven Weissbart, MD, Lily Arya, MD, Rupal Bhavsar, MD, Alan Wein, MD, PhD and Ariana Smith, MD
1Stony Brook University, Stony Brook, NY; 2University of Pennsylvania, Philadelphia, PA
Presented By: Steven Jonathan Weissbart, MD
Poster #M4

EARLY AND CONSISTENT IMPROVEMENTS IN QUALITY OF LIFE AND URINARY SYMPTOMS WITH ONABOTULINUMTOXINA IN OVERACTIVE BLADDER PATIENTS WITH URINARY INCONTINENCE IN A RANDOMIZED, PLACEBO-CONTROLLED TRIAL

Kurt McCammon 1, Angelo Gousse 2, Jennifer Gruenenfelder 3, Douglass Hale 4, Amelia Orejudos 5, Tamer Aboushwareb 6 and Alfred Kohan 6

1 Eastern Virginia Medical School, Norfolk, VA, USA; 2 Memorial Hospital Miramar, Miramar, FL, USA; 3 Orange County Urology Associates, Laguna Hills, CA, USA; 4 Urogynecology Associates, PC, Indianapolis, IN, USA; 5 Allergan plc, Irvine, CA, USA; 6 Advanced Urology Centers of New York, Bethpage, NY, USA

Presented By: Kurt Anthony McCammon, MD

Poster #M5

RELATIONSHIP BETWEEN FLUID INTAKE VOLUME AND URINARY SYMPTOMS IN PATIENTS WITH MULTIPLE SCLEROSIS

Daniel Grajower BA, Justina Tam, MD, Wai Lee, MD, Patricia Melville NP, Jason Kim, MD and Steven Weissbart, MD

Stony Brook University School of Medicine, Stony Brook, NY

Presented By: Justina Tam, MD

Poster #M6

MID-TERM RISK OF RENAL DETERIORATION AND ASSOCIATED RISK FACTORS IN PATIENTS WITH NEUROGENIC BLADDER DUE TO MULTIPLE SCLEROSIS: AN ANALYSIS WITH MEDIAN FOLLOW-UP OF 81 MONTHS

Arthi Satyanarayan, MD, Nabeel Shakir, MD, Jessica Eastman, BS and Gary Lemack, MD

Department of Urology, University of Texas Southwestern Medical Center, Dallas, Texas

Presented By: Arthi Satyanarayan, MD

Poster #M7

OUTCOMES OF ONABOTULINUMTOXINA USE IN ADULTS WITH CONGENITAL SPINAL DYSRAPHYSIM IN TERTIARY TRANSITIONAL UROLOGY CLINIC

Rose Khavari, MD, Aaron Kaviani, MD, Rashmi Pande, MS and Timothy Boone, MD, PhD

Houston, TX

Presented By: Rose Khavari, MD

Poster #M8

RISK OF RENAL DETERIORATION IS LOW AMONG SPINAL CORD INJURED PATIENTS FOLLOWED AT A TERTIARY CENTER: RESULTS OF DEMOGRAPHIC AND URODYNAMICS RISK ANALYSIS AT MID-TERM FOLLOW-UP

Nabeel Shakir, MD, Jessica Eastman, BS, Arthi Satyanarayan, MD and Gary Lemack, MD

Department of Urology, University of Texas Southwestern Medical Center, Dallas, TX

Presented By: Nabeel A. Shakir, MD

1:00 p.m. - 2:20 p.m. LUTS/Voiding Dysfunction/Neurogenic Bladder Non-Moderated Poster Session*

Location: Austin Grand Ballroom Foyer, 6th Floor
*Not CME Accredited

Poster #NM1

DOES INCORPORATION OF AN OVERACTIVE BLADDER CARE PATHWAY IMPROVE FOLLOWUP AND PROGRESSION TO THIRD LINE THERAPIES?

Chris Du, BA 1, William Berg, MD 2, Yu Wang, BA 3, Kailash Kapadia, BS 3, Zhenyue Huang, BS 3, Anh Nguyen, BS 3, Alice Cheung, BS 3, Steven Weissbart, MD 4 and Jason Kim, MD 2

1 Stony Brook University School of Medicine; 2 Stony Brook University Medical Center, Stony Brook, NY; 3 Stony Brook Medicine Department of Urology

Presented By: William T. Berg, MD

Poster #NM2

PERI-OPERATIVE RISK FACTORS FOR POST-OP URINARY RETENTION AFTER ELECTIVE SPINE SURGERY

Fahad Sheckley, MD Candidate 1, Spencer Hiller, MD 2, Gail Briolat, MSN, RN 3, Jeffrey Fischgrund, MD 3 and Melissa Fischer, MD 3

1 Beaumont Health; 2 Beaumont Health, Department of Urology, Royal Oak, MI; 3 Michigan Institute of Urology, Royal Oak, MI; 4 Beaumont Health, Department of Orthopedic Surgery, Royal Oak, MI; 5 Beaumont Health, Department of Urology & Michigan Institute of Urology, Royal Oak, MI

Presented By: Fahad Scheckley, MD
Poster #NM3  DEFINING BLADDER HEALTH IN WOMEN AND GIRLS: IMPLICATIONS FOR RESEARCH, CLINICAL PRACTICE AND PUBLIC HEALTH PROMOTION
Ariana Smith, MD1, Tamara Bavendam, MD, MS2, Amanda Berry CRNP, MSN, PhD3, Sonya Brady, PhD4, Cynthia Fok, MD, MPH5, Sheila Gahagan, MD5, Patricia Goode, MSN, MD6, Cecil Hardacker, MSN, RN, CNL7, Jeni Hebert-Beirne, PhD, MPH8, Cora Lewis, MD, MSPH9, Jessica Lewis MFT10, Lisa Low, PhD, CNM10, Jerry Lowder, MD, MSc11, Mary Palmer, PhD12 and Emily Lukacz, MD5
1University of Pennsylvania, Philadelphia, PA; 2National Institute of Health/National Institute of Diabetes, Digestive, and Kidney Disorders, Bethesda, MD; 3The Children’s Hospital of Philadelphia, Philadelphia, PA; 4University of Minnesota, Minneapolis, MN; 5University of California San Diego, San Diego, CA; 6University of Alabama at Birmingham, Birmingham, AL; 7Howard Brown Health, Chicago, IL; 8University of Illinois, Chicago, IL; 9Yale School of Public Health, New Haven, CT; 10University of Michigan School of Nursing, Ann Arbor, MI; 11Washington University in St. Louis School of Medicine, St. Louis, MO; 12University of North Carolina at Chapel Hill, Chapel Hill, NC
Presented By: Ariana L. Smith, MD

Poster #NM4  DO SOCIAL INTERACTIONS AND MENTAL WELL-BEING AFFECT OVERACTIVE BLADDER SYMPTOMS?
Hillary Wagner, MD, Julie Cheng, MD, MAE, K’dee Elsen MA, Kristin Chung, MS, G. Austin Krishingner BA and Andrea Staack, MD, PhD
Loma Linda, CA
Presented By: Hillary Wagner, MD

Poster #NM5  PREVALENCE AND IMPACT OF GLOBAL POLYURIA: RESULTS FROM THE SYMPTOMS OF LOWER URINARY TRACT DYSFUNCTION RESEARCH NETWORK (LURN) STUDY
J. Quentin Clemens, MD1, Jonathan B. Wiseman, MS2, Abigail R. Smith, PhD2, Ċindy L. Amundsen, MD2, Claire C. Yang, MD2, Megan S. Bradley, MD2, Ziya Kirkali, MD3 and Anne P. Cameron, MD, and the LURN Study Group
1University of Michigan, Ann Arbor, MI; 2Arbor Research Collaborative for Health, Ann Arbor, MI; 3Duke University Medical Center, Durham, NC; 4University of Washington, Seattle, WA; 5National Institute of Diabetes and Digestive and Kidney Diseases, Bethesda, MD
Presented By: J. Quentin Clemens, MD

Poster #NM6  HUMAN PAPILLOMA VIRUS INFECTION IS ASSOCIATED WITH INCREASED IRRITATIVE LOWER URINARY TRACT SYMPTOMS IN WOMEN
Michelle Kim, MD, PhD1 and Evgeniy Kreydin, MD2
1Boston, MA; 2Los Angeles, CA
Presented By: Michelle Kim, MD, PhD

Poster #NM7  WITHDRAWN

Poster #NM8  OUTCOMES OF PELVIC FLOOR PHYSICAL THERAPY IN THE TREATMENT OF LEVATOR SPASM AND VOIDING DYSFUNCTION
Diana Kakos, BS, Vicki Irish, CNP, Mireya Diaz-Insua, PhD and Humphrey Atiemo, MD
Detroit, MI
Presented By: Diana Kakos, BS

Poster #NM9  THE RISK OF COGNITIVE IMPAIRMENT IN PATIENTS STARTING ANTICHOLINERGIC MEDICATIONS FOR OVERACTIVE BLADDER: A PROSPECTIVE TRIAL
Shilpa Iyer, MD, MPH1, Carolyn Botros, DO2, Svjetlana Lozo, MD2, Joshua Eng, PhD2, Peter Sand, MD2, Janet Tomezsko, MD2, Sylvia Botros, MD, MSCI2, Adam Gafni-Kane, MD, MSCI2, Karen Sasso APN2 and Roger Goldberg, MD, MPH2
1The University of Chicago; 2North Shore University Health System
Presented By: Svjetlana Lozo, MD
Poster #NM10  ARE COMPLETE THREE-DAY VOIDING DIARIES FEASIBLE? RESULTS FROM THE SYMPTOMS OF LOWER URINARY TRACT DYSFUNCTION RESEARCH NETWORK (LURN) COHORT
Anne P. Cameron, MD, Jonathan B. Wiseman, MS, Cindy L. Amundsen, MD, H. Henry Lai, MD, Megan Bradley, MD, Catherine S. Bradley, MD, MSCE, Ziya Kirkali, MD, John O.L. DeLancey, MD, Victor P. Andreev, PhD DSc and J. Quentin Clemens, MD, FACS, MSCI, and the LURN Study Group
1University of Michigan, Ann Arbor, MI; 2Arbor Research Collaborative for Health, Ann Arbor, MI; 3Duke University, Durham, NC; 4Washington University School of Medicine, St. Louis, MI; 5University of Iowa, Iowa City, IA; 6National Institute of Diabetes and Digestive and Kidney Diseases, Bethesda, MD
Presented By: Anne Pelletier Cameron, MD, FPMRS

Poster #NM11  PREVALENCE AND CORRELATES OF NOCTURIA IN THE LURN COHORT
J. Quentin Clemens, MD, Jonathan B. Wiseman, MS, Ziya Kirkali, MD, Megan S. Bradley, MD, Cindy L. Amundsen, MD, Abigail R. Smith, PhD and Anne P. Cameron, MD, and the LURN Study Group
1University of Michigan, Ann Arbor, MI; 2Arbor Research Collaborative for Health, Ann Arbor, MI; 3National Institute of Diabetes and Digestive and Kidney Diseases, Bethesda, MD; 4Duke University Medical Center, Durham, NC
Presented By: J. Quentin Clemens, MD

Poster #NM12  SYSTEMIC REVIEW OF THE BURDEN OF ILLNESS IN OVERACTIVE BLADDER
Ramesh Chandra Pandey, PhD, Lloyd Chen, BA, Kalyani Jekkaraju, BA, Manishi Prasad MPH, MBA and Paul N. Mudd Jr., Pharm D, MBA
1WNS Global Services, Mumbai, India; 2Roivant Sciences, Inc. on behalf of Urovant Sciences, Inc., a wholly-owned member of the Roivant family of companies, New York, NY
Presented By: Lloyd Chen, BA

Poster #NM13  SAFETY AND EFFICACY OF ONABOTULINUMTOXIN A INJECTIONS IN THE SETTING OF SUPRAPUBIC CATHETERS
Laura L. Giusto, MD, Patricia M. Zahner, MD, Jessica C. Lloyd, MD, Juan M. Guzman-Negron, MD, Shree Agrawal, BS, Courtenay K. Moore, MD, Raymond R. Rackley, MD, Sandip P. Vasavada, MD and Howard B. Goldman, MD
1Cleveland Clinic Foundation, Cleveland, Ohio; 2Cleveland, Ohio
Presented By: Laura L. Giusto, MD

Poster #NM14  ONABOTULINUM TOXIN INJECTION TO TREAT DESD IN PATIENTS WITH CEREBRAL PALSY
Wade Bushman, MD, PhD and Ruthie Su, MD
Madison, WI
Presented By: Ruthie Rebecca Su, MD

Poster #NM15  INCONTINENT ILEOVESICOSTOMY FOR NEUROGENIC BLADDER DYSFUNCTION: LONG TERM CLINICAL AND URODYNAMIC PATIENT OUTCOMES
Mihir Shah, MD, Ali Syed, MD, Alana Murphy, MD, Akhil Das, MD and Patrick Shenot, MD
Thomas Jefferson University Hospital, Sidney Kimmel Medical School, Philadelphia, PA
Presented By: Mihir Shah, MD

Poster #NM16  BASELINE DEMOGRAPHIC CHARACTERISTICS OF A CONTEMPORARY NATIONAL SPINAL CORD INJURED POPULATION: THE NBRG SCI REGISTRY
Sara Lentherr, MD, MS, John Stoffel, MD, Sean Elliott, MD, MS, Darshan Patel, MD, Amitabh Jha, MD, MPH, Angela Presson, PhD, MS, Chong Zhang, MS, Jeffrey Rosenbluth, MD, MPH, Blayne Welk, MD, MS, and Jeremy Myers, MD
1University of Utah, Salt Lake City, UT; 2University of Michigan, Ann Arbor, MI; 3University of Minnesota, Minneapolis, MN; 4Western University, London, Ontario, Canada
Presented By: Sara M. Lentherr, MD, MS
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<tr>
<th>Poster #NM17</th>
<th>PATIENTS WITH MULTIPLE SCLEROSIS REPORT SIGNIFICANT BENEFITS FROM PERCUATNEOUS TIBIAL NERVE STIMULATION AND HAVE A HIGH RATES OF MAINTENANCE THERAPY</th>
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<td>William Berg, MD¹, Charles Loeb BA², Anjali Kapur, BS², Wai Lee, MD², Steven Weissbart, MD² and Jason Kim, MD².</td>
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<td>¹Stony Brook University Medical Center, Stony Brook, NY; ²Stony Brook Medicine, Stony Brook, NY</td>
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<td>Presented By: William T. Berg, MD</td>
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<th>VOIDING SYMPTOMS AND URODYNAMICS FINDINGS IN ADULT DIAGNOSED TETHERED CORD</th>
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<td>Lauren Bakios, MD, Madeline Cancian, MD, Petra Klinge, MD, Pradeep Chopra, MD and Janice Santos-Cortes, MD</td>
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<td>Warren Alpert Medical School, Providence, RI</td>
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<td>Presented By: Lauren Bakios, MD</td>
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<th>Poster #NM19</th>
<th>CHARACTERISTICS OF patients WITH CONGENITAL UROLOGIC DISEASES TRANSITIONING TO AN ADULT UROLOGIC CLINIC</th>
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<td>Cyrus Adams, MD, MS, Casey Kowalik, MD, Joshua Cohn, MD, Sophia Delpe, MD, W. Stuart Reynolds, MD, MPH, Douglas Mlaim, MD, Roger Dmochowski, MD, John Brock, MD and Melissa Kaufman, MD, PhD</td>
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<td>Vanderbilt University</td>
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<td>Presented By: Cyrus M. Adams II, MS, MD</td>
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<tr>
<th>Poster #NM20</th>
<th>FACTORS ASSOCIATED WITH DISCONTINUOUS FOLLOW-UP IN A UROLOGIC CONGENITAL POPULATION</th>
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<td>Cyrus Adams, MD, MS, Casey Kowalik, MD, Joshua Cohn, MD, Sophia Delpe, MD, W. Stuart Reynolds, MD, MPH, Douglas Mlaim, MD, Roger Dmochowski, MD, John Brock, MD and Melissa Kaufman, MD, PhD</td>
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<td>Presented By: Cyrus M. Adams II, MS, MD</td>
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<tr>
<th>Poster #NM21</th>
<th>DOES POST-VOID RESIDUAL URINE PREDICT SEVERITY OF VOIDING SYMPTOMS IN MULTIPLE SCLEROSIS PATIENTS?</th>
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<tr>
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<td>Elizabeth Dray, MD, John Stoffel, MD, J Quentin Clemens, MD, Anne Cameron, MD and Priyanka Gupta, MD</td>
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<td>University of Michigan, Ann Arbor, Michigan</td>
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<td>Presented By: Elizabeth Van Huffel Dray, MD</td>
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<tr>
<th>Poster #NM22</th>
<th>IMPACT OF SPINAL CORD LEVEL OF INJURY ON URINARY SYMPTOMS AND QUALITY OF LIFE IN PATIENTS MANAGED WITH CLEAN INTERMITTENT CATHETERIZATION</th>
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<td>Iryna Crescenze, MD¹, Jeremy Myers, MD², Sara Lenherr, MD², Darshan Patel, MD², Sean Elliott, MD³, Blayne Welk, MD³, Diana Covałschi MPH¹ and John Stoffel, MD¹</td>
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<tr>
<td></td>
<td>¹University of Michigan, Ann Arbor, MI; ²University of Utah, Salt Lake City, UT; ³University of Minnesota, Minneapolis, MN</td>
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<td>Presented By: Iryna Crescenze, MD</td>
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<th>Poster #NM23</th>
<th>RISK FACTORS FOR METABOLIC SYNDROME IN THE ADULT SPINA BIFIDA PATIENT</th>
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<tr>
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<td>Stephanie Kielb, MD</td>
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<td>Northwestern University Feinberg School of Medicine</td>
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<td>Presented By: Stephanie J. Kielb, MD</td>
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<tr>
<th>Poster #NM24</th>
<th>SIGNIFICANT INTERACTION EFFECTS BETWEEN PARAPLEGIC AND TETRAPLEGIC PATIENT REPORTED BLADDER FUNCTION AND QUALITY OF LIFE: AN ARGUMENT FOR EXAMINING THESE INJURIES SEPARATELY</th>
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<td>Sara Lenherr, MD, MS¹, John Stoffel, MD², Sean Elliott, MD, MS², Darshan Patel, MD¹, Amitabh Jha, MD MPH¹, Angela Presson, PhD, MS², Chong Zhang, MS², Blayne Welk, MD, MSC³ and Jeremy Myers, MD¹</td>
</tr>
<tr>
<td></td>
<td>¹University of Utah, Salt Lake City, UT; ²University of Michigan, Ann Arbor, MI; ³University of Minnesota, Minneapolis, MN; ²Western University, London, Ontario, Canada</td>
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<td>Presented By: Sara M. Lenherr, MD, MS</td>
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2:20 p.m. - 2:35 p.m.  Blaivas Lectureship: Lifetime Achievement Award Winner
Moderator: Gary E. Lemack, MD

Great People and Great Ideas
Recipient: Deborah R. Erickson, MD

2:35 p.m. - 3:05 p.m.  Break - Visit with Exhibitors

3:05 p.m. - 3:25 p.m.  State of the Art: Nocturia: Pathophysiology
Speaker: Jeffrey P. Weiss, MD

3:25 p.m. - 3:40 p.m.  AUGS Presidential Address
Speaker: Charles R. Rardin, MD, FACOG, FACS

3:40 p.m. - 4:05 p.m.  Panel: Management of Nocturia
Moderator: Jeffrey P. Weiss, MD

A Nocturia Clinical Pathway
Panelist: Jerry G. Blaivas, MD

Addressing Medical Risk Factors
Panelist: Tamsin J. Greenwell, MBChB, MD FRCS(Urol)

Behavioral Therapies
Panelist: Una J. Lee, MD, FPMRS

4:05 p.m. - 5:05 p.m.  BREAKOUT SESSIONS

4:05 p.m. - 5:05 p.m. 1. Healthcare Reform: Where Are We Headed?
Director: Scott A. MacDiarmid, MD
Panelists: J. Quentin Clemens, MD
Eugene Y. Rhee, MD, MBA

4:05 p.m. - 5:05 p.m. 2. Transitional Urology
Location: Austin Grand Ballroom Salon J, 6th Floor
Director: Kurt A. McCammon, MD
Panelists: Arthur P. Mourtzinos, MD, MBA
John T. Stoffel, MD
Tracey S. Wilson, MD, FACS

4:05 p.m. - 5:05 p.m. 3. Troubleshooting the AUS
Location: Room 400/402, 4th Floor
Director: Ajay K. Singla, MD
Panelists: Jeremy L. Ockrim, MD BSc (Hons) FRCS
Julie N. Stewart, MD

5:05 p.m. - 6:35 p.m.  CONCURRENT POSTER/PODIUM SESSION

5:05 p.m. - 6:35 p.m.  Male Incontinence/Urodynamics Podium Session
Moderators: Alvaro Lucioni, MD
Jaspree S. Sandhu, MD

5:05 p.m.  #9  IMPROVEMENTS IN POST-OPERATIVE FOLEY CATHETER EDUCATION THROUGH AUDIO-VISUAL MEDIA
Michelle Kim, MD, PhD and Shahin Tabatabaei, MD
Boston, MA
Presented By: Michelle Kim, MD, PhD
5:15 p.m. #10  
**BACTERIAL CULTURES AT THE TIME OF ARTIFICIAL URINARY SPHINCTER REVISION SURGERY IN CLINICALLY UNINFECTED DEVICES: A PROSPECTIVE CONTEMPORARY SERIES**  
Ross Avant, MD¹, Matthew Ziegelmann, MD², Brian Linder, MD² and Daniel Elliott, MD²  
¹Mayo Clinic; ²Rochester, MN  
Presented By: Ross A. Avant, MD

5:25 p.m. #11  
**WITHDRAWN**

5:35 p.m. #12  
**PREOPERATIVE GROUP EDUCATION IMPROVES PREPAREDNESS FOR RADICAL PROSTATECTOMY AND PATIENT-REPORTED OUTCOMES**  
Bradley Gill, MD, MS, Abhinav Khanna, MD, MPH, Anna Zampini, MD, MBA, Daniel Hettel, BS, Anna Faris, BS, Hadley Wood, MD and Edmund Sabanegh, MD  
Cleveland Clinic  
Presented By: Bradley C. Gill, MD, MS

5:45 p.m. #13  
**IDEALIZED FEMALE VOIDERS: IS THERE A DIFFERENCE IN QMAX AMONGST AGE GROUPS WHEN VOIDS ARE VOLUME CORRECTED**  
Israel Franco, MD, Therese Gardere, PNP and Kaitlyn Murphy, PNP  
Yale University, Department of Urology, New Haven, CT  
Presented By: Israel Franco, MD

5:55 p.m. #14  
**IS IT IMPORTANT TO DO PELVIC FLOOR EMG TO DEVELOP “NORMAL” NOMOGRAMS**  
Israel Franco, MD, Therese Gardere, PNP and Kaitlyn Murphy, PNP  
Yale University, Department of Urology  
Presented By: Israel Franco, MD

6:05 p.m. #15  
**LOW RELIABILITY OF VIDEOURODYNAMICS AND DIAGNOSIS OF DETRUSOR SPHINCTER DYSSYNERGIA: THE TRUTH LIES IN THE EYE OF THE BEHOLDER**  
Michael Randazzo, Brandi Miller, DO, Christopher Tallman, MD, Timothy Boone, MD, PhD and Rose Khavari, MD  
Houston Methodist Hospital Department of Urology, Houston Texas  
Presented By: Brandi Miller, DO

6:15 p.m. #16  
**THE UTILITY OF URODYNAMIC EVALUATION IN CLINICAL PRACTICE**  
Rena Malik, MD, Deborah Hess, MD, Maude E Carmel, MD, Gary Lemack, MD and Philippe Zimmern, MD  
UT Southwestern Medical Center, Dallas, TX  
Presented By: Rena D. Malik, MD

6:25 p.m. #17  
**HOW DOES DIABETES AFFECT VOIDING DYSFUNCTION? A MATCHED PAIRS STUDY**  
Dina Manasherova, BA, Candidate Biology¹, Gen Li, PhD², Carrie M. Aisen, MD³ and Doreen E. Chung, MD³  
¹Columbia University, New York, NY; ²Department of Biostatistics, Mailman School of Public Health, Columbia University, New York, New York; ³New York Presbyterian Hospital / Columbia University Medical Center, New York, New York  
Presented By: Dina Manasherova, BA, Candidate Biology

5:05 p.m. - 6:35 p.m. Female Urology/Incontinence Moderated Poster Session  
**Location:** Austin Grand Ballroom, Salon K, 6th Floor  
**Moderators:** Ngoc-Bich P. Le, MD, Leslie M. Rickey, MD, MPH

**Poster #M9  
SAFETY AND EFFICACY OF ONABOTULINUMTOXINA INJECTIONS IN OCTO AND NONAGENARIANS**  
Patricia M. Zahner, Laura L. Giusto, MD, Jessica C. Lloyd, MD, Juan M. Guzman-Negron, MD, Shree Agrawal, BS, Courtenay K. Moore, MD, Raymond R. Rackley, MD, Sandip P. Vasavada, MD and Howard B. Goldman, MD  
Cleveland, Ohio  
Presented By: Patricia Zahner, MD
**Poster #M10**
**COMPARISON OF ANTI-INCONTINENCE DEVICES DURING CROSSFIT EXERCISE**  
Laura Gephart, MD MBA\(^1\), Rachel High, MD\(^2\), Anthony Lewis, MD\(^2\), Michelle Reyes, BS MBA\(^2\), Karen Doersch, BS\(^2\), Thomas Kuehl, PhD\(^2\) and Jill Danford, MD\(^2\)  
\(^1\)University of Texas, Rio Grande Valley, Edinburg, TX; \(^2\)Baylor Scott & White Health, Temple, TX; \(^3\)Texas A&M Health Science Center College of Medicine  
Presented By: Rachel High, DO

**Poster #M11**
**LONG-TERM EFFICACY AND SAFETY OF SINGLE-INCISION MINI-SLINGS EXCEPT TVT-SECUR VERSUS STANDARD MIDURETHRAL SLINGS IN SURGICAL MANAGEMENT OF FEMALE STRESS URINARY INCONTINENCE: AN UPDATED SYSTEMIC REVIEW AND META-ANALYSIS**  
Aram Kim, MD, Hyeong Gon Kim, MD\(^1\), Ji-Yeon Han, MD\(^2\) and Myung-Soo Choo, MD\(^3\)  
\(^1\)Department of Urology, Konkuk University Hospital, Konkuk University School of Medicine, Seoul, Korea; \(^2\)Department of Urology, Pusan National University YangSan Hospital, Pusan National University School of Medicine, Seoul, Korea; \(^3\)Department of Urology, Asan Medical Center, Ulsan College of Medicine  
Presented By: Aram Kim, MD, PhD

**Poster #M12**
**OPIOID PRESCRIBING PRACTICES AND MEDICATION USE AFTER UROGYNECOLOGICAL SURGERY**  
Melissa Plummer, MD\(^1\), Shirly Solouki, MD\(^2\) and Nitya Abraham, MD\(^2\)  
\(^1\)Einstein, Bronx, NY; \(^2\)Montefiore, Bronx, NY  
Presented By: Shirly Solouki, MD

**Poster #M13**
**TRENDS IN THIRD LINE THERAPY UTILIZATION FOR OVERACTIVE BLADDER AMONGST GENERAL UROLOGISTS, ADVANCED PRACTICE PROVIDERS, AND FPMRS SUBSPECIALISTS**  
Jessica Lloyd, MD, Juan Guzman, MD, Laura Giusto, MD, Patricia Zahner, MD, Courtenay Moore, MD, Howard Goldman, MD, Raymond Rackley, MD and Sandip Vasavada, MD  
Presented By: Laura Giusto, MD

**Poster #M14**
**RISK FACTORS ASSOCIATED WITH FECAL INCONTINENCE IN PATIENTS WITH OVERACTIVE BLADDER**  
Caitlin Lim, DO\(^1\), Joshua Cohn, MD\(^1\), Casey Kowalik, MD\(^2\), Melissa Kaufman, MD\(^2\), Roger Dmochowski, MD\(^2\) and Stuart Reynolds, MD\(^2\)  
\(^1\)Albert Einstein Medical Center, Philadelphia, PA; \(^2\)Vanderbilt University, Nashville, TN  
Presented By: Caitlin Lim, DO, MS

**Poster #M15**
**MIDURETHRAL SLING REMOVAL: JUST THE FIRST STEP?**  
Casey G Kowalik, MD, Benjamin M Dropkin, MD, Jorge Jaunarena, MD, Sophia Delpe, MD, W. Stuart Reynolds, MD, MPH, Roger R Dmochowski, MD and Melissa R Kaufman, MD, PhD  
Presented By: Casey Kowalik, MD

**Poster #M16**
**COST IMPACT OF ELECTIVE CESAREAN DELIVERY ON FUTURE PELVIC FLOOR DISORDERS**  
Devin Patel, MD\(^1\), Justin Houman, MD\(^2\), James Weinberger, MD\(^2\), Lauren Wood, MD\(^2\), Jennifer Anger, MD\(^2\) and Karyn Elber, MD\(^2\)  
\(^1\)Cedars Sinai Medical Center; \(^2\)Los Angeles, CA  
Presented By: Devin Patel, MD

**Poster #M17**
**EVALUATION OF SMARTPHONE APPLICATIONS FOR PELVIC FLOOR EXERCISES USING THE PELVIC FLOOR-4 (PF-4) SCORING SYSTEM**  
Erica Lai, MD, MPH and Pierre Lespinasse, MD  
Rutgers-NJMS, Newark, NJ  
Presented By: Erica Lai, MD, MPH
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<tr>
<th>Poster #M18</th>
<th>OPIOID PRESCRIPTION AND USAGE IN SACRAL NEUROMODULATION, SLING, AND PROLAPSE SURGERY: ARE WE CONTRIBUTING TO THE OPIOID EPIDEMIC?</th>
<th>Dena Moskowitz, MD, Katherine Amin, MD, Alvaro Lucioni, MD, Kathleen Kobashi, MD and Una Lee, MD</th>
<th>Virginia Mason Medical Center, Seattle, WA</th>
<th>Presented By: Dena Moskowitz, MD</th>
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5:05 p.m. - 6:35 p.m. Female Urology/Incontinence Non-Moderated Poster Session*

**Poster #NM25**
REGIONAL VARIATION IN DIAGNOSTIC TESTING FOR OVERACTIVE BLADDER IN THE FEMALE MEDICARE POPULATION
Annah Vollstedt, MD, Rachel Moses, MD, MPH and E. Ann Gormley, MD
Dartmouth-Hitchcock Medical Center, Lebanon, NH
Presented By: Annah Vollstedt, MD

**Poster #NM26**
WHAT IS THE IDEAL ANTIBIOTIC PROPHYLAXIS FOR INTRAVESICAL BOTOX INJECTION? A COMPARISON OF TWO DIFFERENT REGIMENS
Justin Houman, MD, Ariel Moradzadeh, MD, Kian Asanad, BS, Devin Patel, MD, Alex Hannemann, BS, Joseph D. Thum, MD, Jennifer T. Anger, MD and Karyn S. Elber, MD
1Cedars-Sinai Medical Center, Department of Surgery, Division of Urology, Los Angeles, CA; 2David Geffen School of Medicine at UCLA, Los Angeles, CA; 3University of South Dakota School of Medicine
Presented By: Justin Houman, MD

**Poster #NM27**
PATIENT PERCEPTIONS OF CHAPERONES DURING INTIMATE EXAMS AND PROCEDURES IN UROLOGY CLINIC
Julia Han, MD, Blake Noennig, MD, Jonathan Pavlinec, MD, Lianna Damiano, BS and Louis Moy, MD
1University of Florida Department of Urology Gainesville, FL; 2University of Florida, Gainesville FL
Presented By: Julia Han, MD

**Poster #NM28**
PLACEMENT OF MID-URETHRAL MESH SLINGS AT THE TIME OF VAGINAL PROLAPSE REPAIR DOES NOT AFFECT POST-OPERATIVE SEXUAL FUNCTION OR ORGASM
Laura Nguyen, MD, Esther Han, DO, Jamie Bartley, DO, Jason Gilleran, MD, Kim Killinger, MSN, Judith Boura, MS and Larry Sirls, MD
Royal Oak, MI
Presented By: Laura Nguyen, MD

**Poster #NM29**
SYNTHETIC MID-URETHRAL SLING COMPLICATIONS: EVOLUTION OF PRESENTING SYMPTOMS OVER TIME
Connie Wang, BA, Alana Christie, MS and Philippe Zimmern, MD
UT Southwestern Medical Center
Presented By: Connie Nan Wang, BA

**Poster #NM30**
THE EFFECT OF SURGEON VOLUME ON PERIOPERATIVE OUTCOMES FOR MID-URETHRAL SLING SURGERY
Jacqueline Speed, MD, Ye Wang, PhD, Steven Chang, MD, MS and Elodi Dieulubanza, MD
Brigham and Women's Hospital, Boston, MA
Presented By: Jacqueline M. Speed, MD

**Poster #NM31**
EVALUATION OF THE VAGINAL MYCOBIOME IN ASYMPTOMATIC PRE-MENOPAUSAL WOMEN
Victoria C.S. Scott, MD, Jie Tang, PhD, Tiina Drell, PhD, Jaak Simm, PhD, Andres Salumets, PhD, Madis Metsis, PhD, David M. Underhill, PhD and A. Lenore Ackerman, MD, PhD
1Los Angeles, CA; 2Tallinn, Estonia; 3Tartu, Estonia
Presented By: Victoria C. Scott, MD
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<th>Poster #NM32</th>
<th>THE EFFECT OF INSURANCE ON WAIT TIMES FOR OUTPATIENT EVALUATION BY ACADEMIC FPMRS-TRAINED PROVIDERS</th>
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<tr>
<td>Wai Lee, MD, Tal Cohen, BA, Charles Loeb, BA, Alice Cheung, BS, Anjali Kapur, BS, Chris Du, BA, Ramsey Kalil, BA, Steven Weissbart, MD and Jason Kim, MD</td>
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<tr>
<td>Stony Brook Medicine, Stony Brook, NY</td>
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<td>Presented By: Wai Lee, MD</td>
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<th>Poster #NM33</th>
<th>POSTERIOR TIBIAL NERVE STIMULATION: IDENTIFICATION OF PROGNOSTIC FACTORS FOR SUCCESSFUL OUTCOMES</th>
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<tr>
<td>Melanie Aube, MD, FRCSC, Matthew Nielsen, MD, Jessica DeLong, MD, Jeremy Tonkin, MD, Ramon Virasoro, MD and Kurt McCammon, MD</td>
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<tr>
<td>EVMS, Norfolk, VA</td>
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<td>Presented By: Melanie Aube-Peterkin, MD</td>
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| Poster #NM34 | WITHDRAWN |

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<th>Poster #NM35</th>
<th>SYMPTOM-BASED CLUSTERING OF FEMALE LUTS PARTICIPANTS IN THE SYMPTOMS OF LOWER URINARY TRACT DYSFUNCTION RESEARCH NETWORK (LURN) STUDY</th>
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<td>Victor P. Andreev, PhD, DSc, Gang Liu, PhD, Claire C. Yang, MD, Abigail R. Smith, PhD, Margaret E. Helmut MA, Jonathan B. Wiseman, MS, Robert M. Merion, MD, FACS, Kevin P. Weinfurt, PhD, H. Henry Lai, MD, David Cella, PhD, Brian T. Helfand, MD, PhD, James W. Griffith, PhD, John O.L. DeLancey, MD, Matthew O. Fraser, PhD and Ziya Kirkali, MD</td>
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<td>1Arbor Research Collaborative for Health, Ann Arbor, MI; 2University of Washington, Seattle, WA; 3Duke University Medical Center, Durham, NC; 4Washington University School of Medicine, St. Louis, MO; 5Northwestern University Feinberg School of Medicine, Chicago, IL; 6NorthShore University Health System, Glenview, IL; 7University of Michigan, Ann Arbor, MI; 8National Institute of Diabetes and Digestive and Kidney Diseases, Bethesda, MD</td>
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<td>Presented By: Victor P. Andreev, PhD, DSc</td>
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<th>Poster #NM36</th>
<th>DRINKING FROM THE FIRE HOSE: EDUCATIONAL CONTENT OF DIRECT-TO-CONSUMER TELEVISION ADVERTISING FOR OVERACTIVE BLADDER</th>
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<tr>
<td>Kevin Koo, MD, MPH, MPhil and E. Ann Gormley, MD</td>
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<td>Lebanon, NH</td>
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<td>Presented By: E. Ann Gormley, MD</td>
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<th>Poster #NM37</th>
<th>SYMPTOM RESOLUTION AND RECURRENT STRESS INCONTINENCE FOLLOWING URETHRAL SLING REMOVAL</th>
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<tr>
<td>Andrew Bergersen, MD, Elinora Price MPH, Michael Callegari MBA, Evan Austin, BS, Oduotyosi Oduyemi, BS, Joel Funk, MD and Christian Twiss, MD</td>
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<tr>
<td>1University of Arizona College of Medicine, Tucson, AZ; 2University of Oklahoma College of Medicine, Oklahoma City, Oklahoma</td>
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<td>Presented By: Andrew Bergersen, MD</td>
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<th>Poster #NM38</th>
<th>FACTORS ASSOCIATED WITH THE DECISION TO UNDERGO SURGICAL MANAGEMENT OF STRESS URINARY INCONTINENCE IN REPRODUCTIVE AGE WOMEN</th>
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<tr>
<td>Juan Sanchez, MD, Melissa Laudano, MD, Pamela Escobar, MD, Nitya Abraham, MD, Ava Leegant, MD and Keith Downing, MD</td>
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<tr>
<td>Montefiore Medical Center, Bronx, NY</td>
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<td>Presented By: Melissa A. Laudano, MD</td>
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<th>Poster #NM39</th>
<th>THE MANAGEMENT AND EFFICACY OF SURGICAL OUTCOMES USED FOR EROSIIVE MESH IN THE URETHRA AND BLADDER</th>
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<tr>
<td>Dominique Thomas, BS, Vickie Cadestin, MS, Tsung Mou, MD and Bilal Chughtai, MD</td>
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<tr>
<td>Weil Cornell Medicine, New York, NY</td>
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<td>Presented By: Dominique Dana Marie Thomas, BS</td>
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</table>
| Poster #NM40 | ROLE OF POSTOPERATIVE UROFLOWMETRY IN PATIENTS WITH RETROPUBIC SLINGS AND MEDIUM – TERM VOIDING DYSFUNCTION: PILOT STUDY.  
Sebastian Viguera, MD and Javier Pizarro-Berdichevsky, MD  
Santiago  
Presented By: Sebastian Viguera, MD |
| --- | --- |
| Poster #NM41 | IMPACT OF AGING ON RADIOGRAPHIC AND FUNCTIONAL PARAMETERS OF THE EXTERNAL ANAL SPHINCTER IN WOMEN WITH FECAL INCONTINENCE  
Amanda Artsen, MD, Keisha Dyer, MD, MPH, Gisselle Zazueta-Damian, Pamela Duran, BS and Marianna Alperin, MD  
1Department of Reproductive Medicine, University of California, San Diego, San Diego, California; 2Female Pelvic Medicine and Reconstructive Surgery, Kaiser Permanente, San Diego, CA; 3School of Engineering, University of California San Diego, San Diego, CA; 4Department of Reproductive Medicine, Division of Urogynecology and Pelvic Reconstructive Surgery, University of California San Diego, San Diego, CA  
Presented By: Amanda Artsen, MD |
| Poster #NM42 | “INCREMENTAL SYRINGE” A NOVEL INVENTION OF A USER FRIENDLY SYRINGE TO INJECT BOTULINUM TOxin WITH IMPROVED ACCURACY, PRECISION, AND SPEED  
Majid Mirzazadeh, MD, Gregory Gillispie, PhD, Kenneth Russel, MS and Philip Brown, PhD  
1Wake Forest University, Winston Salem, NC; 2Wake Forest Innovations, Virginia Tech – Wake Forest School of Biomedical Engineering Sciences  
Presented By: Majid Mirzazadeh, MD |
| Poster #NM43 | FUNCTIONAL OUTCOMES OF SYNTHETIC TAPE AND MESH REVISION SURGERIES: A MONOCENTRIC EXPERIENCE  
Emmanuel Chartier-Kastler, MD, PhD, salima ismail, MD, christine reus, MD, jeremy cohen, MD, thomas seisen, MD and veronique phe, MD, PhD  
1Urology, Paris 6, France; 2Pitie-Salpetriere Hospital, AP-HP, Paris, France  
Presented By: Emmanuel J. Chartier-Kastler, MD, PhD, FEBU |
| Poster #NM44 | PRE-OPERATIVE URODYNAMIC EVALUATION IN FEMALE MEDICARE PATIENTS UNDERGOING A STRESS URINARY INCONTINENCE PROCEDURE: RATES BEFORE AND AFTER THE VALUE TRIAL  
Annah Vollstedt, MD, Rachel Moses, MD, MPH and E. Ann Gormley, MD  
1Dartmouth-Hitchcock Medical Center; 2Lebanon, NH  
Presented By: Annah Vollstedt, MD |
| Poster #NM45 | WITHDRAWN |
| Poster #NM46 | A RANDOMIZED, MULTICENTER STUDY OF AN INTRAVESICAL BALLOON TO TREAT STRESS URINARY INCONTINENCE (SUI): 24 MONTH RESULTS  
Karny Jacoby, MD, Kurt McCammon, MD, Susan Kalota, MD, Harvey Winkler, MD, Jeffrey A. Snyder, MD, Kevin Cline, MD, Kaiser Robertson, MD, Charles Rardin, MD, Randall Kahan, MD, Lonny Green, MD, Shazia A. Malik, MD and Eric Rovner, MD  
1UW Medicine/Northwest Hospital; 2Urology of Virginia, Virginia Beach, VA; 3Urological Associates of Southern Arizona, Tucson, AZ; 4Northwell Health, Great Neck, NY; 5Genitourinary Surgical Consultants, Denver, CO; 6Regional Urology Associates, Shreveport, LA; 7Chesapeake Urology Associates, Hanover, MD; 8Women’s and Infants Hospital, Providence, RI; 9WomanCare, Arlington Heights, IL; 10Virginia Women’s Center, Richmond, VA; 11Valley Urogynecology Associates, Phoenix, AZ; 12Medical University South Carolina, Charleston, SC  
Presented By: Karny Jacoby, MD |
| Poster #NM47 | THE OUTCOME OF IMPLANTATION OF A BLADDER NECK ARTIFICIAL URINARY SPHINCTER (BN AUS) FOR RECURRENT URODYNAMICALLY PROVEN STRESS URINARY INCONTINENCE AND MIXED URINARY INCONTINENCE  
Dunia Benamer, MBBS, Daniela Andrich, MD FRCS, Jeremy Ockrim, MD, FRCS, MB ChB, Tamsin Greenwell, MSc, FRCS, MB ChB and Anthony Mundy, MS, MRCP, FRCS  
UCLH Urology, UCLH, London, UK  
Presented By: Dunia Benamer, MBBS |
Poster #NM48  THE SUBDOMAIN QUESTION 6 ON PAIN OF THE UROGENITAL DISTRESS INVENTORY SHORT FORM IS SENSITIVE TO CHANGE.
Connie Wang, BA, Alana Christie, MS and Philippe Zimmern, MD
UT Southwestern Medical Center
Presented By: Connie N. Wang, BA

Poster #NM49  DURABILITY OF MACROPLASTIQUE IN WOMEN WITH STRESS URINARY INCONTINENCE SECONDARY TO INTRINSIC SPHINCTER DEFICIENCY
Timothy Carroll , Alana Christie, MS, Melissa Foreman RDMS RVT, Gaurav Khatri, MD and Philippe Zimmern, MD
UT Southwestern Medical Center
Presented By: Timothy F. Carroll, BS

Poster #NM50  HIGH CATASTROPHIZING IN SUBJECTS WITH SELF-REPORTED PAINFUL MESH COMPLICATIONS HAVE POORER OUTCOMES
Ariel Moradzadeh, MD1, Juzar Jamnagerwalla, MD2, Karyn Eilber, MD1, Jennifer Anger, MD1 and A. Lenore Ackerman, MD, PhD3
1Cedars-Sinai Medical Center, Los Angeles, CA; 2City of Hope, Duarte, CA; 3Cedars-Sinai Medical Center
Presented By: Ariel Moradzadeh, MD

Poster #NM51  MID-TERM EFFECTIVENESS OF THE REMEEX SYSTEM™ IN WOMEN WITH RECURRENT STRESS URINARY INCONTINENCE OR INTRINSIC SPHINCTER DEFICIENCY: THE EXPERIENCE IN COLOMBIA
Mauricio Plata, MD, MSc, FACS1, Alejandra Bravo-Balado, MD1, Daniela Robledo, MD1, Juan Carlos Castaño, MD2, Catalina Osonó, MD2, Milton Salazar, MD3, Juan Guillermo Velásquez, MD3, Carlos Gustavo Trujillo, MD3, Juan Ignacio Caicedo, MD1 and Juan Guillermo Cataño, MD1
1Department of Urology, Hospital Universitario Fundación Santa Fe de Bogotá and Universidad de los Andes School of Medicine, Bogotá D.C., Colombia; 2Department of Urology, Clinica Universitaria CES, Universidad CES and Pontificia Universidad Bolivariana, Medellin, Colombia.; 3Department of Urology, Clinica Comfamiliar de Risaralda, Pereira, Colombia.; 4Department of Urology, Fundación Oftalmológica de Santander - Clínica Carlos Ardila Lülle, Bucaramanga, Colombia.; 5Department of Urology, Clinica Medellín and Universidad CES, Medellín, Colombia
Presented By: Mauricio Plata, MD, MSc, FACS

Poster #NM52  INCONTINENCE OF URINE DURING SEX ACTIVITY: IMPORTANCE OF AN UNDERREPORTED SYMPTOM
Ricardo Valderrama, Fellow in Urogynecology1, Andrea Suarez Physician2 and Javier Pizarro-Berdichevsky Uro-Gynecologist3
1Catholic University, Santiago , Chile; 2Pontificia Universidad Catolica de Chile, Santiago, Chile; 3Urogynecology unit, sotero del rio hospital, Chile/ division de obstetricia y Ginecologia, pontificia universidad de Chile
Presented By: Ricardo A. Valderrama Sr., Fellow Urogynecology

Poster #NM53  PATIENTS ENCOUNTER LONGER WAIT TIMES TO SEE FPMRS-TRAINED FEMALE PROVIDERS WHEN COMPARED TO THEIR MALE COUNTERPARTS
Wai Lee, MD, Charles Loeb, BA, Tal Cohen, BA, Alice Cheung, BS, Anjali Kapur, BS, Chris Du, BA, Ramsey Kalil, BA, Steven Weissbart, MD and Jason Kim, MD
Stony Brook Medicine, Stony Brook, NY
Presented By: Wai Lee, MD
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<td>Tomas L. Griebling, MD, MPH¹, Ananias Diokno, MD², Diane Newman DNP³, Kathryn Burgio, PhD⁴, Lisa Low, PhD⁴, Michael Maddens, MD⁵, Leslee Subak, MD⁶, Patricia Goode, MD⁷, Carolyn Sampselle, PhD⁸, Ann Robinson RN, MSA⁹, Trevillore Raghunathan, PhD⁹, Judy Boura, MS², Donna McIntyre ² and &amp; The Gladiolus Research Team</td>
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<tr>
<td>¹University of Kansas School of Medicine; ²William Beaumont Hospital, Royal Oak, MI; ³University of Pennsylvania, Philadelphia, PA; ⁴University of Alabama - Birmingham, Birmingham, AL; ⁵University of Michigan, Ann Arbor, MI; ⁶Stanford University, Palo Alto, CA; ⁷Birmingham/Atlanta Veterans Affairs Geriatric Research, Education, and Clinical Center, Birmingham, AL</td>
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<tr>
<td>Presented By: Tomas L. Griebling, MD, MPH</td>
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<td>Paige Kuhlmann, MD¹, Andrew Chen, MD¹, Jeffrey Johnson, BS², Logan Hubbard, BS³, Lenore Ackerman, MD¹, Karyn Eiber, MD¹ and Jennifer Anger, MD¹</td>
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</tr>
<tr>
<td>¹Cedars Sinai Medical Center, Los Angeles, CA; ²Western Michigan University Homer Stryker, MD School of Medicine, Kalamazoo, MI; ³Sidney Kimmel Medical School at Thomas Jefferson University, Philadelphia, PA</td>
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<td>Presented By: Paige Kuhlmann, MD</td>
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<td>Nikki Steinsiek, BS¹, Brittany L. Morgan, BS², Kamran P. Sajadi, MD³ and Lynn M Marshall ScD⁴</td>
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</tr>
<tr>
<td>¹Oregon Health and Science University School of Medicine and OHSU-PSU School of Public Health, Portland, Oregon; ²OHSU-PSU SOPH; ³OHSU Department of Urology; ⁴OHSU Department of Orthopaedics and Rehabilitation, OHSU Epidemiology Program</td>
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<td>Presented By: Kamran P. Sajadi, MD</td>
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<th>SELECTIVE BLADDER DENERVATION FOR THE TREATMENT OF OVERACTIVE BLADDER</th>
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<td>Stefan De Wachter¹ Le Mai Tu², Magali Robert³, Karel Everaert⁴, Eric Rovner⁵ and Roger Dmochowski⁶</td>
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<tr>
<td>¹Dept. Urology, University Hospital Antwerpen, University Antwerpen, Belgium; ²Sherbrooke University Hospital, Canada; ³University of Calgary, Canada; ⁴University of Ghent, Belgium; ⁵Medical University of South Carolina, USA; ⁶Vanderbilt University, USA</td>
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<tr>
<td>Presented By: Stefan De Wachter, MD, PhD</td>
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<th>POSTOPERATIVE URINARY RETENTION AS A PROGNOSTIC FACTOR FOR LONGER-TERM CONTINENCE OUTCOMES AFTER URETHRAL BULKING AGENT INJECTION FOR TREATMENT OF FEMALE STRESS URINARY INCONTINENCE</th>
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<tr>
<td>Amanda Chung, MBBS, MS, FRACS¹, Melanie Aube, MD², Jessica DeLong, MD², Ramon Virasoro, MD³, Jeremy Tonkin, MD² and Kurt McCammon, MD²</td>
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<tr>
<td>¹The University of Sydney, Sydney Medical School, Department of Urology, Concord Repatriation General Hospital, Concord, NSW, Australia.; ²Eastern Virginia Medical School, Norfolk VA, USA</td>
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<tr>
<td>Presented By: Amanda S.J. Chung, BSc, MBBS, MS, FRACS</td>
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<td>Nabeel Shakir, MD, Connie Wang, BS, Melissa Foreman, RDMS RVT, Gaurav Khatri, MD and Philippe Zimmern, MD</td>
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<td>UT Southwestern Medical Center</td>
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<td>Presented By: Nabeel A. Shakir, MD</td>
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<td>Poster #NM60</td>
<td>POST OPERATIVE VOIDING PATTERN AND THE RESULTS OF MIDURETHRAL SLING SURGERY IN DIABETIC AND NON DIABETIC FEMALE PATIENTS WITH PURE STRESS URINARY INCONTINENCE</td>
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<td>DongWan Sohn¹, SunWook Kim, MD², SungDae Kim, MD, PhD³ and DongSup Lee, MD, PhD²</td>
</tr>
<tr>
<td></td>
<td>¹Yeouido St.Mary's Hospital; ²Yeouido St.Mary's Hospital, Seoul, Korea; ³Jeju National University Hospital, Jeju, Korea; ⁴St. Vincent's Hospital, Suwon, Korea</td>
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<td>Presented By: Dongwan Sohn, MD</td>
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<th>Poster #NM61</th>
<th>RISK FACTORS FOR PROLONGED HOSPITALIZATION AND MAJOR COMPLICATIONS FOLLOWING MID URETHRAL SLING REVISION</th>
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<td>Zaid Chaudhry, MD¹, Evgeniy Kreydin, MD², Janine Oliver, MD³, Zachery Baxter, MD⁴, Ja-Hong Kim, MD⁵, Christopher Tarnay, MD⁶ and Shlomo Raz, MD⁷</td>
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<tr>
<td></td>
<td>¹Citrus Obstetrics and Gynecology West Covina, CA; ²Keck School of Medicine at USC</td>
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<td>Department of Urology Los Angeles, CA; ³University of Colorado School of Medicine Division of Urology Denver, CO; ⁴David Geffen School of Medicine at UCLA Department of Urology Los Angeles, CA; ⁵David Geffen School of Medicine at UCLA Department of Obstetrics and Gynecology Los Angeles, CA</td>
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<td>Presented By: Zaid Chaudhry, MD</td>
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<th>Poster #NM62</th>
<th>CIRCUMFERENTIAL AND DORSAL URETHRAL DIVERTICULA: A CONTEMPORARY EXPERIENCE OF THE MOST CHALLENGING GROUP OF DIVERTICULA</th>
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<td>Jai Seth, Sarah Itam, Mahreen Pakzad, Rizwan Hamid, Jeremy Ockrim and Tamsin Greenwell</td>
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<td>Presented By: Jai Seth, FRCS</td>
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<th>Poster #NM63</th>
<th>MID-TERM MACROPLASTIQUE OUTCOME IN WOMEN WITH STRESS URINARY INCONTINENCE SECONDARY TO INTRINSIC SPHINCTER DEFICIENCY</th>
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<td>Timothy Carroll, Alana Christie, MS, Melissa Foreman, RDMS RVT, Gaurav Khatri, MD and Philippe Zimmern, MD</td>
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<td>UT Southwestern Medical Center</td>
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<td>Presented By: Timothy F. Carroll, BS</td>
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<th>Poster #NM64</th>
<th>A COMPARISON OF SYNTHETIC MIDURETHRAL SLINGS (MUS) AND AUTOLOGOUS PUBOVAGINAL SLINGS (PVS) IN THE SETTING OF CONCOMITANT SURGERY</th>
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<td>Deborah Hess, MD, MS, Rena Malik, MD, Alana Christie, MS and Maude Carmel, MD</td>
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<td>UT Southwestern, Dallas, TX</td>
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<td>Presented By: Deborah Sperling Hess, MD</td>
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FRIDAY, MARCH 02, 2018

OVERVIEW

5:45 a.m. - 6:30 a.m.  Zumba
Location: Room 415 AB, 4th Floor

6:30 a.m. - 5:00 p.m. Registration/Information Desk Open
Location: Austin Grand Ballroom Foyer, 6th Floor

7:00 a.m. - 7:45 a.m. Breakfast in Exhibit Hall
Location: Austin Grand Ballroom, Salon F-G, 6th Floor

7:00 a.m. - 5:00 p.m. Speaker Ready Room Hours
Location: Room 602, 6th Floor

7:00 a.m. - 7:30 p.m. Exhibit Hall Open
Location: Austin Grand Ballroom, Salon F-G, 6th Floor

11:45 a.m. - 1:00 p.m. Lunch

6:00 p.m. - 7:30 p.m. Cocktail Hour - Awards Recognition and SUFU Foundation Auction in Exhibit Hall
Location: Austin Grand Ballroom, Salon F-G, 6th Floor
## GENERAL SESSION

### 6:30 a.m. - 8:30 a.m.  
**Biostatistics Course***  
*Pre-Registration for Course Required/*Not CME Accredited

**Location:**  
*Austin Grand Ballroom, Salon J, 6th Floor*

**Speakers:**  
Nazema Y. Siddiqui, MD MHS  
April Slee

### 7:00 a.m. - 8:00 a.m.

**Video Session I**

**Moderators:**  
Benjamin E. Dillon, MD  
Priya Padmanabhan, MD, FACS

**Video #1**  
NOVEL PARAVAGINAL CYSTOCELE REPAIR TECHNIQUE: IMPROVING UPON ANTERIOR COLPORRHAPHY  
Claudia Sevilla MD , Melissa Sanford MD, Sameer Chopra MD, Luis Medina MD, David Ginsberg MD, and Larissa Rodriguez MD  
Los Angeles, CA  
Presented By: Claudia Sevilla, MD

**Video #2**  
VAGINAL WALL APICAL PERFORATION DURING MESH SACROCOLPOPEXY AND RECTOPEXY  
Philippe Zimmern MD, Craig Olson MD and Carlos Finsterbusch MD  
UT Southwestern Medical Center  
Presented By: Philippe E. Zimmern, MD, FACS, FPMRS

**Video #3**  
PERITONEOCOLPOPEXY  
Philippe Zimmern MD and Dominic Lee MD  
UT Southwestern Medical Center  
Presented By: Philippe E. Zimmern, MD, FACS, FPMRS

**Video #4**  
TOTAL AUTOLOGOUS FASCIA LATA ROBOTIC SACROCOLPOPEXY  
Christian Twiss MD, Frank Lin MD and Joel Funk MD  
University of Arizona College of Medicine  
Presented By: Christian Owen Twiss, MD

**Video #5**  
VAGINAL TRACHELECTOMY FOR CERVICAL STUMP PROLAPSE  
Brian Linder MD and John Gebhart MD, MS  
Mayo Clinic, Rochester, MN  
Presented By: Brian J. Linder, MD

**Video #6**  
VESTIBULECTOMY TECHNIQUE FOR REFRACTORY VULVODYNIA  
Neha Rana MD, Tess Crouss MD, Nima Shah MD, Melissa Dawson DO and Kristene Whitmore MD  
Philadelphia, PA  
Presented By: Neha Rana, MD

### 8:00 a.m. - 8:30 a.m.  
**Annual Business Meeting**
### Pelvic Organ Prolapse/Reconstruction Podium Session

**8:30 a.m. - 10:00 a.m.**

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<th>Time</th>
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<th>Abstract Title</th>
<th>Presenters and Affiliations</th>
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<tr>
<td>8:30 a.m.</td>
<td>#18 RISK FACTORS FOR POSTOPERATIVE URINARY RETENTION AFTER PELVIC ORGAN PROLAPSE REPAIR: VAGINAL VERSUS ROBOTIC APPROACH</td>
<td>Julie Cheng, MD, MAE, Hillary Wagner, MD, Joo Kim, MPH and Junchan Yune, MD, Loma Linda, CA</td>
<td>Presented By: Julie W. Cheng, MD, MAE</td>
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<tr>
<td>8:40 a.m.</td>
<td>#19 A RANDOMIZED CONTROLLED TRIAL OF POSTOPERATIVE PELVIC FLOOR PHYSICAL THERAPY AFTER VAGINAL RECONSTRUCTIVE SURGERY</td>
<td>Melissa Dawson, DO, MS, Peter O'Hare, MD, Jennifer Mann, BSN, Karen Widdoes PT, and Howard Goldstein, DO, MPH</td>
<td>Presented By: Melissa L. Dawson, DO, MS</td>
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<tr>
<td>8:50 a.m.</td>
<td>#20 CONCOMITANT HYSTERECTOMY LOWERS THE RATE OF RECURRENT PROLAPSE SURGERY FOR ALL COMPARTMENTS IN A COHORT OF OVER 100,000 WOMEN</td>
<td>Ekene Enemchukwu, MD, Kai Dallas, MD, Raveen Syan, MD, Ericka Sohlberg, MD, Christopher Elliott, MD, and Lisa Rogo-Gupta, MD</td>
<td>Presented By: Kai B. Dallas, MD</td>
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<td>9:00 a.m.</td>
<td>#21 SYMPTOM RESOLUTION AND RECURRENT PROLAPSE FOLLOWING VAGINAL MESH REMOVAL</td>
<td>Andrew Bergersen, MD, Elinora Price MPH, Michael Callegari MBA, Evan Austin, BS, Odutoyosi Oduyemi MPH, Joel Funk, MD, and Christian Twiss, MD</td>
<td>Presented By: Andrew Bergersen, MD</td>
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<td>9:10 a.m.</td>
<td>#22 IS MESH EVER APPROPRIATE FOR USE IN VAGINAL PELVIC ORGAN PROLAPSE REPAIR? A POPULATION-BASED ANALYSIS OF 110,329 WOMEN</td>
<td>Kai Dallas, MD, Lisa Rogo-Gupta, MD, and Christopher Elliott, MD</td>
<td>Presented By: Kai B. Dallas, MD</td>
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<td>9:20 a.m.</td>
<td>#23 EFFICACY OF EARLY SURVEILLANCE URETHROSCOPY TO PREDICT CLINICAL FAILURE AFTER BULBAR URETHROPLASTY: A TRAUMA UROLOGIC RECONSTRUCTIVE NETWORK SURGEONS (TURNS) STUDY</td>
<td>Rachel A. Moses, MD, MPH, Darshan Patel, MD, Sean P. Elliott, MD, MS, FACS, Alexander J. Vanni, MD, Bradley A. Erickson, MD, MS, FACS, Brian B. Voelzke, MD, MS, FACS, Benjamin N. Breyer, MD, MAS, Christopher D. McClung, MD, MS, Thomas G. Smith III, MD, FACS, Angela P. Presson, PhD, and Jeremy B. Myers, MD</td>
<td>Presented By: Rachel A. Moses, MD</td>
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<td>9:30 a.m.</td>
<td>#24 MITOMYCIN-C AND URETHRAL DILATATION: A SAFE, EFFECTIVE AND MINIMALLY INVASIVE PROCEDURE FOR RECURRENT VESICO-URETHRAL ANASTOMOTIC STENOSES</td>
<td>Michael Sourial, MD, Patrick Richard, MD, MSc, FRCSC, Mathieu Bettez, MD, FRCSC, Mazen Jundi, MD, FRCSC, and Le Mai Tu, MD, MSc, FRCSC</td>
<td>Presented By: Michael Sourial, MD</td>
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### 9:40 a.m. #25 GLOBAL OUTCOMES OF SUBURETHRAL SYNTHETIC MIDURETHRAL SLING REMOVAL
Nabeel Shakir, MD, Connie Wang, BA, Nirmish Singla, MD, Feras Alhalabi, MD, Alana Christie, MS, Gary Lemack, MD and Philippe Zimmern, MD
UT Southwestern Medical Center
Presented By: Nabeel A. Shakir, MD

### 9:50 a.m. #26 RISK FACTORS FOR STRESS URINARY INCONTINENCE SURGERY FOLLOWING SLING REVISION: A MULTIVARIATE ANALYSIS OF PATIENTS UNDERGOING TOTAL AND SUBTOTAL EXCISION OF SYNTHETIC MESH SUBURETHRAL SLINGS FOR COMPLICATIONS
Janine Oliver, MD1, Claire Burton, MD2, Lauren Wood, MD2, Zaid Chaudhry, MD3, Lorna Kwan, MD2, Christopher Tarnay, MD4, Z. Chad Baxter, MD2, Ja-Hong Kim, MD2 and Shlomo Raz, MD5
1Division of Urology, Department of Surgery, University of Colorado School of Medicine, Aurora, CO; 2Department of Urology, University of California Los Angeles David Geffen School of Medicine, Los Angeles, CA; 3Citrus Obstetrics and Gynecology West Covina, CA; 4Department of Obstetrics and Gynecology, University of California Los Angeles David Geffen School of Medicine, Los Angeles, CA
Presented By: Janine L. Oliver, MD

### 8:30 a.m. - 10:00 a.m. Male Incontinence/Urodynamics/Neuromodulation Moderated Poster Session
Location: Austin Grand Ballroom, Salon K, 6th Floor
Moderators: Kurt A. McCammon, MD
Matthew P. Rutman, MD

**Poster #M19 OUTCOMES OF PERIURETHRAL BULKING AGENT INJECTION FOR TREATMENT OF POSTPROSTATECTOMY INCONTINENCE AFTER SLING PLACEMENT: A MULTINATIONAL EXPERIENCE.**
Amanda Chung MBBS, MS, FRACS1, William Lynch MBBS, FRACS2, Melanie Aube, MD3 and Kurt McCammon, MD3
1The University of Sydney, Sydney Medical School, Department of Urology, Concord Repatriation General Hospital, Concord NSW, Australia.; 2Macquarie University Hospital, Sydney NSW, Australia; 3Eastern Virginia Medical School, Norfolk VA, United States of America
Presented By: Amanda S.J. Chung, BSc, MBBS, MS, FRACS

**Poster #M20 FACTORS PREDICTIVE OF PROLONGED LENGTH OF STAY AND UNPLANNED READMISSION FOLLOWING ARTIFICIAL URINARY SPHINCTER SURGERY**
Siobhan Hartigan, MD, Leilei Xia, William Jaffe, MD, Thomas Guzzo, MD and Robert C. Kovell, MD
Division of Urology, Department of Surgery, University of Pennsylvania Health System, Philadelphia, PA
Presented By: Siobhan M. Hartigan, MD

**Poster #M21 URINARY RETENTION AFTER ADVANCE® SLING: A MULTI-INSTITUTIONAL RETROSPECTIVE STUDY**
Jennifer Rolef, MD1, Goran Rac, MD1, Lauren Rittenberg, MD1, Lindsey Cox, MD1, Arthur Mourtzinos, MD2, Leaney Westney, MD2, Mike Metro, MD2 and Eric Rovner, MD2
1Medical University of South Carolina, Charleston, SC; 2Lahey Clinic, Burlington, MA; 3MD Anderson, Houston, TX; 4Temple University, Philadelphia, PA
Presented By: Jennifer Rolef, MD

**Poster #M22 DOES THE TIMING OF RADIOThERAPY FOR TREATMENT OF PROSTATE CANCER AFFECT OUTCOMES OF TRANSOBTURATOR SLING PLACEMENT FOR MALE STRESS URINARY INCONTINENCE?**
Clinton Yeaman1, Amanda Chung, BSc/MBBS2 and Kurt McCammon, MD1
1Eastern Virginia Medical School, Norfolk, VA; 2The University of Sydney, Sydney Medical School, Concord NSW, Australia
Presented By: Clinton Yeaman
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<td>M23</td>
<td>CAN THE PENILE CUFF TEST PREDICT THE OUTCOME OF HOLMIUM LASER ENUCLEATION OF THE PROSTATE FOR BENIGN PROSTATIC OBSTRUCTION?</td>
<td>Kwang Jin Ko, Hyung-gon Kim, PhD and Kyu-Sung Lee, MD, PhD</td>
<td>Kyu-Sung Lee, MD, PhD</td>
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<td>M24</td>
<td>PREDICTORS OF IDIOPATHIC DETRUSOR OVERACTIVITY ON URODYNAMICS: SYMPTOMS OF OVERACTIVE BLADDER AND DEGREE OF CORRELATION</td>
<td>Elisabeth M. Sebesta, MD, Gen Li, PhD, Carrie M. Aisen, MD, Marissa Theofanides, MD and Doreen E. Chung, MD</td>
<td>Elisabeth Sebesta, MD</td>
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<td>M25</td>
<td>IMPACT OF AUA PRACTICE GUIDELINES ON URODYNAMIC PRACTICE PATTERNS</td>
<td>Elizabeth Rourke, DO, MPH, William Meeks, Daniel Pichardo and Stephen Kraus, MD, FACS</td>
<td>Elizabeth Rourke, DO, MPH</td>
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<tr>
<td>M26</td>
<td>PRODUCT PERFORMANCE EVENTS IN SACRAL NEUROMODULATION PATIENTS: RESULTS FROM THE PRODUCT SURVEILLANCE REGISTRY</td>
<td>Karl Kreder, MD, MBA, Kevin Benson, MD, Keisha Sandberg MPH, Brian Van Dorn, MS and Todd Weaver, PhD, MPH</td>
<td>Karl Joseph Kreder Jr., MD, MBA</td>
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<td>M27</td>
<td>OUTCOMES OF SACRAL NEUROMODULATION FOR TREATMENT OF REFRACTORY OVERACTIVE BLADDER AMONGST OCTOGENARIANS</td>
<td>Nichole Young-Lin, MD, Raveen Syan, MD, Michele Torosis, MD, Craig Comiter, MD and Ekene Enemchukwu, MD</td>
<td>Raveen Syan, MD</td>
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<td>M28</td>
<td>CHRONIC Tibial NERVE STIMULATION FOR OVERACTIVE BLADDER: EARLY RESULTS WITH AN OFFICE BASED, PERCUTANEOUSLY IMPLANTED LEAD</td>
<td>Larry Sirls, MD, Amanda Schonhoff, BSN, Angela Waldvogel, BSN, Deborah Hasenau, MS and Kenneth Peters, MD</td>
<td>Larry Thomas Sirls II, MD</td>
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**8:30 a.m. - 10:00 a.m.**

Male Incontinence/Urodynamics/Neuromodulation Non-Moderated Poster Session*

*Location: Austin Grand Ballroom Foyer, 6th Floor*

*Not CME Accredited*

<p>| Poster #NM65 | PATIENT GLOBAL IMPRESSION OF CHANGE (PGIC) AND ICIQ-URINARY INCONTINENCE SCORING SYSTEMS DEMONSTRATE POOR RELIABILITY OF PAD WEIGHT ASSESSMENTS FOLLOWING MALE SLING SURGERY | Sarah Itam, Jai Seth, Bogdan Toia, Eskinder Solomon, Mahreen Pakzad, Rizwan Hamid, Tamsin Greenwell and Jeremy Ockrim | Sarah Itam, MEd FRCS(Urol) MBBS |</p>
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<tr>
<th>Poster #NM66</th>
<th>RETROGRADE LEAK POINT PRESSURE DOES NOT PREDICT OUTCOMES FOLLOWING MALE SLING INSERTION</th>
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<tr>
<td></td>
<td>Bogdan Toia, Jai Seth, Hazel Ecclestone, Mahreen Pakzad, Rizwan Hamid, Tamsin Greenwell and Jeremy Ockrim</td>
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<td>UCLH, London, UK</td>
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<td>Presented By: Bogdan Toia</td>
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<th>Poster #NM67</th>
<th>UPSIZING THE ARTIFICIAL URINARY SPHINCTER PRESSURE REGULATING BALLOON IN MEN WITH PERSISTENT STRESS URINARY INCONTINENCE AFTER INDEX PLACEMENT</th>
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<td></td>
<td>Rachel A. Moses, MD, MPH¹, James R. Craig, MD², Jacob Basilius, MD³, William O. Brant, MD, FACS² and Jeremy B. Myers, MD, FACS²</td>
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<tr>
<td></td>
<td>¹University of Utah, Salt Lake City, UT; ²Salt Lake City, UT</td>
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<td>Presented By: Rachel A. Moses, MD</td>
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<tr>
<th>Poster #NM68</th>
<th>WHAT IS THE FATE OF ARTIFICIAL URINARY SPHINCTERS AMONG MEN UNDERGOING REPETITIVE BLADDER CANCER TREATMENT: A CASE SERIES</th>
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<tr>
<td></td>
<td>Scott Heiner, BS¹, Boyd Viens, MD², Marcelino Rivera, MD³, Brian Linder, MD² and Daniel Elliott, MD²</td>
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<tr>
<td></td>
<td>¹Mayo Clinic School of Medicine, Rochester, MN; ²Department of Urology, Mayo Clinic, Rochester, MN</td>
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<td>Presented By: Scott M. Heiner, BS Biology</td>
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<tr>
<th>Poster #NM69</th>
<th>PREVALENCE AND CHARACTERISTICS OF URINARY INCONTINENCE IN A TREATMENT-SEEKING MALE PROSPECTIVE COHORT – RESULTS FROM THE LURN STUDY</th>
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<td>Brian T. Helfand, MD, PhD¹, Abigail R. Smith, PhD², H. Henry Lai, MD³, Claire C. Yang, MD⁴, John L. Gore, MD, MS⁵, Bradley A. Erickson, MD, MS, FACS⁶, Karl J. Kreder, MD, MBA⁷, Anne P. Cameron, MD⁸, Kevin P. Weinfurt, PhD⁹, James W. Griffith, PhD⁹, Aaron C. Lentz, MD, FACSⁱ⁰, Pooja Talaty, MS, MHA¹¹, Victor P. Andreev, PhD, DSc¹² and Ziya Kirkali, MD, and the LURN Study Group¹³</td>
</tr>
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<td>¹NorthShore University Health System, Glenview, IL; ²Arbor Research Collaborative for Health, Ann Arbor, MI; ³Washington University School of Medicine, St. Louis, MO; ⁴University of Washington, Seattle, WA; ⁵University of Iowa Department of Urology, Iowa City, IA; ⁶University of Michigan, Ann Arbor, MI; ⁷Duke University Medical Center, Durham, NC; ⁸Northwestern University Feinberg School of Medicine, Chicago, IL; ⁹Duke University Division of Urologic Surgery, Raleigh, NC; ¹⁰National Institute of Diabetes and Digestive and Kidney Diseases, Bethesda, MD</td>
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<td>Presented By: Brian T. Helfand, MD, PhD</td>
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<tr>
<th>Poster #NM70</th>
<th>INCIDENCE AND MANAGEMENT OF PERSISTENT STRESS URINARY INCONTINENCE AFTER HOLMIUM LASER ENUCLEATION OF THE PROSTATE</th>
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<td>Mihir Shah, MD, Thomas Hardacker, MD, MBA, Ali Syed, MD, Patrick Shenot, MD, Alana Murphy, MD and Akhil Das, MD</td>
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<td></td>
<td>Thomas Jefferson University Hospital, Sidney Kimmel Medical School, Philadelphia, PA</td>
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<td>Presented By: Mihir Shah, MD</td>
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<th>ADVANCE SLING IN PATIENTS WITH PREVIOUS PROSTATE RADIATION</th>
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<td>Laura Nguyen, MD, Natalie Gaines, MD,² Allison Gurney-McMaster,² Esther Han, DO³, Kenneth Peters, MD³, Jason Gilleran, MD³, Melissa Fischer, MD³ and Larry Sirls, MD³</td>
</tr>
<tr>
<td></td>
<td>¹San Antonio, TX; ²Rochester, MI; ³Royal Oak, MI</td>
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<td>Presented By: Laura Nguyen, MD</td>
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<th>Poster #NM72</th>
<th>EVALUATING SUCCESS RATES AFTER ARTIFICIAL URINARY SPHINCTER PLACEMENT: A COMPARISON OF CLINICAL DEFINITIONS</th>
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<td>Brian Linder, MD, Laureano Rangel and Daniel Elliott Mayo Clinic, Rochester, MN</td>
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<td>Presented By: Brian J. Linder, MD</td>
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<td>Poster #NM73</td>
<td>BULKAMID INJECTION IN MEN – OPERATIVE TECHNIQUE AND PUTATIVE MECHANISM OF ACTION</td>
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<td>Tamsin Greenwell, MD, FRCS, MB ChB&lt;sup&gt;1&lt;/sup&gt;, Jeremy Ockrim, MD, FRCS, MB ChB&lt;sup&gt;2&lt;/sup&gt; and Eskinder Solomon, MSc&lt;sup&gt;2&lt;/sup&gt;</td>
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<td>&lt;sup&gt;1&lt;/sup&gt;UCLH Urology;  &lt;sup&gt;2&lt;/sup&gt;UCLH Urology, UCL, London UK;  &lt;sup&gt;3&lt;/sup&gt;Dept. Medical Science, Guys Hospital, London, UK</td>
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<td>Presented By: Tamsin Jillian Greenwell, MBChB, MD FRCS(Urol)</td>
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<th>LONG-TERM OUTCOMES OF ARTIFICIAL URINARY SPHINCTER IMPLANTATION: A SINGLE CENTER EXPERIENCE</th>
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<td>Alejandro Abello, MD and Anurag K. Das, MD, FACS</td>
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<td>Beth Israel Deaconess Medical Center, Boston, MA</td>
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<td>Presented By: Alejandro Abello, MD</td>
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<th>PATIENTS WITH PRIOR PUDENDAL NERVE ENTRAPMENT SURGERY CAN BENEFIT FROM PUDENDAL NEUROMODULATION</th>
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<td>Kenneth Peters, MD&lt;sup&gt;1&lt;/sup&gt;, Patrick Vecellio&lt;sup&gt;2&lt;/sup&gt;, Kim Killinger&lt;sup&gt;1,2&lt;/sup&gt;, Esther Han, DO&lt;sup&gt;1&lt;/sup&gt;, Laura Nguyen, MD&lt;sup&gt;1&lt;/sup&gt; and Judith Boura&lt;sup&gt;1,2&lt;/sup&gt;</td>
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<td>&lt;sup&gt;1&lt;/sup&gt;Beaumont Health-Royal Oak, Royal Oak, Mi;  &lt;sup&gt;2&lt;/sup&gt;Oakland University Wm. Beaumont School of Medicine, Rochester, Mi;  Presented By: Kenneth M. Peters, MD</td>
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<td>Jason Gilleran, MD, Brian Yuhan, BS&lt;sup&gt;1&lt;/sup&gt;, Kim Killinger, MSN&lt;sup&gt;2&lt;/sup&gt;, Jamie Bartley, DO&lt;sup&gt;2&lt;/sup&gt;, Laura Nguyen, MD&lt;sup&gt;2&lt;/sup&gt;, Esther Han, MD&lt;sup&gt;2&lt;/sup&gt;, Lary Sirls, MD&lt;sup&gt;2&lt;/sup&gt;, Judy Boura, MSN&lt;sup&gt;2&lt;/sup&gt; and Kenneth Peters, MD&lt;sup&gt;2&lt;/sup&gt;</td>
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<td>&lt;sup&gt;1&lt;/sup&gt;Rochester, Mi;  &lt;sup&gt;2&lt;/sup&gt;Royal Oak, Mi</td>
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<td>Presented By: Jason P. Gilleran, MD</td>
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<th>SALVAGE SACRAL NERVE STIMULATION AFTER INADEQUATE RESPONSE TO ONABOTULIUNUMTOXIN A FOR THE TREATMENT OF OVERACTIVE BLADDER – IS THERE HOPE AFTER CROSSOVER?</th>
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<td>Shree Agarwal, BS&lt;sup&gt;1&lt;/sup&gt;, Patricia Zahner, MD&lt;sup&gt;2&lt;/sup&gt;, Laura Giusto, MD&lt;sup&gt;2&lt;/sup&gt;, Jessica Lloyd, MD&lt;sup&gt;2&lt;/sup&gt;, Juan Guzman, MD&lt;sup&gt;2&lt;/sup&gt;, Courtenay Moore, MD&lt;sup&gt;2&lt;/sup&gt;, Raymond Rackley, MD&lt;sup&gt;2&lt;/sup&gt;, Sandip Vasavada, MD&lt;sup&gt;2&lt;/sup&gt; and Howard Goldman, MD&lt;sup&gt;2&lt;/sup&gt;</td>
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<td>&lt;sup&gt;1&lt;/sup&gt;Cleveland Clinic, Cleveland, OH;  &lt;sup&gt;2&lt;/sup&gt;Cleveland, OH</td>
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<td>Presented By: Shree Agarwal, BS</td>
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<td>Siri Drangsholt, MD, Jeremy Slawin, MD and Benjamin Brucker, MD</td>
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<td>NYU, New York, New York</td>
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<td>Presented By: Siri T. Drangsholt, MD</td>
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<th>SACRAL NEUROMODULATION TINED LEAD INFECTION RATE AT 5 YEARS POST-IMPLANT</th>
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<td>Steven Siegel, MD&lt;sup&gt;1&lt;/sup&gt;, Jason Bennett, MD&lt;sup&gt;2&lt;/sup&gt;, Jeffrey Mangel, MD&lt;sup&gt;3&lt;/sup&gt;, Craig Comiter, MD&lt;sup&gt;4&lt;/sup&gt;, Samuel Zylstra, MD&lt;sup&gt;5&lt;/sup&gt;, Tomas L. Griebling, MD&lt;sup&gt;6&lt;/sup&gt;, Erin T. Bird, MD&lt;sup&gt;7&lt;/sup&gt;, Suzette E. Sutherland, MD&lt;sup&gt;6&lt;/sup&gt;, Fangyu Kan, MS&lt;sup&gt;8&lt;/sup&gt; and Kellie Chase Berg, MS&lt;sup&gt;9&lt;/sup&gt;</td>
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<td>&lt;sup&gt;1&lt;/sup&gt;Metro Urology;  &lt;sup&gt;2&lt;/sup&gt;Female Pelvic Medicine, Grand Rapids, Mi;  &lt;sup&gt;3&lt;/sup&gt;MetroHealth Medical Center, Cleveland, OH;  &lt;sup&gt;4&lt;/sup&gt;Stanford University, Stanford, CA;  &lt;sup&gt;5&lt;/sup&gt;Milford Regional Medical Center, Whittinsville, MA;  &lt;sup&gt;6&lt;/sup&gt;University of Kansas, Kansas City, KS;  &lt;sup&gt;7&lt;/sup&gt;Scott and White Healthcare, Temple, TX;  &lt;sup&gt;8&lt;/sup&gt;University of Washington, Seattle, WA;  &lt;sup&gt;9&lt;/sup&gt;Medtronic, Minneapolis, MN</td>
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<td>Presented By: Steven W. Siegel, MD</td>
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<th>DEVELOPMENT OF A NEUROSTIMULATOR IMPLANT TECHNIQUE FOR TIBIAL NERVE STIMULATION</th>
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<td>George Stone, MD&lt;sup&gt;1&lt;/sup&gt;, Daniel Gruber, MD&lt;sup&gt;2&lt;/sup&gt; and Jerome Buller, MD, MBA&lt;sup&gt;3&lt;/sup&gt;</td>
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<td>&lt;sup&gt;1&lt;/sup&gt;Walter Reed National Military Medical Center;  &lt;sup&gt;2&lt;/sup&gt;Walter Reed National Military Medical Center, Bethesda, MD;  &lt;sup&gt;3&lt;/sup&gt;Uniformed Services University of Health Sciences, Bethesda, MD</td>
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<td>Presented By: George W. Stone, MD</td>
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<td>EFFECTIVENESS OF INTRADETRUSOR ONABOTULINUM TOXIN A INJECTIONS IN MANAGING OVERACTIVE BLADDER AFTER INITIAL SACRAL NEUROMODULATION THERAPY</td>
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<td>NM99</td>
<td>CHARACTERIZATION OF BLADDER SENSATION EVENT DESCRIPTIONS DURING NON-INVASIVE ORAL HYDRATION IN HEALTHY ADULTS*</td>
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<td>COMPARISON OF SIMPLE CYSTOMETRY VERSUS MULTICHANNEL URODYNAMIC EVALUATION</td>
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<td>NM92</td>
<td>DO AMBULATORY URODYNAMIC STUDIES CHANGE URODYNAMIC OR CLINICAL DIAGNOSIS AND/OR TREATMENT IN PATIENTS WITH NONE-DIAGNOSTIC OR SYMPTOMATICALLY CONTRADICTORY BASELINE URODYNAMICS.</td>
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<td>NM93</td>
<td>INCORPORATION OF MINDFULNESS EXERCISES TO REDUCE ANXIETY AND PAIN DURING URODYNAMIC TESTING: A RANDOMIZED CONTROLLED PILOT STUDY</td>
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<td>NM94</td>
<td>DIFFERENCES IN BLADDER GEOMETRY DURING FILLING BETWEEN OVERACTIVE BLADDER PATIENTS AND HEALTHY VOLUNTEERS</td>
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<td>NM95</td>
<td>URETHRAL PRESSURE MEASUREMENT AS A TOOL FOR THE URODYNAMIC DIAGNOSIS OF DETRUSOR SPHINCTER DYSSYNERGIA AND STRATIFICATION OF BLADDER PHYSIOLOGY</td>
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Poster #NM96  NOVEL METRICS FOR SENSATION KINETICS DURING URODYNAMICS
Andrew Colhoun, MD, Adam Klausner, MD1, Jacqueline Morin, BS1, Zachary Cullingsworth, BS1, David Rapp, MD2, Stefan De Wachter, MD, PhD3 and John Speich, PhD1
1Virginia Commonwealth University, Richmond, VA; 2Virginia Urology, Richmond, VA; 3University of Antwerp, Antwerp, Belgium
Presented By: Andrew F. Colhoun, MD

Poster #NM97  DOES RECORDING PATIENT PERCEPTION OF URGENCY IMPROVE INTER-READER RELIABILITY FOR IDENTIFYING DETRUSOR OVERACTIVITY ON URODYNAMIC TRACINGS?
Dianne Glass, MD, PhD1, Siri Drangsholt, MD2, Dominique Malacarne, MD2, Victor Nitti, MD2 and Benjamin Brucker, MD2
1University of Chicago Medicine, Department of Gynecology, Chicago, Illinois; 2New York University Langone Medical Center, Department of Urology, New York, New York
Presented By: Dianne Glass, MD, PhD

Poster #NM98  MIDURETHRAL SLING EXPLANT IMPROVES URODYNAMIC BLADDER OUTLET OBSTRUCTION
Casey G. Kowalik, MD, Jorge Jaunarena, MD, Benjamin Dropkin, MD, Sophia Delpe, MD, W. Stuart Reynolds, MD, MPH, Roger R. Dmochowski, MD and Melissa R Kaufman, MD, PhD
Nashville, TN
Presented By: Benjamin Dropkin, MD

Poster #NM99  VALIDATION OF A REAL-TIME BLADDER SENSATION METER DURING ORAL HYDRATION IN HEALTHY ADULTS: EFFECTS OF TRAINING AND ULTRASOUND PROBE PRESSURE
Derek Sheen1, Anna S. Nagle, PhD2, Hiren Kolli1, Naomi N. Vinod1, Hameeda A. Naimi1, Uzoma A. Anele1, Stefan G. De Wachter, MD, PhD3, John E. Speich, PhD2 and Adam P. Klausner, MD1
1Department of Surgery/Division of Urology, Virginia Commonwealth University School of Medicine, Richmond, VA; 2Department of Mechanical & Nuclear Engineering, Virginia Commonwealth University School of Engineering, Richmond, VA; 3Department of Urology, University Hospital Antwerpen, Edegem, University of Antwerp, Wilrijk, Belgium; 4Department of Surgery/Division of Urology Hunter Holmes McGuire Veterans Affairs Medical Center, Richmond, VA
Presented By: Derek Sheen, BS in Biology

10:00 a.m. - 10:30 a.m.  Break - Visit with Exhibitors
10:30 a.m. - 10:35 a.m.  Announcements
Speaker: Kathleen C. Kobashi, MD, FACS
10:35 a.m. - 11:00 a.m.  A Field Guide to Translational Research for the SUFU Clinician
Speaker: Adam P. Klausner, MD
11:00 a.m. - 11:30 a.m.  Panel: Transgender Medicine and Gender Affirmation Surgery
Moderator: Polina Reyblat, MD
Male to Female
Panelist: Lee C. Zhao, MD
Female to Male
Panelist: Dmitriy Nikolavsky, MD
Multidisciplinary Approach
Panelist: Polina Reyblat, MD
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<td>11:30 a.m. - 11:45 a.m.</td>
<td>SUFU Foundation Grant Presentations</td>
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<td>Moderator: Kathleen C. Kobashi, MD, FACS</td>
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<tr>
<td>11:30 a.m. - 11:35 a.m.</td>
<td>Localization of OnabotulinumtoxinA and Cystometric Response Following Single versus Multiple Injections for the Treatment of Overactive Bladder in a Rat Model</td>
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<td>Speaker: Amy D. Dobberfuhl, MD</td>
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<td>11:35 a.m. - 11:40 a.m.</td>
<td>Augmented Urothelial Estrogen Signaling is Protective Against Lipopolysaccharide (LPS) Induced Model of Overactive Bladder</td>
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<td>Speaker: Marian Acevedo-Alvarez, MD</td>
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<tr>
<td>11:40 a.m. - 11:45 a.m.</td>
<td>Detrusor Injection of Liposomal Botulinum Toxin A for Treatment of Hyperactive Bladder</td>
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<td>Speaker: Israel Franco, MD</td>
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<td>11:45 a.m. - 1:00 p.m.</td>
<td>Industry Sponsored Lunch Symposium</td>
<td>Governor's Ballroom, Salon A-B, 4th Floor</td>
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<td>1:00 p.m. - 1:15 p.m.</td>
<td>Physician Burnout</td>
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<td>Speaker: Eugene Y. Rhee, MD, MBA</td>
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<td>1:15 p.m. - 1:30 p.m.</td>
<td>The Generation Gap: Effects in the Workplace</td>
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<td>Speaker: Kathleen C. Kobashi, MD, FACS</td>
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<td>1:30 p.m. - 1:50 p.m.</td>
<td>Point-Counterpoint - Vaginal Rejuvenation: Fact or Fiction?</td>
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<td>Moderator: W. Stuart Reynolds, MD, MD, MPH</td>
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<td>Fact: Jennifer T. Anger, MD, MPH</td>
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<td>Fiction: Ryan M. Krlin, MD</td>
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<td>1:50 p.m. - 2:15 p.m.</td>
<td>Point-Counterpoint: Is Urodynamics Necessary Before Surgery for Post-Prostatectomy Incontinence?</td>
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<td>Moderator: Gamal M. Ghoniem, MD, FACS</td>
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<td>Yes: J. Quentin Clemens, MD</td>
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<td>No: John P. Lavelle, MD</td>
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<td>2:15 p.m. - 2:30 p.m.</td>
<td>Innovations in FPMRS</td>
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<td>Speaker: Sandip P. Vasavada, MD</td>
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<td>2:30 p.m. - 3:00 p.m.</td>
<td>Break - Visit with Exhibitors</td>
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<td>3:00 p.m. - 5:00 p.m.</td>
<td>The Journal of Neurourology and Urodynamics: Peer Review Course - Learn How to Effectively Review Manuscripts*</td>
<td>Governor's Ballroom Salad A-B, 4th Floor</td>
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<td>Location: Governor's Ballroom Salad A-B, 4th Floor</td>
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<td>Speakers: David A. Ginsberg, MD, Stephen R. Kraus, MD</td>
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<td>* Pre-Registration for Course Required/*Not CME Accredited</td>
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<td>3:00 p.m. - 3:10 p.m.</td>
<td>Zimskind Lecture</td>
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<td>Moderator: Gary E. Lemack, MD</td>
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<td>Mindfulness as a Path to Productivity</td>
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<td>Recipient: Anne P. Cameron, MD, FPMRS</td>
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3:10 p.m. - 3:40 p.m.  Management of the HUGE Prostate (200 gm)
Moderator:  John C. Hairston, MD

HoLEP  
Speaker:  Mitchell R. Humphreys, MD

TURP  
Speaker:  Anne P. Cameron, MD, FPMRS

Simple Open Suprapubic Prostatectomy  
Speaker:  Gregory T. Bales, MD

Simple Robotic Retropubic Prostatectomy  
Speaker:  Jaspreet S. Sandhu, MD

3:40 p.m. - 3:50 p.m.  SUFU Foundation Grant Presentations
Moderator:  Kathleen C. Kobashi, MD, FACS

3:40 p.m. - 3:45 p.m.  Characterization of the Number of Motor Units and the Innervation Zone Distribution of Female External Anal Sphincter  
Speaker:  Yingchun Zhang, PhD

3:45 p.m. - 3:50 p.m.  Functional Significance of Human External Anal Sphincter Architecture  
Speaker:  Amanda Artsen, MD

3:50 p.m. - 4:00 p.m.  Distinguished Service Award Lecture
Moderator:  Gary E. Lemack, MD

Volunteerism: What’s In It for All of Us  
Recipient:  E. Ann Gormley, MD

4:00 p.m. - 5:00 p.m.  CONCURRENT POSTER/PODIUM SESSION

4:00 p.m. - 5:00 p.m.  Neuromodulation/OAB Moderated Podium Session
Moderators:  Jason M. Kim, MD  
Steven W. Siegel, MD

4:00 p.m.  #27  PERCUTANEOUS STIMULATION OF THE SAPHENOUS NERVE: A NOVEL EXPERIMENTAL APPROACH TO TREATING OVERACTIVE BLADDER.  
Scott MacDiarmid, MD1, Judy Branson RN2, Sasha John, PhD3 and Paul Yoo, PhD3  
1Alliance Urology Associates; 2Alliance Urology Specialists; 3Institute of Biomaterials and Biomedical Engineering, University of Toronto, Toronto, Canada  
Presented By:  Scott A. MacDiarmid, MD

4:10 p.m.  #28  LUMBOSACRAL 1.5 TESLA MRI COMPATIBILITY WITH SACRAL NEUROMODULATION: AN IN-VIVO PROSPECTIVE STUDY  
Juan M. Guzman-Negron, MD1, Javier Pizarro-Berdichevsky, MD2, Bradley Gill, MD1 and Howard B. Goldman, MD1  
1Cleveland Clinic, Cleveland, Ohio; 2Urogynecology Unit, Sotero del Rio Hospital, Chile/Division de Obstetricia y Ginecologia, Pontificia Universidad de Chile/Cleveland Clinic, Cleveland, Ohio  
Presented By:  Juan M. Guzman-Negron, MD  
*2015 SUFU Neuromodulation Grant Recipient

4:20 p.m.  #29  THE CLINICAL AND COST EFFECTIVENESS OF ACUPUNCTURE FOR SYMPTOMATIC R IDO  
Julie Jenks, MSc, RN1, Jingo Paras, RN2, Eabhann O’Connor Much, MB BCH BAQ2, Mahreen Pakzad, MD, FRCS (Urol), MB ChB2, Rizwan Hamid, MSc, FRCS (Urol), MB, ChB2, Jeremy Ockrim, MD, FRCS (Urol), MB ChB2 and Tamsin Greenwell, MD, FRCS (Urol), MB ChB2  
1UCLH Urology; 2UCLH Urology, UCLH, London, UK  
Presented By:  Jeremy Ockrim, MD, FRCS (Urol), MB ChB
4:30 p.m.  #30  A NOVEL SACRAL NEUROMODULATION INFECTION PROTOCOL IS ASSOCIATED WITH REDUCTION IN DEVICE INFECTION
James Connor BA, BS1, Amy Long, MSN2 and Colin Goudelocke, MD3  
1Lincoln Memorial University – DeBusk College of Osteopathic Medicine, Harrogate, TN; 2Erlanger Health System; 3Department of Urology, University of Tennessee - Erlanger, Chattanooga, Tennessee  
Presented By: Colin Murrah Goudelocke, MD

4:40 p.m.  #31  SAFETY & EFFICACY OF THE ECOIN™ IMPLANTABLE TIBIAL NERVE STIMULATION DEVICE FOR OVERACTIVE BLADDER SYNDROME
Scott MacDiarmid, MD, Sharon English, Bilal Kaaki, Vince Lucente, Matthew Clark, Peter Gilling, Patrick Meffan and Peter Sand  
Alliance Urology Specialists  
Presented By: Scott A. MacDiarmid, MD

4:50 p.m.  #32  SAFE AND EFFECTIVE TREATMENT OF OVERACTIVE BLADDER WITH A MINIATURIZED RECHARGEABLE SACRAL NEUROMODULATION SYSTEM
Stefan De Wachter1, Bertil Blok2, Philip Van Kerrebroeck3, Alain Rufion4, Frank Van der Aa5, Marie Aimee Perrouin Verbe1, Ranjana Jairam3 and Suzy Elneil3  
1Dept Urology, University hospital antwerpen, university Antwerpen, belgium; 2Erasmus MC, Rotterdam, The Netherlands; 3Maastricht University Medical Centre, Maastricht, The Netherlands; 4Hôpital Lyon Sud, Pierre Bénite, Lyon, France; 5UZ Leuven, Leuven, Belgium; 6University Hospital of Nantes, Nantes, France; 7National Hospital of Neurology and Neurosurgery, London, United Kingdom  
Presented By: Stefan De Wachter, MD, PhD

4:00 p.m. - 5:00 p.m.  IC/Pelvic Pain/Geriatrics/BPH Moderated Poster Session
Location:  Austin Grand Ballroom, Salon K, 6th Floor  
Moderators: Maude Carmel, MD, FRCSC  

Poster #M29  TITLE: PSYCHOLOGICAL TRAUMA IN INTERSTITIAL CYSTITIS/BLADDER PAIN SYNDROME (IC/BPS): AN ANALYSIS AND CONSIDERATIONS FOR CLINICAL PRACTICE
Lindsey C. McKernan, PhD1, William S. Reynolds, MD, MPH2, Roger R. Dmochowski, MD, MMHC3 and Leslie J. Crofford, MD3  
1Department of Psychiatry & Behavioral Sciences, Vanderbilt University School of Medicine, Nashville, TN; 2Department of Urologic Surgery, Vanderbilt University School of Medicine, Nashville, TN; 3Department of Medicine, Vanderbilt University School of Medicine, Nashville, TN  
Presented By: Lindsey C. McKernan, PhD

Poster #M30  IS THERE A ROLE FOR CYSTOSCOPY WITH FULGURATION IN THE MANAGEMENT OF RECURRENT URINARY TRACT INFECTIONS IN WOMEN?
Joseph Crivelli, Feras Alhalabi, MD and Philippe Zimmern, MD  
UT Southwestern Medical Center  
Presented By: Joseph J. Crivelli, MD

Poster #M31  COST-UTILITY ANALYSIS OF UPFRONT PHARMACOTHERAPY COMPARED TO AN UPFRONT SURGICAL INTERVENTION FOR PATIENTS WITH BENIGN PROSTATE HYPERPLASIA
Dean Elterman, MD, MSc, FRCSC1, Lisa Masucci 2, Shaun Shepherd 3, Aysegeul Erman 2 and Murray Krahn4  
1University Health Network - Toronto Western Hospital, Toronto, ON; 2University of Toronto, Toronto, ON; 3McMaster University, Toronto, ON; 4University Health Network, Toronto, ON  
Presented By: Dean S. Elterman, MD, MSc, FRCSC
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<tr>
<th>Poster #</th>
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<tr>
<td>M32</td>
<td>VALUE OF ENUCLEATION-MORCELLATION EFFICACY TO PREDICT THE LEARNING CURVE OF HOLMIUM LASER ENUCLEATION OF THE PROSTATE FOR TREATMENT OF BENIGN PROSTATIC HYPERPLASIA</td>
<td>Sung Tae Cho, MD, PhD¹, Don Kyoung Choi, MD¹, Ohseong Kwon, MD¹, Young Goo Lee, MD, PhD¹ and Ji-Yeon Han, MD²</td>
<td>Sung Tae Cho, MD, PhD</td>
<td>Austin Grand Ballroom Foyer, 6th Floor</td>
<td>4:00 p.m. - 5:00 p.m.</td>
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<td>M33</td>
<td>EFFICACY OF TRANSCUTANEOUS POSTERIOR TIBIAL NERVE STIMULATION IN OLDER PATIENTS WITH OVERACTIVE BLADDER SYNDROME</td>
<td>Rebecca Haddad, MD¹, Claire Hentzen, MS², Françoise Valentini, MD¹, Gilberte Robain, MD, PhD¹ and Gerard Amarenco, MD, PhD²</td>
<td>Rebecca Haddad, MD</td>
<td>4:00 p.m. - 5:00 p.m.</td>
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<td>NM100</td>
<td>COST-EFFECTIVENESS OF GREENLIGHT PHOTOSELECTIVE VAPORIZATION OF THE PROSTATE COMPARED TO TRANSURETHRAL RESECTION OF THE PROSTATE FOR BENIGN PROSTATIC HYPERPLASIA</td>
<td>Dean Elterman, MD, MSc, FRCSC¹, Lisa Massuci², Aysegul Erman², Michelle Furman³, Shaun Shepherd⁴ and Murray Krahnt⁵</td>
<td>Dean S. Elterman, MD, MSc, FRCSC</td>
<td>4:00 p.m. - 5:00 p.m.</td>
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<td>NM101</td>
<td>CORRELATION BETWEEN NOCTURIA AND SEXUAL FUNCTION IN BENIGN PROSTATIC HYPERPLASIA</td>
<td>DongWan Sohn¹, SunWook Kim, MD¹, SungDea Kim, MD, PhD² and Dong Sup Lee, MD, PhD³</td>
<td>DongWan Sohn, MD</td>
<td>4:00 p.m. - 5:00 p.m.</td>
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<td>NM102</td>
<td>REGIONAL VARIATION IN TRANSURETHRAL RESECTION OF PROSTATE (TURP) DECLINE IN THE MODERN SURGICAL ERA</td>
<td>Elisabeth M. Sebesta, MD, Matthew P. Rutman, MD and Elias Hyams, MD</td>
<td>Elisabeth Sebesta, MD</td>
<td>4:00 p.m. - 5:00 p.m.</td>
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<td>NM103</td>
<td>THE TEMPORARY IMPLANTABLE NITINOL DEVICE (ITIND) FOR THE MINIMALLY INVASIVE TREATMENT OF BPH: COMPARISON OF 3-YEAR OUTCOMES &amp; COST IN CANADA</td>
<td>Dean Elterman, MD, MSc, FRCSC¹ and Shaun Shepherd, MSc²</td>
<td>Dean S. Elterman, MD, MSc, FRCSC</td>
<td>4:00 p.m. - 5:00 p.m.</td>
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<td>NM104</td>
<td>CHANGES IN TOTAL GLAND AND CENTRAL Zone VOLUMES FOLLOWING PROSTATE ARTERY EMBOLIZATION: RESULTS FROM A PROSPECTIVE STUDY</td>
<td>Rehan Ali, MD¹, Samdeep Mouli, MD¹, Frank Miller, MD¹, Ahmed Gabr, MD¹, Ronald Mora, MD¹, Ali Asadi¹, Nadine Abouchaleh¹, Ahsun Riaz, MD¹, Robert Lewandowski, MD¹, Nabeel Hamoui, MD¹, John Hairston, MD¹ and Riad Salem, MD, MBA²</td>
<td>John Hairston, MD</td>
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<td>Poster #NM105</td>
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<td>Poster #NM106</td>
<td>CHARACTERISTICS OF CLINICAL TRIALS FOR BENIGN PROSTATIC HYPERPLASIA</td>
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<td>Dominique Thomas, BS, Caroline Chung, BS, Alexis Te, MD and Bilal Chughtai, MD</td>
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<td>Poster #NM107</td>
<td>ROLE OF PHOTOVAPORIZATION OF THE PROSTATE (PVP) IN MEN WITH A PROSTATE VOLUME LESS THAN 40 GRAMS</td>
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<td>Ramy Goueli, MD, MHS1, Dominique Thomas, BS1, Kevin Zorn, MD2, Malek Meskawi, MD2, Pierre-Alain Hueber, MD2, Vincent Misraj, MD2, Alexis Te, MD1 and Bilal Chughtai, MD1</td>
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<td>1Weill Cornell Medicine, New York, NY; 2University of Montreal Hospital Center, Montreal, QC, Canada</td>
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<td>Presented By: Ramy S. Goueli, MD, MHS</td>
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<td>Poster #NM108</td>
<td>EFFECT OF VAGINAL ESTROGEN ON ASYMPTOMATIC MICROHEMATURIA: A RANDOMIZED CONTROLLED TRIAL [EVER STUDY]</td>
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<td>Allison Polland, MD1, Mihriye Mete, PhD2, Amy Park, MD3, Cheryl Iglesia, MD3 and Lee Richter, MD3</td>
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<td>1MedStar; 2MedStar Health Research Institute; 3MedStar Washington Hospital Center</td>
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<td>Poster #NM109</td>
<td>URINARY RETENTION IN OLDER WOMEN WITH LOWER URINARY TRACT SYMPTOMS: PREVALENCE, ASSOCIATED FACTORS AND IMPACT ON MANAGEMENT</td>
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<td>Rebecca Haddad, MD1, Benoit Peyronnet, MD2, Matthieu Mezzadri, MD3, Claire Hentzen, MS3, Françoise Valentini, MD1, Gerard Amarenco, MD, PhD2 and Gilberte Robain, MD, PhD1</td>
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<td>1Sorbonne University, UPMC Univ Paris 06, AP-HP, GRC 01, Group of Clinical Research in Neuro-Urology, Rothschild Hospital, Neuro-rehabilitation department, Paris, France; 2University Hospital of Rennes, Pontchaillou Hospital, Urology department, Rennes, France; 3AP-HP, Lariboisière University Hospital, Obstetric gynecology department, Paris, France</td>
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<td>Poster #NM110</td>
<td>THE ROLE OF URODYNAMIC TESTING IN DIAGNOSIS AND MANAGEMENT OF VOIDING DYSFUNCTION IN ELDERLY FEMALE DIABETIC PATIENTS WITH URINARY RETENTION</td>
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<td>Cristina Palmer, DO and Gamal Ghoniem, MD, FACS</td>
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<td>Poster #NM111</td>
<td>CLINICAL PRESENTATION OF AN ELDERLY FEMALE POPULATION WITH UNDERACTIVE BLADDER</td>
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<td>Poster #NM112</td>
<td>PAINFUL URGENCY AND/OR PAINFUL FILLING PREDICTIVE OF SOMATIC SYMPTOMS AND CHRONIC PAIN IN WOMEN WITH OVERACTIVE BLADDER</td>
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<td>Casey G. Kowalik, MD, Sophia Delpe, MD, Rachel Sosland, MD, Melissa R. Kaufman, MD, PhD, Roger R. Dmochowski, MD and W. Stuart Reynolds, MD, MPH</td>
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<td>Poster #NM113</td>
<td>LONG TERM OUTCOMES OF TRIAMCINOLONE INJECTIONS IN INTERSTITIAL CYSTITIS/BLADDER PAIN SYNDROME</td>
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<td>Iryna Crescenze, MD, Anne Cameron, MD, John Stoffel, MD, Paholo Barboglio, MD, Quentin Clemens, MD and Priyanka Gupta, MD</td>
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<td>Poster #NM114</td>
<td>FEASIBILITY OF AN INFRARED SPECTROSCOPY DEVICE AS A DIAGNOSTIC TOOL FOR INTERSTITIAL CYSTITIS</td>
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<td>Jennifer Locke, MD, PhD, Karla Rebullar, BSc, Babak Shadgan, MD, Lynn Stothers, MD, Joel Teichman, MD and Mark Nigro, MD</td>
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<tr>
<th>Poster #NM115</th>
<th>T1 MAPPING OF HUMAN BLADDER WALL USING NOVEL CONTRAST MIXTURE IN 3TESLA (T) SCANNER: APPLICATIONS IN BLADDER PAIN SYNDROME/INTERSTITIAL CYSTITIS (BPS/IC)</th>
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<tbody>
<tr>
<td>Pradeep Tyagi, PhD¹, Joseph Janicki, BA², Chan-Hong Moon, PhD³, Jonathan Kaufman, PhD² and Christopher Chermansky, MD¹</td>
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<tr>
<td>¹Department of Urology, University of Pittsburgh School of Medicine; ²Lipella Pharmaceuticals Inc, Pittsburgh PA; ³Department of Radiology, University of Pittsburgh School of Medicine</td>
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<td>Presented By: Christopher J. Chermansky, MD</td>
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<tr>
<th>Poster #NM116</th>
<th>ATYPICAL URETHRITIS: SHOULD WE BE TESTING FEMALE PATIENTS FOR THIS?</th>
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<tbody>
<tr>
<td>Matthew Sorensen, MD¹, Joseph Gray, BS², Austin Broussard, MS³, John Fisher, MD¹, Robert Heidel, PhD⁴, Ryan Pickens, MD¹, James Bienvenu, MD¹ and Rebecca Lavelle, MD¹</td>
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<tr>
<td>¹Department of Urology, University of Tennessee Graduate School of Medicine, Knoxville, TN; ²University of Tennessee College of Medicine, Memphis, TN; ³Department of Surgery, University of Tennessee Graduate School of Medicine, Knoxville, TN</td>
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<th>Poster #NM117</th>
<th>FINANCIAL BURDEN OF RECURRENT URINARY TRACT INFECTIONS IN WOMEN: A TIME-DRIVEN ACTIVITY-BASED COST ANALYSIS</th>
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<tr>
<td>Shivani Gaitonde, Rena Malik, MD and Philippe Zimmerm, MD</td>
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<td>UT Southwestern Medical Center</td>
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<th>Poster #NM118</th>
<th>EVALUATION OF THE URINARY MICROBIOME OF INTERSTITIAL CYSTITIS/BLADDER PAIN SYNDROME PATIENTS: IS THERE A CORRELATION WITH THE URINE CULTURE COLONY COUNT?</th>
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<td>Rebecca Rinko, DO¹, Caitlin Lim, DO², Jaclyn Munoz, MD¹, Mohammed Azaiza³, Melissa Dawson, DO, MS¹, Neha Rana, MD¹ and Kristene Whitmore, MD¹</td>
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<tr>
<td>¹Drexel University College of Medicine, Philadelphia, PA; ²Albert Einstein Medical Center, Philadelphia, PA; ³Lake Erie College of Osteopathic Medicine, Bradenton, FL</td>
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<tr>
<td>Presented By: Rebecca Cori Rinko, DO</td>
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<tr>
<th>Poster #NM119</th>
<th>DOES THE USE OF ANTIBIOTIC PROPHYLAXIS IN PATIENTS OVER 70 YEARS OF AGE PRIOR TO URODYNAMIC TESTING REDUCE THE RATE OF SYMPTOMATIC URINARY TRACT INFECTION?</th>
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<tr>
<td>Elisabeth M. Sebesta, MD, Matthew P. Rutman, MD, Gina Badalato, MD and Kimberly L. Cooper, MD</td>
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<tr>
<td>Department of Urology, NewYork-Presbyterian/Columbia University Medical Center, New York, NY</td>
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<tr>
<td>Presented By: Elisabeth Sebesta, MD</td>
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<th>THE PREVALENCE, SEVERITY AND DISTRIBUTION OF PAIN AMONG OVERACTIVE BLADDER (OAB) PATIENTS ARE INTERMEDIATE BETWEEN INTERSTITIAL CYSTITIS (IC) AND CONTROLS</th>
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<td>Presented By: J. Maung H. Thu, MD</td>
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<tr>
<td>Nashville, TN</td>
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<td>Presented By: Rachel Sosland, MD</td>
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<td>INTERSTITIAL CYSTITIS/BLADDER PAIN SYNDROME: WHAT IS THE QUALITY OF THE INFORMATION PATIENTS FIND ON THE INTERNET??</td>
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<tr>
<td>Nina Mikkilineni, MD¹, Gen Li, PhD² and Doreen E. Chung, MD¹</td>
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<tr>
<td>¹Department of Urology, Columbia University Medical Center, New York, NY; ²Department of Biostatistics, Columbia University Medical Center, New York, NY</td>
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<td>Presented By: Nina Mikkilineni, MD</td>
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<tr>
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<td>Gina Kirkpatrick, DO, MPH¹, Anat Zelmanovich, MD³, Cristina Cicogna, MD¹, Themba Nyirenda, PhD¹, Michelle Kim, MD², Benjamin Press*, Mary Fakunle², Alan Heish¹ and Debra Fromer, MD¹</td>
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<tr>
<td>¹Hackensack University Medical Center, Hackensack, NJ; ²Rutgers-NJ Medical School, Newark, NJ</td>
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<td>Presented By: Gina Kirkpatrick, DO, MPH, MBA</td>
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<tr>
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<tr>
<td>Los Angeles, CA</td>
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<td>Presented By: Melissa Markowitz, BA</td>
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<td>Matthew A. Nielsen, MD¹, Charles Gresham, MS¹, Erin Glace, MSPT¹, Courtney Anderson, PA-C¹, Jessica Delong, MD¹, Ramon Virasoro, MD¹, Jeremy Tonkin, MD¹ and Kurt McCammon, MD¹</td>
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<tr>
<td>¹Eastern Virginia Medical School, Norfolk, Virginia; ²Urology of Virginia, Virginia Beach, Virginia</td>
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<td>Presented By: Matthew A. Nielsen, MD</td>
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<td>Casey G Kowalik, MD, Sophia Delpe, MD, Rachel Sosland, MD, Melissa R Kaufman, MD, PhD, Roger R Dmochoski, MD and W. Stuart Reynolds, MD, MPH</td>
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<td>Nashville, TN</td>
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<td>Presented By: Casey Kowalik, MD</td>
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<td>Rena Malik, MD, Yuefeng Wu, BS and Philippe Zimmern, MD</td>
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<tr>
<td>UT Southwestern Medical Center, Dallas, TX</td>
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<td>Presented By: Rena D. Malik, MD</td>
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<td>Rosa Park, MD¹ and Marisa Clifton, MD²</td>
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<td>¹Hershey; ²Danville, PA</td>
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<td>Presented By: Rosa Park, MD</td>
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<th>WOMEN WITH UROLOGIC CHRONIC PELVIC PAIN SYNDROME (UCPPS) PRESENT WITH MORE SYSTEMIC PAIN OUTSIDE THE PELVIS, SEXUAL PAIN, AND MORE INTENSE PELVIC PAIN AND UROLOGIC SYMPTOMS COMPARED WITH MEN WITH UCPPS</th>
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<tr>
<td>H. Henry Lai, MD¹, Frederick Moh, BS² and Joel Vetter, MS²</td>
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<tr>
<td>¹Washington University School of Medicine; ²St Louis, MO</td>
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<td>Presented By: H. Henry Lai, MD</td>
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<tr>
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<tr>
<td>H. Henry Lai, MD, Frederick Moh, BS and Joel Vetter, MS</td>
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<td>Washington University School of Medicine, St Louis, MO</td>
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<td>Presented By: H. Henry Lai, MD</td>
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### 5:00 p.m. - 6:00 p.m.  **BREAKOUT SESSIONS**

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<th>Directors/Spokespersons</th>
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<tr>
<td>5:00 p.m. - 6:00 p.m.</td>
<td>1. Collaborative Research</td>
<td></td>
<td>Michael J. Kennelly, MD</td>
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<td><strong>Pursuing Research</strong></td>
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<td>Toby C. Chai, MD</td>
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<td><strong>NIH</strong></td>
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<td>Tamara G. Bavendam, MD, MS</td>
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<td><strong>Starting a Collaboration</strong></td>
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<td>Una J. Lee, MD, FPMRS</td>
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<td>5:00 p.m. - 6:00 p.m.</td>
<td>2. Imaging in FPMRS</td>
<td>Austin Grand Ballroom, Salon J, 6th Floor</td>
<td>Larry T. Sirls, II, MD</td>
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<td><strong>Ultrasound</strong></td>
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<td>A. Lenore Ackerman, MD, PhD</td>
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<td><strong>MRI</strong></td>
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<td>Steven J. Weissbart, MD</td>
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<td>5:00 p.m. - 6:00 p.m.</td>
<td>3. Recurrent UTI</td>
<td>Room 400/402, 4th Floor</td>
<td>Melissa R. Kaufman, MD, PhD</td>
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<td><strong>Etiology of Recurrent UTI</strong></td>
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<td>Ksenija Stefanovic, MD, PhD</td>
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<td><strong>Treatment Strategies</strong></td>
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<td>Anne P. Cameron, MD, FPMRS</td>
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### 6:00 p.m. - 7:30 p.m.  **Cocktail Hour - Awards Recognition and SUFU Foundation Auction**

Location: Austin Grand Ballroom, Salon F-G, 6th Floor

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SATURDAY, MARCH 03, 2018

OVERVIEW

6:00 a.m. - 7:00 a.m. Breakfast
Location: Austin Grand Ballroom Foyer, 6th Floor

6:00 a.m. - 12:00 p.m. Registration/Information Desk Open
Location: Austin Grand Ballroom Foyer, 6th Floor

6:00 a.m. - 12:00 p.m. Speaker Ready Room Hours
Location: Room 602, 6th Floor

GENERAL SESSION

7:00 a.m. - 8:00 a.m. Video Session II
Moderators: Jason P. Gilleran, MD
Yahir Santiago-Lastra, MD

Video #7 AUTOLOGOUS RECTUS FASCIA SLING PLACEMENT IN THE MANAGEMENT OF FEMALE STRESS INCONTINENCE
Adam Miller MD⁷, Brian Linder MD² and Deborah Lightner MD²
¹Mayo Clinic; ²Mayo Clinic, Rochester, MN
Presented By: Adam R. Miller, MD

Video #8 AUTOLOGOUS FASCIA LATA HARVEST
Victoria C.S. Scott MD, Victoria C.S. Scott MD, My-Linh Nguyen MD, My-Linh Nguyen MD, Ja-Hong Kim MD, Shlomo Raz MD and Shlomo Raz MD
Los Angeles, CA
Presented By: Victoria C. Scott, MD

Video #9 MACROPLASTIQUE INJECTION IN WOMEN AND MEN
Philippe Zimmern MD
UT Southwestern Medical Center
Presented By: Philippe E. Zimmern, MD, FACS, FPMRS

Video #10 AUTOLOGOUS FASCIA LATA SPIRAL SLING ANAL SPHINCTEROPLASTY
Victoria C.S. Scott MD, Victoria C.S. Scott MD, My-Linh Nguyen MD, My-Linh Nguyen MD, Shlomo Raz MD, Ja-Hong Kim MD and Shlomo Raz MD
Los Angeles, CA
Presented By: Victoria C. Scott, MD

Video #11 REMOVAL OF LARGE DIVERTICULAR CALCULI AND REPAIR OF FEMALE URETHRAL DIVERTICULUM (UD)
Juan M. Guzman-Negron MD and Howard B. Goldman MD
Cleveland Clinic, Cleveland, Ohio
Presented By: Juan Guzman-Negron, MD

Video #12 ROBOTIC BLADDER OUTLET CLOSURE IN MALE PATIENTS WITH SCI
Ali Syed MD, James Mark MD, Thomas Hardacker MD, Mihir Shah MD, Akhil Das MD, Alana Murphy MD and Patrick Shenot MD
Thomas Jefferson University Hospital
Presented By: Ali Syed, MD
8:00 a.m. - 9:30 a.m.  CONCURRENT POSTER/PODIUM SESSION

8:00 a.m. - 9:30 a.m.  Female Urology/Incontinence Moderated Podium Session
Moderators: Michael E. Albo, MD
          Jennifer T. Anger, MD, MPH, FPMRS

8:00 a.m. #33  RANDOMIZED CONTROLLED TRIAL OF GROUP-ADMINISTERED BEHAVIORAL TREATMENT IN REDUCING URINARY INCONTINENCE IN ADULT WOMEN
Diane Newman, DNP, ANP-BC1, Ananias Diokno, MD2, Kathryn Burgio, PhD3, Lisa Low, PhD, RN2, Tomas Griebling, MD6, Michael Maddens, MD2, Leslee Subak, MD4, Patricia Goode, MD6, Carolyn Sampselle, PhD6, Ann Robinson, RN1, Trevillore Raghunathan, PhD4, Judy Boura, MS2, Donna McIntyre, MS2, Alesandra Magno, BS6 and Hanna Stambakio, BS6
1Division of Urology, University of Pennsylvania; 2Oakland University, Royal Oak, MI; 3University of Alabama, Birmingham, AL; 4University of Michigan, Ann Arbor, MI; 5University of Kansas, Kansas City, KS; 6Stanford Univ, Palo Alto, CA; 7Beaumont Hosp, Royal Oak, MI; 8Urology, University of Pennsylvania, Phila, PA
Presented By: Diane Newman, DNP

8:10 a.m. #34  VIBEGRON, A NOVEL ONCE DAILY ORAL BETA-3 AGONIST, SIGNIFICANTLY REDUCES AVERAGE DAILY MICTURITIONS, URGE INCONTINENCE EPISODES AND URGENCY EPISODES IN PATIENTS WITH OVERACTIVE BLADDER
David Mitcheson, MD1, Tara Frenkl, MD2, Suvajit Samanta, PhD2, Cathy Anne Pinto, PhD2, Stuart Green, MD2, Nate Bennett, PhD2 and Paul Mudd Pharm D, MBA1
1Bay State Clinical Trials; 2Merck & Co., Inc., Kenilworth, NJ; 3Roivant Sciences, Inc. on behalf of Urovant Sciences, Inc., a wholly-owned member of the Roivant family of companies, New York, NY.
Presented By: H. David Mitcheson, MD

8:20 a.m. #35  ASSESSMENT OF INNERVATION SYMMETRY OF EXTERNAL ANAL SPHINCTER IN YOUNG AND ELDERLY FEMALES USING HIGH-DENSITY SURFACE ELECTROMYOGRAPHY RECORDINGS
Nicholas Dias, BS1, Xuhong Li, MD, PhD2,3, Chuan Zhang, MS1, Jinbao He, PhD4 and Yingchun Zhang, PhD1
1Department of Biomedical Engineering, University of Houston, Houston, TX; 2The Third Xiangya Hospital; 3Central South University, Changsha, China; 4School of Electronic and Information Engineering, Ningbo University of Technology, Ningbo, China
Presented By: Yingchun Zhang, PhD

8:30 a.m. #36  SURGICALLY INDUCED WEIGHT LOSS RESULTS IN A RAPID AND CONSISTENT IMPROVEMENT OF FEMALE PELVIC FLOOR SYMPTOMS
Asnat Groutz, MD1, Avner Leshem, MD1, Hadar Amir, MD1, David Gordon, MD1 and Mordechai Shimonov, MD2
1Tel Aviv Medical Center, Tel Aviv, Israel; 2Wolfson Medical Center, Holon, Israel
Presented By: Asnat Groutz, MD

8:40 a.m. #37  IS PROPHYLACTIC STRESS INCONTINENCE SURGERY NECESSARY AT THE TIME OF PELVIC ORGAN PROLAPSE REPAIR? - RATES OF FUTURE SURGERY IN A LARGE POPULATION BASED COHORT IN CALIFORNIA
Raveen Syan, MD1, Kai Dallas, MD2, Ericka Sohlberg, MD1, Lisa Rogo-Gupta, MD1, Christopher Elliott, MD1 and Ekene Ememchukwu, MD1
1Stanford, CA; 2Stanford Urology
Presented By: Raveen Syan, MD

8:50 a.m. #38  THE PREVALENCE OF PELVIC FLOOR DISORDERS IN ACTIVE DUTY FEMALE SOLDIERS: DATA FROM THE STANFORD MILITARY DATA REPOSITORY
Lisa Rogo-Gupta, MD, D. Alan Nelson MPAS, PhD, Nichole Young-Lin, MD, Jonathan Shaw, MD and Lianne Kurina, PhD
Stanford University, Stanford, CA
Presented By: Lisa Rogo-Gupta, MD
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<td>9:00 a.m.</td>
<td>#39</td>
<td>NONINVASIVE MOTOR UNIT NUMBER ESTIMATION OF THE PUBORECTALIS MUSCLE IN FEMALES</td>
<td>Nicholas Dias, BS¹, Charles Popeney, DO², Jinhao He, PhD³ and Yingchun Zhang, PhD¹; ¹Department of Biomedical Engineering, University of Houston, Houston, TX; ²Fort Bend Neurology, Sugar Land, TX; ³School of Electronic and Information Engineering, Ningbo University of Technology, Ningbo, China</td>
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<td>Presented By: Yingchun Zhang, PhD</td>
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<td>9:10 a.m.</td>
<td>#40</td>
<td>DO PATIENTS DISCONTINUE OVERACTIVE BLADDER MEDICATIONS AFTER SACRAL NEUROMODULATION?</td>
<td>Katherine Amin, MD, Dena Moskowitz, MD, Kathleen Kobashi, MD, Una Lee, MD and Alvaro Lucioni, MD; Virginia Mason Medical Center, Department of Urology, Seattle, WA</td>
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<td>Presented By: Katherine Amin, MD</td>
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<td>9:20 a.m.</td>
<td>#41</td>
<td>ORAL ENOBOSARM SHOWS PROMISING ACTIVITY IN POST-MENOPAUSAL WOMEN WITH STRESS URINARY INCONTINENCE: RESULTS OF A PHASE 2 STUDY</td>
<td>Kenneth M. Peters, MD¹, Diane Newman DNP², Laurence Belkoff, DO³, Kiran Nandalur, MD¹, Mary Ann Johnston PharmD³, Susan Small RPh³, Ryan Taylor, PhD³ and Larry Sirls, MD³; ¹Oakland University William Beaumont School of Medicine Royal Oak, MI; ²University of Pennsylvania, Philadelphia, PA; ³Urological Consultants of SEPA, Bala Cynwyd, PA; ⁴GTx Inc., Memphis, TN</td>
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<td>Presented By: Kenneth M. Peters, MD</td>
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<td>8:00 a.m. - 9:30 a.m.</td>
<td>LUTS/Voiding Dysfunction/Neurogenic Bladder Moderated Podium Session</td>
<td>THE DISTRIBUTION OF POST-VOID RESIDUAL VOLUMES (PVR) IN PEOPLE SEEKING CARE: AN ANALYSIS OF 880 PARTICIPANTS OF THE SYMPTOMS OF LOWER URINARY TRACT DYSFUNCTION NETWORK (LURN) OBSERVATIONAL COHORT STUDY</td>
<td>Matthew O. Fraser, PhD¹, Abigail R. Smith, PhD², Claire C. Yang, MD³, John O.L. DeLancey, MD³, Brenda W. Gillespie, PhD³, John L. Gore, MD, MS³, Pooja Talaty, MS, MHA³, Victor P. Andreev, PhD, DSc³, Anca Stefan, PhD³, Karl J. Kreder, MD, MBA³, Margaret G. Mueller, MD³, H. Henry Lai, MD³, Bradley A. Erickson, MD, MS, FACS³, Ziya Kirkali, MD³ and Andrew C. Peterson, and the LURN Study Group³; ¹Duke University, Durham, NC; ²Arbor Research Collaborative for Health, Ann Arbor, MI; ³University of Washington, Seattle, WA; ⁴University of Michigan, Ann Arbor, MI; ⁵NorthShore University Health System, Chicago, IL; ⁶University of Iowa, Iowa City, IA; ⁷Northwestern University, Chicago, IL; ⁸Washington University School of Medicine, St. Louis, MO; ⁹National Institute of Diabetes and Digestive and Kidney Diseases, Bethesda, MD</td>
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<td>8:10 a.m.</td>
<td>#42</td>
<td>NO INCREASED RISK OF CLEAN INTERMITTENT CATHETERIZATION WITH ONABOTULINUMTOXINA RETREATMENT: POOLED ANALYSIS OF RANDOMIZED CONTROLLED TRIALS</td>
<td>Gary Lemaack¹, Eric Rovner², Kurt McCammon³, Francisco Cruz³, Rizwan Hamid³, Sidney Radomski³, Amelia Orejudos², Tamer Aboushwareb² and Jennifer Sobol²; ¹University of Texas Southwestern Medical Center, Dallas, TX, USA; ²Medical University of South Carolina, Charleston, SC, USA; ³Eastern Virginia Medical School, Norfolk, VA, USA; ⁴Hospital S. João &amp; Universidade Do Porto, Porto, Portugal; ⁵University College London Hospitals, London, UK; ⁶University of Toronto, Toronto, Canada; ⁷Allergan plc, Irvine, CA, USA; ⁸Michigan Institute of Urology, West Bloomfield, MI, USA</td>
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<td>Presented By: Matthew O. Fraser, PhD</td>
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<td>8:20 a.m.</td>
<td>#44</td>
<td>RELATIONSHIPS BETWEEN METABOLIC FACTORS, URINARY INCONTINENCE AND OVERACTIVE BLADDER SYMPTOMS AMONG MEN AND WOMEN IN THE LURN OBSERVATIONAL COHORT STUDY</td>
<td>H. Henry Lai, MD¹, Margaret E. Helmuth MA², Abigail R. Smith, PhD², Brenda W. Gillespie, PhD² and Ziya Kirkali, MD, and the LURN Study Group³</td>
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<td>8:30 a.m.</td>
<td>#45</td>
<td>SUPRASPINAL CONTROL VARIATIONS IN MULTIPLE SCLEROSIS PATIENTS WHO VOID SPONTANEOUSLY VERUS PATIENTS WITH VOIDING DYSFUNCTION</td>
<td>Rose Khavari, MD, Christof Karmonik, PhD and Timothy Boone, MD, PhD</td>
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<td>8:40 a.m.</td>
<td>#46</td>
<td>CHANGES IN BRAIN ACTIVITY FOLLOWING INTRADETRUSOR INJECTION OF ONABOTULINUMTOXINA IN PATIENTS WITH MULTIPLE SCLEROSIS: AN FMRI STUDY</td>
<td>Rose Khavari, MD, Christof Karmonik, PhD, Katherine Wu , Saba Elias Msc and Timothy Boone, MD, PhD</td>
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<td>8:50 a.m.</td>
<td>#47</td>
<td>THE EFFECTS OF AUGMENTATION CYSTOPLASTY AND BOTULINUM TOXIN USE ON PATIENT REPORTED BLADDER FUNCTION AND SATISFACTION AMONG INDIVIDUALS WITH SPINAL CORD INJURY PERFORMING INTERMITTENT CATHETERIZATION</td>
<td>Jeremy Myers, MD¹, Sara Lenherr, MD, MS¹, John Stoffel, MD², Sean Elliott, MD, MS³, Angela Presson, PhD, MS¹, Chong Zhang, MS¹, Darshan Patel, MD¹, Amitabh Jha, MD, MPH¹, Jeffrey Rosenbluth, MD¹ and Blayne Welk, MD, MSc²</td>
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<td>9:00 a.m.</td>
<td>#48</td>
<td>VOLITIONAL VOIDING OF THE BLADDER AFTER SPINAL CORD INJURY: VALIDATION OF BILATERAL LOWER EXTREMITIE MOTOR FUNCTION AS A KEY PREDICTOR</td>
<td>Christopher Elliott, MD, PhD¹, Kai Dallas, MD², Dimitar Zlatev, MD², Craig Comiter, MD², James Crew, MD² and Kazuko Shem, MD²</td>
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</tbody>
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| 9:10 a.m. | #49 | INTERACTIVE TELEMEDICINE PLATFORM FOR MANAGEMENT OF NEUROGENIC BLADDER AND URINARY TRACT INFECTION PREVENTION FOR INDIVIDUALS WITH TRAUMATIC AND NON-TRAUMATIC SPINAL CORD INJURY | Lynn Stothers, MD, MHS², Emily Deegan BA, BScN, RN², Babak Shadgan, MD, MSc, PhD³, Andrew Macnab, MD (London), FRCPC, FRCPCH, FCAHS², Alex Kavanagh, BSc, MD (Calg), FRCS, MPH (Harvard)² and Mark Nigro, BSc, MD (Alta), FRCS² | M. Lynn Stothers, MD
### 9:20 a.m.  #50  PATIENT REPORTED BLADDER FUNCTION AND SATISFACTION AMONG TETRAPLEGIC PATIENTS WITH DIFFERENT BLADDER MANAGEMENT STRATEGIES

Jeremy Myers, MD\(^1\), Sara Lenherr, MD, MS\(^1\), John Stoffel, MD\(^2\), Sean Elliott, MD, MS\(^3\), Angela Presson, PhD, MS\(^1\), Chong Zhang, BS\(^1\), Darshan Patel, MD\(^1\), Amita Jha, MD, MPH\(^1\), Jeffrey Rosenbluth, MD\(^1\) and Blayne Welk, MD, MSc\(^\ast\)

\(^1\)University of Utah, Salt Lake City, UT; \(^2\)University of Michigan, Ann Arbor, MI; \(^3\)University of Minnesota, Minneapolis, MN; \(^\ast\)Western University, London, Ontario, CAN

Presented By: Jeremy B Myers, MD, FACS

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### 8:00 a.m. - 9:30 a.m. Pelvic Organ Prolapse/Reconstruction Moderated Poster Session

**Location:** Austin Grand Ballroom, Salon K, 6th Floor

**Moderators:** Doreen E. Chung, MD, FRCSC

**Poster #M34**  WHERE DO WOMEN GO FOR REPEAT PELVIC ORGAN PROLAPSE SURGERY? GEOGRAPHIC MIGRATION PATTERNS IN CALIFORNIA AFTER NATIVE TISSUE AND MESH AUGMENTED REPAIRS

Kai Dallas, MD\(^1\), Lisa Rogo-Gupta, MD\(^2\) and Chris Elliott, MD\(^2\)

\(^1\)Stanford Urology; \(^2\)Stanford, Palo Alto, CA

Presented By: Kai B. Dallas, MD

**Poster #M35**  DOES SURGERY IMPROVE BOWEL FUNCTION IN PELVIC ORGAN PROLAPSE?

Esther Han, DO, Laura Nguyen, MD, Jason Gilleran, MD, Jamie Bartley, DO, Kim Killinger, MSN, Judith Boura, MS and Larry Sirls, MD

Beaumont Health, Royal Oak, MI

Presented By: Esther Han, DO

**Poster #M36**  WITHDRAWN

**Poster #M37**  QUALITY OF LIFE OUTCOMES AFTER ROBOTIC SACROCOLOPEXY FOR THE MANAGEMENT OF PELVIC ORGAN PROLAPSE

Annah Vollstedt, MD\(^1\), Paholo Barboglio, MD, MPH\(^2\), William Meeks, MS\(^3\) and Veronica Triaca, MD\(^4,5\)

\(^1\)Dartmouth-Hitchcock Medical Center; \(^2\)University of Michigan, Ann Arbor, MI; \(^3\)Department of Data Management & Statistical Analysis, American Urological Association, Linthicum, MD; \(^4\)Concord Hospital Center for Urologic Care, Concord, NH; \(^5\)Clinical Associate Professor of Surgery, Geisel School of Medicine at Dartmouth, Lebanon, NH

Presented By: Annah Vollstedt, MD

**Poster #M38**  MESHING AROUND: LONG-TERM OUTCOMES FOLLOWING VAGINAL RECONSTRUCTIVE SURGERY WITH SYNTHETIC MESH AUGMENTATION

Margaret Knoedler, MD, Hayley Barnes, MD, Elizabeth Meller, BS, Caroline Kieserman-Shmokler, MD, Dobie Giles, MD, MS, Christine Heisler, MD, MS, Heidi Brown, MD, MAS and Sarah McAchran, MD

Madison, WI

Presented By: Margaret Knoedler, MD

**Poster #M39**  THE OUTCOMES OF URETHROVAGINAL FISTULA REPAIR

Rachel Barratt MB ChB, Stephanie Kotes, MD FEBU, Mahreen Pakzad, MD, FRCS , MB ChB, Rizwan Hamid, MSc, FRCS , MB ChB, Jeremy Ockrim, MD, FRCS , MB ChB and Tamsin Greenwell, MD, FRCS , MB ChB

UCLH Urology, UCLH, London, UK

Presented By: Rachel Barratt, BMBS, MRCS

**Poster #M40**  ILEAL CONDUIT RECONSTRUCTION IN PATIENTS WITH STOMAL STENOSIS OR RETRACTION USING A NEW SEGMENT OF ILEUM

Ali Syed, MD, Mihir Shah, MD, Alana Murphy, MD, Akhil Das, MD and Patrick Shenot, MD

Thomas Jefferson University Hospital

Presented By: Ali Syed, MD
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| M41      | DEVELOPMENT, VALIDATION, AND RESULTS OF A NOVEL INVENTORY TO ASSESS CHANGE IN GENDER DYSPHORIA AFTER GENDER AFFIRMING SURGERY | Maurice Garcia, MD, MAS¹ and Dan Karasic, MD²  
¹Cedars Sinai Medical Center; ²UCSF  
Presented By: Maurice Garcia, MD |
| M42      | INCREASING THE RATE OF VAGINAL REPAIR OF VESICOVAGINAL FISTULAE DOES NOT AFFECT OUTCOME. | Sarah Itam, MD, FRCS; MB ChB, Rachel Barratt, MB ChB, Mahreen Pakzad, MD, FRCS, MB ChB, Rizwan Hamid, MS, FRCS, MB ChB, Jeremy Ockrim, MD, FRCS, MB ChB, Julian Shah, MSc, FRCS, MB ChB and Tamsin Greenwell, MD, FRCS, MB ChB  
UCLH Urology, UCLH, London, UK  
Presented By: Sarah Itam, MEd FRCS(Urol) MBBS |
| M43      | CAUSES OF ARTIFICIAL URINARY SPHINCTER FAILURE AND STRATEGIES FOR SURGICAL REVISION: IMPLICATIONS OF DEVICE COMPONENT SURVIVAL | Arnav Srivastava, BA, MPH, Gregory Joice, MD, Hiten Patel, MD, MPH, Madeleine Manka, MD, Nikolai Sopko, MD, PhD and Edward Wright, MD  
Johns Hopkins Hospital, Baltimore, MD  
Presented By: Arnav Srivastava, BA, MPH |

8:00 a.m. - 9:30 a.m. Pelvic Organ Prolapse/Reconstruction Non-Moderated Poster Session*  
*Not CME Accredited

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| NM131    | OBESITY DOES NOT INCREASE RISK OF PROLAPSE RECURRENCE FOLLOWING SACRAL COLPOPEXY | CR Powell, MD¹, Isamu Tachibana, MD², Bridget Eckrich, BS², Jeffrey Rothenberg, MD² and Thomas Gardner, MD²  
¹Indiana University School of Medicine Department of Urology; ²Indianapolis, IN  
Presented By: Charles R. Powell II, MD |
| NM132    | PAIN IN SURGICAL VERSUS NONSURGICAL PATIENTS WITH PELVIC ORGAN PROLAPSE | Esther Han, DO, Laura Nguyen, MD, Jason Gilleran, MD, Jamie Bartley, DO, Kim Killinger, MSN, Kenneth Peters, MD, Judith Boura, MS and Larry Sirls, MD  
Beaumont Health, Royal Oak, MI  
Presented By: Esther Han, DO |
| NM133    | PATIENT SATISFACTION AND QUALITY OF LIFE AFTER ROBOTIC SACROCOLPOPEXY FOR PELVIC ORGAN PROLAPSE. | Nimesh Patel, BSc¹, Kim Killinger, MSN², Kanika Thapar, BSc¹, Patrick Karabon, MS¹ and Pradeep Nagaraju, MD²  
¹Oakland University William Beaumont School of Medicine, Auburn Hills, MI; ²William Beaumont Hospital, Royal Oak, MI  
Presented By: Nimesh Patel, BSc (Hons) |
| NM134    | COMPARING TWO VOIDDING TRIALS AFTER PELVIC ORGAN PROLAPSE RECONSTRUCTION: A RANDOMIZED CONTROLLED TRIAL | Marjorie Pilkinson, MD¹, Kathryn Williams, MD¹, Cristina Sison, PhD², Dara Shalom, MD¹ and Harvey Winkler, MD¹  
¹Northwell Health, Division of Urogynecology, Great Neck, NY; ²Biostatistics Unit, Feinstein Institute for Medical Research at Northwell Health System, Manhasset NY  
Presented By: Marjorie Pilkinson, MD |
| NM135    | ROBOTIC SACROCOLPOPEXY: ADVERSE EVENTS REPORTED TO THE FDA OVER THE LAST DECADE | Colby P. Souders, MD¹, Hanson Zhao, MD¹, Farnoosh Nik-Ahd, BA², Bilal Chuhtai, MD³ and Jennifer T. Anger, MD, MPH¹  
¹Cedars-Sinai Medical Center, Los Angeles CA; ²University of California, Los Angeles; ³Weill Cornell Medical Center  
Presented By: Colby Perkins Souders, MD |
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<th>Institution</th>
<th>Presenter</th>
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<tr>
<td>NM136</td>
<td>RATES OF CONCURRENT ADNEXAL SURGERY AT THE TIME OF VAGINAL HYSTERECTOMY</td>
<td>Dominique Malacarne, MD, Nancy Ringel, MD and Kimberly Ferrante, MD</td>
<td>NYU, New York, NY</td>
<td>Nancy Ringel, MD</td>
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<tr>
<td>NM137</td>
<td>A NEW CLINICAL DIAGNOSTIC TEST DEMONSTRATING UPSTAGING AND CHANGES IN ANATOMY IN PELVIC ORGAN PROLAPSE: DEFECTS DEMONSTRATED THROUGH 3D PELVIC RECONSTRUCTION AND CHANGES IN PELVIC REFERENCE LINES USING STANDING OPEN MRI</td>
<td>Jennifer Locke, MD, PhD, Alex Kavanagh, MD, MSc, Andrew MacNab, MD and Lynn Stothers, MD</td>
<td>Vancouver, BC</td>
<td>Jennifer A. Locke, MD, PhD</td>
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<tr>
<td>NM138</td>
<td>TITLE: TRENDS IN PELVIC ORGAN PROLAPSE REPAIR: DIFFERENCES IN PELVIC ORGAN PROLAPSE REPAIR APPROACH BY SPECIALTY BEFORE AND AFTER THE FDA MESH WARNING</td>
<td>Christina Escobar, MD¹, Dominque Malacarne, MD² and Kimberly Ferrante, MD, MAS, FACOOG²</td>
<td>New York University, NY, NY; New York University, Obstetrics and Gynecology, NY, NY</td>
<td>Christina Escobar, MD</td>
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<tr>
<td>NM139</td>
<td>USE OF AUTOLOGOUS VASTUS LATERALIS FASCIA FOR REPAIR OF RECURRENT CYSTOCELE</td>
<td>Andrew Medendorp, MD, Lauren Wood, MD, Victoria Scott, MD, My-Linh Nguyen, MD, Zachary Baxter, MD, Shlomo Raz, MD and Ja-Hong Kim, MD</td>
<td>University of California, Los Angeles</td>
<td>Andrew R. Medendorp, MD</td>
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<td>NM140</td>
<td>ROLE OF HYSTERECTOMY AT THE TIME OF NATIVE PELVIC ORGAN PROLAPSE (POP) REPAIR</td>
<td>Bilal Chughtai, MD, Dominique Thomas, BS, Jialin Mao, MD, MSc, Tirsit Asfaw, MD and Art Sedrakyan, MD, PhD</td>
<td>Weill Cornell Medicine, New York, NY</td>
<td>Dominique D. M. Thomas, BS</td>
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<td>NM141</td>
<td>IS VAGINAL VAULT PROLAPSE RECURRENCE AFFECTED BY USING ABSORBABLE SUTURE FOR SACRAL MESH ATTACHMENT DURING ROBOTIC ASSISTED SACROCOLPOPEXY?</td>
<td>Juan M. Guzman-Negron, MD¹, Shree Agrawal, BS², Jessica C. Lloyd, MD¹, Patricia M. Zahn, MD¹, Laura L. Giusto, MD¹ and Howard B. Goldman, MD¹</td>
<td>Cleveland Clinic, Cleveland, Ohio; Case Western Reserve University School of Medicine, Cleveland, Ohio</td>
<td>Juan Guzman-Negron, MD</td>
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<td>NM142</td>
<td>INFLUENCE OF OBSERVATION, SURGICAL APPROACH, AND CONCURRENT HYSTERECTOMY ON PROLAPSE AND URINARY SYMPTOMS</td>
<td>Esther Han, DO, Laura Nguyen, MD, Jason Gillner, MD, Jamie Bartley, DO, Kim Killinger, MSN, Judith Boura, MS and Larry Sirls, MD</td>
<td>Beaumont Health, Royal Oak, MI</td>
<td>Esther Han, DO</td>
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<td>NM143</td>
<td>RELATIONSHIP BETWEEN PELVIC ORGAN PROLAPSE AND METABOLIC SYNDROME</td>
<td>Solafa Elshatanoufy, PharmD, MD, Humphrey Atiemo, MD, David Richardson, MD and Ali Luck, MD</td>
<td>Henry Ford Health Systems, Detroit, Michigan</td>
<td>Solafa Elshatanoufy, PharmD, MD</td>
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Poster #NM144  ANTERIOR ENTEROCELE ON MR DEFECOGRAPHY AS AN ETIOLOGY FOR ANTERIOR VAGINAL BULGE
Muhammad Aziz, Gaurav Khatri, MD, Deborah Hess, MD and Philippe Zimmern, MD
UT Southwestern Medical Center
Presented By: Muhammad Aziz, MD

Poster #NM145  PELVIC ORGAN PROLAPSE REPAIR AFTER RADICAL CYSTECTOMY
Andrew Medendorp, MD and Christopher Tarnay, MD
University of California, Los Angeles
Presented By: Andrew R. Medendorp, MD

Poster #NM146  ABDOMINAL MESH SACROCLOPOPEXY WITHOUT PROMONTORY FIXATION- THE PERITONEOCLOPOPEXY TECHNIQUE
Philippe Zimmern, MD
UT Southwestern Medical Center
Presented By: Philippe E. Zimmern, MD, FACS, FPMRS

Poster #NM147  AUTOLOGOUS RECTUS FASCIA PELVIC ORGAN PROLAPSE REPAIR: A MESH FREE SOLUTION FOR POP?
Jai Seth, Bogdan Toia, Hazel Ecclestone, Mahreen Pakzad, Rizwan Hamid, Tamsin Greenwell and Jeremy Ockrim
Presented By: Jai Seth, FRCS

Poster #NM148  IMPACT OF ADJUVANT RADIATION ON ARTIFICIAL URINARY SPHINCTER DURABILITY IN POST-PROSTATECTOMY PATIENTS
Arnav Srivastava, BA, MPH, Gregory Joice, MD, Hiten Patel, MD, MPH, Madeleine Manka, MD, Nikolai Sopko, MD, PhD and Edward Wright, MD
Johns Hopkins Hospital, Baltimore, MD
Presented By: Arnav Srivastava, BA, MPH

Poster #NM149  ROBOTIC-ASSISTED LAPAROSCOPIC SURGERY FOR ICS/IUGA CATEGORY 4 COMPLICATIONS OF GENITOURINARY PROSTHESIS AND GRAFT: A SINGLE-CENTER EXPERIENCE
Jason Warncke, MD, Michael Avallone, MD and Brian Flynn, MD
University of Colorado, Aurora, Colorado
Presented By: Jason Warncke, MD

Poster #NM150  OUTCOMES OF RECONSTRUCTIVE UROLOGICAL SURGERY IN RADIOTHERAPY PATIENTS
Bogdan Toia, Jai Seth, Hazel Ecclestone, Mahreen Pakzad, Rizwan Hamid, Tamsin Greenwell and Jeremy Ockrim
UCLH
Presented By: Bogdan Toia

Poster #NM151  NO INCREASED RISK OF CARCINOGENESIS WITH MESH-BASED HERNIA REPAIRS
Bilal Chughtai, MD, Art Sedrakyan, MD, PhD, Jialin Mao, MD, MSc, Dominique Thomas, BS, Karyn Eilber, MD, James Clemens, MD, FACS, MSCI and Jennifer Anger, MD
1Weill Cornell Medicine, New York, NY; 2Cedars-Sinai Medical Center, Beverly Hills, CA; 3The University of Michigan Medical Center, Ann Arbor, MI
Presented By: Dominique D. M. Thomas, BS

Poster #NM152  ADVERSE EVENTS REPORTED WITH DA VINCI SURGICAL SYSTEMS OVER THE LAST DECADE
Hanson H. Zhao, MD, Colby P. Perkins, MD, Farnoosh Nik-Ahd, Bilal Chughtai, MD and Jennifer T. Anger, MD, MPH
1Cedars-Sinai Medical Center; 2UCLA David Geffen School of Medicine, Los Angeles, CA; 3Weill Cornell Medical Center, New York City, NY
Presented By: Hanson H. Zhao, MD
**Poster #NM153**

**BUCCAL MUCOSA GRAFT FOR FEMALE URETHRAL RECONSTRUCTION IS NOT ASSOCIATED WITH POST OPERATIVE URINARY INCONTINENCE**

Angelo Gousse, MD¹, Kushan Radadia, MD² and Hari Tunuguntla, MD²

¹Miami, FL; ²New Brunswick, NJ

Presented By: Angelo E. Gousse, MD

**Poster #NM154**

**CONTINENCE AND PAIN OUTCOMES IN EIGHTY-ONE CONSECUTIVE URETHROLYSIS PATIENTS: A SINGLE CENTER EXPERIENCE**

Kyle Rose, MD, MS, Kassem Faraj, MD, Carolan Alexandra, MD, Aqsa Khan, MD and Christopher Wolter, MD

Mayo Clinic, Phoenix, AZ

Presented By: Kyle M. Rose, MD, MS

**Poster #NM155**

**A NOVEL BIOADHESIVE WRAP FOR URETHROVESICAL ANASTOMOSIS REINFORCEMENT**

Bradley Gill, MD, MS, Andrew Baker, Eric Klein, MD and D Geoffrey Vince, PhD

Cleveland Clinic

Presented By: Bradley C. Gill, MD, MS

**Poster #NM156**

**SIZE OF ARTIFICIAL URINARY SPHINCTER CUFF RELATIVE TO URETHRAL CIRCUMFERENCE AND ITS IMPLICATIONS FOR DEVICE EFFICACY OVER TIME**

Arnav Srivastava, BA, MPH, Gregory Joice, MD, Hiten Patel, MD, MPH, Madeleine Manka, MD, Nikolai Sopko, MD, PhD and Edward Wright, MD

Johns Hopkins Hospital, Baltimore, MD

Presented By: Arnav Srivastava, BA, MPH

**Poster #NM157**

**NON-CLINICAL BARRIERS TO CARE IN COMPLEX BENIGN UROLOGIC RECONSTRUCTION AT A QUATERNARY CARE CENTER**

Rachel Sosland, MD, Joshua Cohn, MD, Niels Johnson, MD, Casey Kowalik, MD, Kelvin Moses, MD, PhD, W. Stuart Reynolds, MD, MPH, Doug Milam, MD, Roger R. Dmochowski, MD and Melissa R. Kaufman, MD, PhD

Nashville, TN

Presented By: Rachel Sosland, MD

**Poster #NM158**

**A CROSS-SECTIONAL STUDY OF SEXUAL FUNCTION AND FERTILITY STATUS IN ADULTS WITH CONGENITAL GENITOURINARY ABNORMALITIES**

Hannah McCloskey, Rose Khavari, MD, Aaron Kaviani, MD, Rashmi Pande Msc and Timothy Boone, MD, PhD

Houston, TX

Presented By: Rose Khavari, MD

**Poster #NM159**

**THE RATE OF PYOCYSTIS AND SUBSEQUENT NEED FOR REMNANT BLADDER CYSTECTOMY FOLLOWING ILEAL CONDUIT URINARY DIVERSION FOR BENIGN AETIOLOGY**

George Mankaryous, MBBS, Rachel Barratt, MB ChB, Mahreen Pakzad, MD, FRCS, MB ChB, Rizwan Hamid, MSc, FRCS, MB ChB, Jeremy Ockrim, MD, FRCS, MB ChB and Tamsin Greenwell, MD, FRCS, MB ChB

UCLH Urology, UCLH, London, UK

Presented By: George Mankaryous, MBBS

**Poster #NM160**

**PREVALENCE OF URETHRAL STRicture IN STEVENS-JOHNSON SYNDROME AND TOXIC EPIDERMAL NECROLYSIS**

Tyler Kern, MD¹, Daniel Artenstein, MD¹, Gil Weintraub, MD² and Christopher Tenggardjaja, MD¹

¹Kaiser Los Angeles Medical Center Department of Urology, Los Angeles, CA; ²Massachusetts General Hospital Department of Dermatology, Boston, MA

Presented By: Tyler Kern, MD

**Poster #NM161**

**EARLY VAGINOPLASTY EXPERIENCE WITHIN A MULTIDISCIPLINARY TEAM IN THE INTEGRATED HEALTHCARE SYSTEM**

Virginia Li, MD, Amanda Chi, MD, Melissa Poh, MD and Polina Reyblat, MD

Kaiser Permanente, Los Angeles, CA

Presented By: Virginia Li, MD
Poster #NM162  BLANDY VAGINAL WALL INLAY FLAP IN THE SURGICAL MANAGEMENT OF FEMALE DISTAL URETHRAL STRICTURE DISEASE
Kyle Rose, MD, MS and Christopher Wolter, MD
Mayo Clinic, Phoenix, AZ
Presented By: Kyle M. Rose, MD, MS

Poster #NM163  DEXTROSE INSTILLATION AS AN ALTERNATIVE AGENT TO OBSERVE URETERAL EFFLUX DURING PELVIC RECONSTRUCTIVE SURGERY
Julie Cheng, MD, MAE, G. Austin Krishingner, BA, Kristin Chung, MS, Hillary Wagner, MD, Junchan Yune, MD and Andrea Staack, MD, PhD
Loma Linda, CA
Presented By: Julie W. Cheng, MD, MAE

Poster #NM164  COMMON AND UNCOMMON COMPLICATIONS AFTER MTOF GENDER AFFIRMING SURGERY WITH VAGINOPLASTY
Maurice Garcia, MD, MAS
Cedars Sinai Medical Center
Presented By: Maurice Garcia, MD

Poster #NM165  MANAGEMENT OF PROSTATIC RELATED FLUID COLLECTIONS IN ADULT PATIENTS WITH BLADDER EXSTROPHY WITH MAINTAINANCE OF ERECTILE FUNCTION
Matthias Hofer, MD, PhD, Olga Alexeeva, BS, Davide Cina, BS, Stephanie Kielb, MD, Robert Nadler, MD, Robert Brannigan, MD and John Hairston, MD
Northwestern University
Presented By: Matthias D. Hofer, MD, PhD

Poster #NM166  VENTRAL BUCCAL MUCOSAL GRAFT URETHROPLASTY IN WOMEN WITH URETHRAL STRICTURES
Laura Nguyen, MD, Esther Han, DO, Frank Burks, MD, Jason Gilleran, MD, Kim Killinger, MSN and Larry Sirls, MD
Royal Oak, MI
Presented By: Laura Nguyen, MD

Poster #NM167  FEMALE URETHRAL STRUTURE DISEASE: ROTATIONAL LABIAL FLAP URETHROPLASTY
Bilal Farhan, MD, Tyler McGrath, BSc and Gamal Ghoniem, MD, FACS
University of California, Irvine, CA
Presented By: Bilal Farhan, MD

Poster #NM168  VAGINAL CUFF PERFORATION DURING ROBOTIC ASSISTED MESH RECTOCOLPOPEXY
Philippe Zimmern, MD, Craig Olson, MD and Carlos Finsterbusch, MD
UT Southwestern Medical Center
Presented By: Philippe E. Zimmern, MD, FACS, FPMRS
9:30 a.m. - 9:45 a.m.  What Has the Urinary Incontinence Treatment Network Taught Us?  
Speaker: Michael E. Albo, MD

9:45 a.m. - 9:55 a.m.  Update on FPMRS/MOC  
Speaker: Roger R. Dmochowski, MD, MMHC, FACS

9:55 a.m. - 10:40 a.m.  Case-Based Coding in FPMRS  
Speaker: Mark N. Painter

10:40 a.m. - 11:00 a.m.  Panel: Management of Apical Apex: How to...  
Moderator: Ariana L. Smith, MD

- Vaginal: Sacrospinous Ligament Fixation (SSLF) and Uterosacral Ligament Suspension (ULS)  
  Panelist: Karen L. Noblett, MD, MAS
- Sacrocolpopexy  
  Panelist: Alexander Gomelsky, MD
- Colpocleisis  
  Panelist: Larissa V. Rodriguez, MD, FPMRS

11:00 a.m. - 11:30 a.m.  Point-Counterpoint: Management of Uterine Prolapse  
Moderator: Sandip P. Vasavada, MD

- Hysterectomy  
  Speaker: Karyn S. Eilber, MD, FPMRS
- Hysteropexy (Uterine Sparing)  
  Speaker: Charles R. Rardin, MD, FACOG, FACS

11:30 a.m. - 12:00 p.m.  Panel: Unique Challenges in Neurogenic Bladder  
Moderator: E. Ann Gormley, MD
Panelists: Timothy B. Boone, MD, PhD  
  David A. Ginsberg, MD  
  Jason M. Kim, MD

12:00 p.m. - 12:15 p.m.  Adjourn
2018 Annual Business Meeting Agenda

Society for Urodynamics, Female Pelvic Medicine and Urogenital Reconstruction

Friday, March 2, 2018
8:00 a.m. – 8:30 a.m.

Call to Order – President, Gary E. Lemack, MD

1. Approval of 2017 Minutes and Thank You to Program Chairs – Kathleen C. Kobashi, MD, FACS
2. Treasurer’s Report – Sandip P. Vasavada, MD
3. Awards Committee Report – J. Christian Winters, MD, FACS
4. Membership Committee Report – Victor W. Nitti, MD
5. Nominating Committee Report – Kathleen C. Kobashi, MD, FACS
6. Other – Gary E. Lemack, MD
2018 Winter Meeting

Wednesday, February 28, 2018
1:30 p.m. – 5:45 p.m.

Location: 616 AB, 6th Floor
Speakers and times are subject to change.

1:30 p.m. – 1:35 p.m. Welcome and Introduction
Michael E. Albo, MD

1:35 p.m. – 2:20 p.m. Selecting a Practice

1:35 p.m. – 1:45 p.m. Practice Models
Jennifer T. Anger, MD, MPH, FPMRS

1:45 p.m. – 1:55 p.m. Nuts and Bolts of Contract Negotiations
Timothy B. Boone, MD, MPH

1:55 p.m. – 2:05 p.m. Navigating New Metrics of Performance
Roger R. Dmochowski, MD, MMHC, FACS

2:05 p.m. – 2:20 p.m. Getting a Job - My Experience (Recent Graduates)
Seth A. Cohen, MD
Fenwa Milhouse, MD
Yahir Santiago-Lastra, MD

2:20 p.m. – 2:50 p.m. Physician Leadership – Why is it Important, Who does it and How to get Started?
J. Christian Winters, MD, FACS

2:50 p.m. – 3:00 p.m. SUFU – How, Why and When to get Involved
Kathleen C. Kobashi, MD, FACS

3:00 p.m. – 3:15 p.m. Q&A

3:15 p.m. – 3:30 p.m. Break

3:30 p.m. – 5:45 p.m. Fellow Abstract Presentations
Please Note: Groups 1 & 2 are held concurrently.

Group 1
Location: 616 AB, 6th Floor
Moderators: Melissa Kaufman, MD, PhD
           Alvaro Lucioni, MD

Group 2
Location: 615 AB, 6th Floor
Moderators: Michael E. Albo, MD
           Anne P. Cameron, MD, FPMRS

5:45 p.m. – 5:50 p.m. Wrap Up/Q & A
# Breakout Group One

*Location: 616 AB, 6th Floor*

**Moderators:**
- Melissa Kaufman, MD, PhD
- Alvaro Lucioni, MD

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<td>Marian Acevedo Alvarez, MD</td>
<td>616 AB, 6th Floor</td>
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<td>3:40 p.m. – 3:50 p.m.</td>
<td>Katie Amin, MD</td>
<td>616 AB, 6th Floor</td>
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<td>3:50 p.m. – 4:00 p.m.</td>
<td>Iryna Crescenze, MD</td>
<td>616 AB, 6th Floor</td>
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<td>4:00 p.m. – 4:10 p.m.</td>
<td>Sophia Delpe Goodridge, MD</td>
<td>616 AB, 6th Floor</td>
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<td>4:10 p.m. – 4:20 p.m.</td>
<td>Elizabeth Van Huffel Dray, MD</td>
<td>616 AB, 6th Floor</td>
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<td>4:20 p.m. – 4:30 p.m.</td>
<td>Bilal Farhan, MD</td>
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<td>4:30 p.m. – 4:40 p.m.</td>
<td>Juan Guzman-Negron, MD</td>
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<td>4:40 p.m. – 4:50 p.m.</td>
<td>Christine Horton, MD</td>
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<td>4:50 p.m. – 5:00 p.m.</td>
<td>Casey Kowalik, MD</td>
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<td>5:00 p.m. – 5:10 p.m.</td>
<td>Dena Moskowitz, MD</td>
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<td>5:10 p.m. – 5:20 p.m.</td>
<td>Cristina Palmer, DO</td>
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<td>Patricia Zahner, MD</td>
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<td>5:30 p.m. – 5:45 p.m.</td>
<td><strong>Wrap Up/Q &amp; A</strong></td>
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# Breakout Group Two

*Location: 615 AB, 6th Floor*

**Moderators:**
- Michael E. Albo, MD
- Anne P. Cameron, MD, FPMRS

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<thead>
<tr>
<th>Time</th>
<th>Speaker</th>
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<tr>
<td>3:30 p.m. – 3:40 p.m.</td>
<td>Melanié Aubé, MD</td>
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<td>3:40 p.m. – 3:50 p.m.</td>
<td>Solafa Elshatanoufy, PharmD, MD</td>
<td>615 AB, 6th Floor</td>
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<td>3:50 p.m. – 4:00 p.m.</td>
<td>Laura Giusto, MD</td>
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<td>Esther Han, DO</td>
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<td>4:10 p.m. – 4:20 p.m.</td>
<td>Deborah Hess, MD, MS</td>
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<td>Lindsay Kissane, MD</td>
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<td>Rena Malik, MD</td>
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<td>Laura Nguyen, MD</td>
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<td>Ricardo Palmerola, MD</td>
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<td>Jennifer Rolef, MD</td>
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<td>Melissa Sanford, MD</td>
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<td>Raveen Syan, MD</td>
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Tuesday, February 27, 2018
1:00 p.m. - 2:30 p.m.

Translational Aspects of Research into Neurogenic Bladder
Kenneth M. Peters, MD
Oakland University William Beaumont School of Medicine
Beaumont Health-Royal Oak, Michigan

- Neurogenic voiding dysfunction remains a clinical challenge
- Protection of upper tracts is paramount
- Improving quality of life is an important goal

Restoration of bladder function: Nerve Rerouting
- Consistent prevention or reversal of neurogenic bladder has not been achieved
- Translating nerve reinnervation to humans has been a global challenge
- The concept of joining healthy nerves to injured nerves is not new
- In 1828, Flourens showed the distal end of one transected nerve can make a functional union with the proximal end of another nerve
- In 1907, Kilvington proposed that the neurogenic urinary bladder might be reinnervated by somatic nerves to improve function
- In 1967, Carlsson and Sundin reported on a four-year-old child with spina bifida who underwent rerouting of thoracic to sacral nerve and after 8 months developed reflex micturition and bladder sensation
- Xiao in 1994 demonstrated successful nerve rerouting in rats and the developed reflex arc resulted in bladder contraction
- In 1999, Xiao expanded this concept and cats and demonstrated similar findings
- A number of investigators have continued to explore nerve rerouting in an animal model
- Xiao, in 2003, translated this concept to spinal cord injured patients and reported that 67% achieved satisfactory bladder control and the average PVR fell from 332 cc to 31 cc with improvement in storage pressures and DESD
- Additional positive outcomes were reported by Xiao on 92 SCI and 110 spina bifida patients
- Consistent clinical benefits have been a challenge outside of China
- Sievert et al. in 2016 reported no success in 8 SCI patients treated with nerve rerouting
- In 2014, Peters et al. reported 36 month follow up on 13 spina bifida patients treated with lumbar to sacral nerve rerouting. 7/13 were considered treatment responders, with a voiding efficiency of >50%, ISC 0-1/day and stable renal function
- In 2016, Tuite et al. reported outcomes of a randomized double blind study on 10 patients who had detethering or detethering plus nerve rerouting. They reported no volunteer voiding or complete continence in either group
- A second publication by Tuite in 2016 on the same patient cohort, reported that although their voiding and continence endpoints were not met, those undergoing rerouting had improvement in bladder capacity, bladder overactivity and overall quality of life (100% vs 30%)
- The complexity of the neurogenic patient population is a major challenge in translational research for nerve rerouting and variations in patient populations and definition of success makes it difficult to compare clinical trials

Neurogenic Bladder Prevention: The case for early neuromodulation
- In all cases, upper motor neuron injury ultimately leads to detrusor overactivity and DSD
- Initiating treatment in the early injury phase may prevent this bladder dysfunction
- In 2013, Li et al. reported that in acute spinal cord injury in dogs, early stimulation of the pudendal nerve resulted in improved compliance, enhanced capacity and reduced bladder fibrosis
- In 2016, Biardeau et al. reported in an acute spinal cord injury rat model the early fesoterodine fumurate treatment prevented neurogenic detrusor overactivity
- In 2017, Chen et al. reported in a spinal cord injured rat model, that foot stimulation can increase bladder capacity and reduce DO compared to control animals
- Sievert et al. in 2010 reported intriguing data in humans with SCI. Bilateral sacral neuromodulation implants were placed during the atonic-detrusor phase of the injury and compared to controls. Sacral neuromodulation prevented the development of detrusor overactivity and urinary incontinence, improved bladder capacity, reduced UTI rates and improved bowel and erectile function

Recommended Reading:

Tuesday, February 27, 2018
2:30 p.m. – 3:30 p.m.

Detrusor Interstitial Cells, the Mystery Resolved
Kenton M. Sanders, Ph.D.
University of Nevada, Reno School of Medicine

The bladder has the unique property of maintaining low intravesical pressure throughout most of the period of filling. This is accomplished by restraining the excitability of the smooth muscle cells (SMCs) that line the bladder wall. Loss of the ability to moderate the excitability of SMCs is associated with development of transient contractions (TCs) and detrusor overactivity (DO). Detrusor SMCs are activated by stretch due to expression of mechanosensitive non-selective cation channels. Therefore, other cells, such as neurons or interstitial cells, appear to be required to restrain SMC excitability during filling. Nerves do not seem to be required because manifestations of DO can occur in ex vivo bladders and in the presence of tetrodotoxin. Interstitial cells in the bladder are not c-Kit⁺, and rather than conveying electrical excitability or transducing responses to excitatory neurons, these cells provide powerful inhibitory regulation of SMC excitability. Detrusor c-Kit⁺ cells appear to be mast cells (1), and the regulatory interstitial cells are labeled with either PDGFRα or vimentin antibodies (2). We have used a reporter strain with eGFP expressed in PDGFRα⁺ cells to allow unequivocal identification of these cells in mixed cell dispersions of detrusor muscles (3). This has facilitated physiological and molecular studies of PDGFRα⁺ cells that are sorted to purity by fluorescence activated cell sorting. We found that these cells express Kcnn3 (encoding Ca²⁺-activated K⁺ channels, SK3) (3) and Trpv4 (encoding mechanosensitive, Ca²⁺ permeable channels, TRPV4) (4). Our concept is that stretch of the bladder wall activates TRPV4 channels, admitting Ca²⁺ to PDGFRα⁺ cells, and activating SK3 channels. Outward currents generated hyperpolarize PDGFRα⁺ cells and electrically coupled SMCs, reducing the tendency of SMCs to reach the threshold for action potential generation. This restrains the development of TCs in detrusor muscles during filling. Loss or defects in PDGFRα⁺ cells lead to defective filling responses and development of an overactive phenotype. Progress linking the status of PDGFRα⁺ cells to symptoms of overactivity will be discussed.

Literature cited:


Tuesday, February 27, 2018
3:45 p.m. – 5:10 p.m.

Panel 2: ATP Signaling in the Lower Urinary Tract
How Do We Void, the Role of Purinergic Signaling in the Bladder
Christopher Fry
School of Physiology, Pharmacology & Neuroscience, University of Bristol, UK

Voiding bladder contractions are initiated by postganglionic parasympathetic nerves that release acetylcholine (ACh) to act on M3 receptors on detrusor smooth muscle – blockade of this pathway was the principle to introduce therapeutic modulation of bladder function. However, this simple system is recognised to be more complex for several reasons, one of which is that parasympathetic efferents release ATP as well as ACh. The role of ATP in contractile activation remains contentious and has yet to be a target for therapeutic intervention. This talk will discuss the possible role of purinergic signalling in the normal and abnormal bladder.

Nerve-mediated contractions of the normal, adult human bladder are abolished by atropine suggesting no role for ATP. However, atropine-resistant contractions, themselves abolished by desensitisation of purinergic receptors, are present in most other animals, as well as in human detrusor from neonates and adults with overactive bladders from a variety of pathologies. One hypothesis, for which evidence will be presented, is that ATP is broken down less rapidly in the nerve-muscle junction of atropine-resistant detrusor so that a fraction remains to activate the detrusor. A question arises whether ATP release at the nerve-muscle junction can be selectively reduced if it represents a pathological target in the human adult bladder.

Direct measurement of ATP release from efferents (inhibited by neurotoxins), using amperometric electrodes or luciferin-luciferase assays, shows that it is released over a lower frequency range than ACh. This suggests that different pathways in the nerve terminal are responsible for releasing these neurotransmitters, revealing potential targeted drug models. One such pathway is via adenosine (A) receptors, activation of which selectively reduce ATP release and evidence will be presented for the particular subtype of A-receptor involved. Other agents that target the intracellular pathways that mediate A-receptor function also reduce selectively ATP release. The implications for these observations and how they may be exploited will be discussed.
Tuesday, February 27, 2018
3:45 p.m. – 5:10 p.m.

PANEL 2: ATP Signaling in the Lower Urinary Tract
To Void or Not to Void: ATP Signaling in Bladder Mechanotransduction
Sylvia Suadicani, Ph.D.
Albert Einstein College of Medicine

It was long believed that the storage and voiding functions of the bladder were entirely regulated by the nervous system, which would sense the degree of bladder fullness and accordingly control and coordinate the activity of the bladder and sphincter muscles during the filling and voiding phases of micturition. This “neurocentric” view changed radically more than a decade ago, when studies began demonstrating that there was more to the bladder urothelium than its function as a protective barrier. Urothelial cells were found to have neuron-like properties. They were shown to express a myriad of receptors and channels, to sense and respond to changes in their physical and chemical environment with release of signaling molecules, and thereby to communicate these changes to the CNS by modulating the activity of the bladder afferent nerves, and also to directly influence the activity of the underlying detrusor muscle. The urothelium has since been regarded as a key player in mechanisms that regulate the bladder sensory and motor functions.

In the first part of the talk, we will present a brief retrospective of the studies that disclosed the “sensor” and “transducer” properties of the urothelium. Focus will be given to the role of the urothelium and ATP in bladder mechano-sensing, -transduction and -signaling. We will begin with the studies by Fergusson and colleagues in 1997, which were the first to demonstrate that bladder wall distension induced ATP release from the urothelium. These studies will be discussed in the context of Burnstock’s proposal that purinergic signaling was involved in mechanosensory transduction in hollow organs and would occur when distension induced ATP release from epithelial cells lining these organs and activated P2X3 and/or P2X2/3 receptors on subepithelial sensory nerves to relay information to the CNS. We will then present the main studies that followed, which supported the involvement of P2X2/3 receptors in bladder mechanosignaling, and will provide an updated view of where we stand in this area, based on more recent studies.

The second part of the talk will focus on the molecular mediators and mechanisms involved in urothelial ATP release and bladder mechanotransduction. We will provide an overview of the two mechanisms that mediate controlled cellular ATP release – i.e. vesicular and non-vesicular – and of the main mechanosensitive channels and transducers that are currently considered as components of the “urothelial mechanosensory-transduction apparatus” – e.g. the TRP (Transient receptor potential) channels, epithelial Na⁺ channels (ENaC), Piezo1 channels, and pannexin 1 channels. We will then present what is currently known of factors and mechanisms that regulate the expression and function of these mechanosensor-transducers, including their sensitivity to changes in the bladder mechanical environment.

On the third and last part of the talk, we will emphasize the relevance of the urothelial mechanosensory-transduction system and ATP signaling for proper perception of the degree of bladder fullness and regulation of the storage and voiding functions. We will bring forth the growing body of evidence linking the abnormal expression / function of the urothelial mechanosensor-transducers with the emergence of bladder dysfunction in different pathological conditions. We will then conclude by reiterating the importance of ATP signaling in bladder mechanotransduction, and the increasing recognition of the urothelial mechanosensor-transducers as key functional players and novel therapeutic targets.
Tuesday, February 27, 2018
3:45 p.m. – 5:10 p.m.

Panel 2: ATP Signaling in the Lower Urinary Tract
The Many Faces of Purinergic Regulation in Smooth Muscle: Lessons from the Gut and Bladder
Violeta N. Mutafova-Yambolieva, MD, PhD
University of Nevada Reno School of Medicine

Adenosine 5'-triphosphate (ATP) is a powerful extracellular mediator in many systems including the visceral smooth muscle. ATP is released by vesicle exocytosis from parasympathetic neurons in the urinary bladder and causes detrusor muscle contractions that are mediated by ligand-gated P2X (primarily P2X1) receptors on detrusor smooth muscle cells (SMC). In the distal gastrointestinal tract, ATP is assumed to be an inhibitory motor neurotransmitter that participates in the propulsive motility of the distal gut by contributing to relaxation of the receiving segment of the bowel. The purinergic component of enteric inhibitory neurotransmission is mediated by G-protein-coupled P2Y1 receptors on interstitial cells that express platelet derived growth factor receptor α (PDGFRα+ cells) and form gap junctions with SMC in the gut. Therefore, depending on the effector cells and/or type of receptors that are activated, ATP can be either an excitatory or an inhibitory mediator of visceral smooth muscle tone and contractility. Purinergic regulation of smooth muscle, however, appears to be mediated by more than one biologically-active purine substance. Our group discovered that nicotinamide adenine dinucleotide (NAD), ADP-ribose (ADPR) and uridine adenosine tetraphosphate (Up4A) meet prejunctional and postjunctional criteria for enteric inhibitory neurotransmitters. Interestingly, we also found that NAD and ADPR are released in the bladder detrusor muscle upon action potential firings. This presentation will emphasize the idea that purinergic regulation of visceral smooth muscle is a complex mission of multiple chemical substances, protein molecules and effector cells.

ATP is also released from bladder urothelium preparations upon changes in hydrostatic pressure in Ussing chamber, from cultured urothelial cells upon hypotonicity-induced cell swelling, stretch or drag forces, and in the lumen of ex vivo or in situ bladder preparations. Such observations led to the assumptions that during bladder filling ATP would also be released into the submucosa/lamina propria where it would activate afferent neurons to trigger voiding. There is no direct evidence, however, of ATP release in the submucosa during changes in intraluminal volumes and pressure approximating bladder filling. Furthermore, a plethora of different purines appears to be present in the bladder lumen during filling, suggesting that purinergic regulation of the bladder might be more complex than originally thought. To assess release of ATP and possibly other purines in the submucosa during filling, we developed a decentralized (ex vivo) murine or primate (Macaca fascicularis) bladder model that has the detrusor muscle removed and evaluated simultaneously the availability of purine mediators at the basolateral (submucosa) and apical (lumen) aspects of the bladder wall at low and high volumes and pressure of bladder filling. This approach might be instrumental in understanding local mechanisms of functional connectivity of urothelium and detrusor muscle that contribute to continence and voiding, and help answer unsettled questions about the role of purines in bladder function during filling.
**Tuesday, February 27, 2018**
4:05 p.m. – 5:05 p.m.

**Troubleshooting the AUS**
*Ajay K. Singla, MD*
*Harvard Medical School*

**Most common scenarios:**

1. **Urinary retention:**
   - Immediate: Patient fails to void on foley catheter removal next morning. First examine the scrotal pump to make sure it is deactivated by feeling a dimple. If absent, cycle the device by pressing the pump couple of times. This will resolve the retention. If persists which may suggest significant edema or cuff may be too tight. An attempt is made to empty bladder by gently passing a well lubricated 12 Fr straight catheter to drain the bladder. If one attempt with straight catheter fails, an indwelling 12 FR catheter can be left in for 48-72 hours and in case of persistent retention, supra pubic tube may be required. Late: Patient may go into retention due to inadvertent deactivation with cuff closed. This can be resolved by cycling the device. If persists, it may be secondary to erosion and urethroscopy may be needed to rule out erosion.

2. **Unable to activate sphincter:**
   - The most common cause is insufficient fluid in the scrotal pump. There are a couple of tricks to open the valve within the pump. Try pressing the deactivation button with force for a longer period of time. If that does not do it, try squeezing the narrow sides of upper part of pump. Occasionally, operative intervention may be needed.

3. **Inability to squeeze:**
   - Pump failure could be secondary to debris, blood or air in the tubing or kinking of the tube. This may need exploration and reconnection.

4. **Urinary incontinence:**
   - In immediate period it could be due to loose cuff, low reservoir pressure or leak in the system. Late onset or new onset of incontinence can be due to bladder dysfunction mainly overactive detrusor, mechanical failure, urethral atrophy or urethral erosion. This will need full evaluation with urodynamic and cystoscopy, pelvic ultrasound. The management will depend on the underlying problem and may involve downsizing of cuff, increasing the pressure in the reservoir, removal of eroded cuff. In case of bladder overactivity a trial of anti-muscrinic agents may be required.

5. **Infection:**
   - Usually occurs in early postoperative period and most common agent is staph epidermidis. In the early phase the device may be salvageable with IV antibiotics. In late cases, erosion should be ruled out.

6. **Erosion:**
   - The erosion may be due to tight cuff, poor vascularity secondary to radiation and subsequent instrumentation or catheterization. It is confirmed by cystoscopy and is best managed by immediate removal and replacement after 3 months.

7. **Urethral atrophy:**
   - Usually occurs after 6-12 months presenting as new onset incontinence. Diagnosis can be confirmed with cystoscopy and managed with downsizing the urethral cuff or placement of tandem cuff. Prevention with night time deactivation may prolong the life span of the device and help prevent the time taken to develop urethral atrophy.

**Recommendation in special circumstances:**

Patients with history of radiation: These patients are at higher risk of urethral erosion and may need extra-precaution during implant placement.

1. Careful dissection around urethra and avoid de-vascularization leaving plenty of peri-urethral tissue.
2. Avoid use of tight urethral cuff
3. Use of low pressure regulating balloon.
4. Keep the device deactivated for 6 weeks instead.

Patients with multiple previous erosions or small urethral diameter: These patients are at higher risk of further erosion and poor coaptation if measured smaller than 3.5 cm in diameter. These will require trans-corporal cuff placement or fascia urethral wrap.
Table 2

Troubleshooting

Cannot activate sphincter

* Due to insufficient fluid in pump
* Squeeze forcibly over the entire surface of pump
* Squeeze narrow side of silicone case 90° from the button to allow fluid to enter pump
* Rare operative intervention required

Inability to squeeze pump

* Due to obstruction of fluid flow by debris, airlock, blood, or crystals
* Due to kinking of tubing
* Prevention is imperative
* Operative intervention needed

Urinary retention

* Immediate postoperative
  Rule out activated system by cycling device
  If retention persists, check pelvic x-ray
  If cuff remains inflated despite deactivation, sphincter needs revision
  May be caused by small cuff or postoperative edema—urethrocystoscopy
* Late
  Inadvertent deactivation with cuff closed—recycle
  Inflammation or edema from infection or erosion—urethrocystoscopy
  Recurrent vesical neck contracture—urethrocystoscopy

Urinary incontinence

* Immediate post-activation
  Secondary to a large cuff, low cuff filling pressure, leak in system, detrusor instability, or malfunction of the sphincter
  Pelvic x-ray may suggest leak
  If leak is suspected, replace affected component
* Late
  Secondary to mechanical failure, erosion, urethral atrophy, or detrusor instability
  Urodynamics to rule out detrusor instability, retrograde urethral pressure profile to measure cuff pressure
  Cystoscopy to identify erosion and ischemia

Infection

* Usually in early postoperative period secondary to seeding during surgery
* Staphylococcus epidermidis is most common organism
* Delayed infection may be secondary to hematogenous spread from other sources such as genitourinary or dental infections
* Sphincter most often needs removal

Erosion

* Due to infection, decreased vascularity, high cuff pressure, small cuff, or catheterization through a closed sphincter
* Manifested by perineal pain, urethral discharge or bleeding, hematuria, irritative voiding symptoms, or incontinence
* Diagnosis made by urethrocystoscopy
* Treatment involves removing cuff and placing catheter
Wednesday, February 28, 2018  
11:00 a.m. - 12:00 p.m.  

Keynote Speaker: Non-Voiding Contractions Encode Essential Information on Urinary Bladder Fullness: Implications for Urinary Bladder Dysfunction  
Mark T. Nelson, PhD  
University of Vermont

Sensing bladder fullness is seemingly simple; yet the mechanisms involved in the sensation of fullness are unclear. We present a new view of how the urinary bladder senses fullness, and how alterations in this can lead to bladder over- and underactivity. The urinary bladder wall undergoes microcontractions, which can result in transient pressure fluctuations (TPFs) or “non-voiding contractions”. TPFs have an outsized effect on sensory nerve activity, with their peak impact occurring at threshold pressure in normal bladders. This relationship is altered in disease, and can lead to both over- or underactivity. There are many unknowns about how the translation of bladder fullness to the CNS will signal the proper time to void, including how pressure affects microcontractions, how microcontractions are coordinated to produce optimal TPFs, how TPFs affect sensory nerves, and how pressure is sensed by the bladder. These issues will be addressed by an international expert on urinary bladder excitability and contractility.


Wednesday, February 28, 2018
1:15 p.m. – 2:50 p.m.

Panel 3: The Use of Stem Cells in Lower Urinary Tract Research
Functional Tissue Reconstruction by an Acellular Regenerative Medicine Approach
Stephen F. Badylak, DVM, PhD, MD
McGowan Institute for Regenerative Medicine
University of Pittsburgh

Outline
- The Extracellular Matrix (ECM) represents the natural microenvironmental niche for all cells, including stem cells
- Definition and description of ECM
- Structural and functional properties of the ECM
- Concept of “dynamic reciprocity”
- Factors within the ECM, or following degradation of the ECM, affect stem cell behavior, including:
  - Mobilization
  - Proliferation
  - Differentiation
- Indirect effect of ECM on stem cells
  - Macrophage phenotype transition and macrophage secretome
- Preclinical evidence of ECM-induced repopulation of biologic scaffolds within endogenous stem cells
- Role for mechanical loading upon stem cell fate
- Clinical evidence of ECM-induced stem cell recruitment
- Role for Matrix Bound Nanovesicles (MBV) and next generation regenerative medicine approaches
Thursday, March 1, 2018
4:05 p.m. - 5:05 p.m.

Healthcare Reform: Where Are We Headed?
Scott A. MacDiarmid, MD
Alliance Urology Specialists, PA

We have a Healthcare Crisis and the Crisis is Now!

I believe that our great nation has a healthcare crisis and the crisis is now! Costs out of control. Quality deteriorating. Physicians fatigued and discouraged. The white cap days of nursing lost forever. What a mess we have made of such a precious jewel.

Paralleling our educational system, we as a great nation have to come to grips that our healthcare system is too expensive, its access to millions is limited, its quality is in jeopardy, and in many cases we are not getting what we pay for. And like teachers, many healthcare providers are burnt out, devalued, and no longer want to be one. Ladies and Gentlemen... we have a crisis and the crisis is now!

In 15 minutes or less, I will show you the money, expose the disease killing the American Healthcare system, speak to how America will die when the profession of Medicine dies and most importantly, provide survival tactics for you to ponder. And when all else fails, moving to Canada is still an option.

Quentin Clemens, MD will focus on federal physician payment reform activities. He will review how quality of care is measured and will discuss various types of quality performance measures, including those which are currently recommended for urologists by CMS.

Importantly, he will summarize the MACRA legislation, including the Merit-Based Incentive Payment System (MIPS) and Alternative Payment Models. He will argue that participation in a Qualified Clinical Data Registry (QCDR) is an essential component of fulfilling MIPS requirements. In addition, Quentin will review the AQUA registry (data extraction, accrual status, performance measures), which is the only urology-specific QCDR in existence at this time.

Dr. Rhee’s presentation will focus on a macro level view of US healthcare as a primer, navigating the audience through the waters of the history of US healthcare up to the passage of the Affordable Care Act (ACA) in 2010. The presentation will review what the ACA accomplished (good and bad) over the 7 years both on federal & state levels. He will review what is the tactic of the Tax Cuts & Job Act signed into law by President Trump on December 22, 2017. Finally, we will opine as a group as to what does the future hold in these murky waters as best guesses based on personal opinions.

HealthCare Matters … and it Matters More than Me.

Ladies and gentlemen, I believe that we need a dramatic change in direction and a rapid paradigm shift on how we view, use, and nurture our healthcare system. Simply put, the greatest country in the world desperately needs a healthcare movement armed by each and every citizen to ensure its health, hope, and financial stability.

Such a grassroots movement must be started and led by physicians. Our voices must be heard and our efforts impactful. We must join together to help save our healthcare system that is such an important fabric of our great society. We must save healthcare because Healthcare Matters. And we must save healthcare because it Matters More than Me.
Recurrent UTI
Melissa R. Kaufman, MD, PhD
Vanderbilt University

Strategies for evaluation and management of recurrent urinary tract infections (rUTI) are a dominant and often daunting aspect of urologic care and despite their prevalence, rUTI remains a knowledge gap for many practitioners. This case-based session will cover primary definition of rUTI, presentation of rUTI patients, explore potential etiologies for emergence of rUTI, and discuss appropriate strategies for primary and secondary evaluation including use of commonly employed and adjunct laboratory, imaging, anatomic and functional evaluation. This session will additionally detail various modalities of treatment focusing on aspects of general pelvic health and addressing non-pharmaceutical options. Participants will engage in an open forum discussion of various practice patterns and outline current evidence supporting each strategy.
Friday, March 2, 2018
5:00 p.m. - 6:00 p.m.

Collaborative Research
Michael J. Kennelly, MD
Women’s Center For Pelvic Health

1. Pursuing Research
   Speaker: Toby C. Chai, MD

2. NIH
   Speaker: Tamara G. Bavendam, MD, MS

3. Starting a Collaboration
   Speaker: Una J. Lee, MD

The current trend is toward collaborative research. There are many types of research collaboration, including transdisciplinary research initiatives, projects between junior and senior investigators, or between institutions. The objective of this breakout session will be to discuss the many pathways of pursuing collaborative clinical and scientific research. The speakers will provide diverse perspectives, with the goal of educating and inspiring the audience on the joys and challenges of successful hypothesis-based inquiry.

Translational research is based on the principal that successful development of new clinical treatments is rooted in a mechanistic understanding of the disease process. For this reason, physicians who desire to bring a positive change into our field should participate in collaborative research involving investigators with complementary areas of expertise. Physician leadership is a key aspect of preserving patient-focused research initiatives. Physician investigators are able to bring together the experience of colleagues, perspectives of staff, and connect institutions, creating an environment in which research projects have direct, positive impacts on patient care.

There are opportunities for physicians to collaborate at all levels of translational research but participation can be limited by education and funding availability. Graduates of MD/PhD medical scientist training programs are usually trained to perform bench research in search of new mechanisms/pathophysiology of diseases. Clinical investigators focus their research efforts in response to disease specific needs that arise in medical practice. For these physicians who are also clinical investigators, it can be difficult to address the challenges of incorporating clinical research endeavors into their medical practice. In response to this, clinical research principles are being taught in residency and fellowship programs.

In the United States, a significant source of biomedical research support is through federal agencies such as the National Institutes of Health, Department of Defense, Veterans Affairs, and Centers for Disease Control and Prevention. Funding is also available through philanthropic sources and the pharmaceutical industry. Key issues that arise include unpredictable governmental budgets, alignment of investigator and philanthropic goals in research, and management of conflicts of interest from industry funding.

Overall, there are many opportunities for physicians to participate in collaborative clinical and translational research, but barriers including lack of training, mentorship, funding, and support can make it difficult to establish and maintain a research career. This breakout session aims to describe these issues and offer guidance to those looking to pursue collaborative research in addition to practicing medicine.

References:
* Basic Science Poster Session I

Tuesday, February 27, 2018
5:25 p.m. – 7:40 p.m.
Judges: Matthew O. Fraser, PhD
H. Henry Lai, MD

*Not CME Accredited. Please note there will be 30 minutes of viewing time. Presentations will start promptly at 5:55 p.m.

Poster #BS1
CHARACTERIZATION OF BACTERIA IDENTIFIED ON EXPLANTED MESH SLINGS USING NEXT-GENERATION SEQUENCING TECHNIQUES
A. Lenore Ackerman MD, PhD, Victoria Scott MD, Guo Liu PhD, Wenyuan Shi PhD and Shlomo Raz MD
Los Angeles, CA
Presented By: A. Lenore Ackerman, MD, PhD

Poster #BS2
NEUROANATOMICAL EVALUATION OF PERI-VESICAL NERVE PLEXUS IN FEMALE WITH 3T-MR DIFFUSION TENSOR IMAGING
Bilal Farhan MD¹, Hon J. Yu, BSc PhD², Mohammad Helmy MD³ and Gamal Ghoniem MD FACS⁴
¹University of California, Irvine, CA; ²UC, Irvine; ³UC, Irvine; ⁴UC, Irvine
Presented By: Bilal Farhan, MD

Poster #BS3
ANALYSIS OF VERSICAN AND HYALURONAN DEPOSITION IN THE FIBROTIC AND INFLAMMATORY RESPONSE TO POLYPROPYLENE MESH IN SYMPTOMATIC WOMEN UNDERGOING PELVIC FLOOR MESH REMOVAL
Katherine Amin MD¹, Sarah Adelstein MD², Stephen P Evanko PhD³, Alvaro Lucioni MD⁴, Kathleen Kobashi MD⁵, Thomas Wight PhD⁶ and Una Lee MD⁷
¹Virginia Mason Medical Center, Department of Urology, Seattle, WA; ²Virginia Mason Medical Center, Benaroya Research Institute Wilske Translational Research, Seattle, WA
Presented By: Katherine Amin, MD

Poster #BS4
OVERACTIVE VOIDING BEHAVIOR IN SURGICALLY-INDUCED MENOPAUSAL MICE EXPOSED TO LIPOPOLYSACCHRIDE (LPS) IS MODULATED BY DISTINCT GENE NETWORK PATHWAYS
Marian Acevedo Alvarez MD¹, Judy Yeh MD², Lery Alvarez-Lugo MS³, Ming Lu MD⁴, Warren G. Hill MD⁵ and Toby Chai MD⁶
¹CT; ²New Haven, CT; ³Boston, MA
Presented By: Marian Acevedo-Alvarez, MD

Poster #BS5
REPEATABILITY OF MOTOR UNIT NUMBER ESTIMATION OF THE EXTERNAL ANAL SPHINCTER
Chuan Zhang MSE¹,²,³, Alvaro Munoz PhD⁴, Timothy Boone MD, PhD⁴ and Yingchun Zhang PhD¹,²,³
¹Guangdong Provincial Work Injury Rehabilitation Hospital, Guangzhou, China; ²Department of Biomedical Engineering, University of Houston, Houston, TX, USA; ³Regenerative Medicine Program, Houston Methodist Research Institute, and Department of Urology, Houston Methodist Hospital, Houston, TX, USA
Presented By: Yingchun Zhang, PhD

Poster #BS6
OPTIMIZING TENSILE STRENGTH USING DIFFERENT COLLAGEN-BASED NANOPARTICLES FOR ELECTROCHEMICAL ALIGNMENT GRAFT FABRICATION OF BIOTEXTILES DESIGNED FOR INCONTINENCE AND PELVIC RECONSTRUCTIVE SURGERY
Raymond Rackley MD¹, Nicole Edwards BME², Xing Guo Cheng PhD³, Brad Gill BME, MD³ and David Staskin MD⁴
¹Cleveland, OH; ²SouthWest Research Institute; ³Cleveland Clinic; ⁴Steward Health Tufts University of Medicine
Presented By: Raymond Robert Rackley, MD

Poster #BS7
DIFFERENTIAL PROTEIN EXPRESSION IN PATIENTS WITH UCPPS: A MAPP STUDY
Jennifer Anger MD MPH¹, A. Lenore Ackerman MD Ph D², Weston Spivia MS³, Irene van den Broek Ph D⁴, Daniel Crear MS³, Karyn Elber MD⁴, Michael Freeman Ph D⁴, Jayoung Kim Ph D⁴, Qin Fu Ph D⁴ and Jennifer Van Eyk Ph D⁴
¹Cedars-Sinai Medical Center; ²Cedars-Sinai Medical Center, Los Angeles, California; ³Virginia Institute of Marine Science, Gloucester Point, Virginia
Presented By: Jennifer T. Anger, MD, MPH, FPMRS
Poster #BS8  REGULATION OF CONJUGATIVE TRANSFER OF B-LACTAM RESISTANCE FROM UROPATHOGENIC STRAINS OF ESCHERICHIA COLI
Tatyana Sysoeva PhD and Lingchong You PhD
Duke University, Durham, NC
Presented By: Tatyana A. Sysoeva, PhD

Poster #BS9  THE UROPATHOGENIC ESCHERICHIA COLI PILUS USHER CONTROLS PILUS ASSEMBLY THROUGH A 2-STEP VERIFICATION PROCESS DURING ACTIVATION
Glenn Werneburg PhD, Hemil Chauhan BS, Nadine Henderson MS and David Thanassi PhD
Stony Brook University School of Medicine, Stony Brook, NY
Presented By: Glenn Thomas Werneburg, PhD

Poster #BS10  THE ROLE OF PDGFR+ CELLS IN CYCLOPHOSPHAMIDE-INDUCED DETRUSOR OVERACTIVITY
Haeyeong Lee PhD¹, Byoung Koh BS², Lauren Peri BS³, Kenton Sanders PhD⁴ and Sang Koh MD,PhD⁵
¹University of Nevada, Reno, School of Medicine, Department of Physiology and Cell Biology; ²University of Nevada, Reno, School of Medicine, Department of Physiology and Cell Biology, Reno, NV
Presented By: Haeyeong Lee, PhD

Poster #BS11  COMPARISON OF IRON-DEPENDENT REGULATION OF SURFACE MOTILITY IN UROPATHOGENIC AND NONPATHOGENIC ESCHERICHIA COLI
Parker McDill BS, MS¹, Larry Reitzer BS, PhD¹ and Philippe Zimmern MD²
¹UTD; ²UT Southwestern Medical Center
Presented By: Parker Matsuo McDill

Poster #BS12  A RELIABLE, SENSITIVE AND FAST ENZYMATIC METHOD TO MEASURE D-MANNOSURIA IN WOMEN.
Iti Mehta BS, MS¹, Larry Reitzer BS, PhD¹ and Philippe Zimmern MD²
¹UTD; ²UT Southwestern Medical Center
Presented By: Iti Mehta, MS

Poster #BS13  WITHDRAWN

Poster #BS14  MYOGENIC MECHANISMS OF DETRUSOR OVERACTIVITY IN SPINAL CORD INJURY
Haeyeong Lee PhD¹, Byoung Koh BS², Robert Corrigan BS³, Andrew Yanez ⁴, Tong Zhou PhD⁵, Kenton Sanders PhD⁴ and Sang Koh MD,PhD⁵
¹University of Nevada, Reno, School of Medicine, Department of Physiology and Cell Biology; ²University of Nevada, Reno, School of Medicine, Department of Physiology and Cell Biology, Reno, NV
Presented By: Haeyeong Lee, PhD

Poster #BS15  CHARACTERIZATION OF RELAXIN RECEPTOR EXPRESSION IN HUMAN BLADDER SMOOTH MUSCLE CELLS AND EVALUATION OF ITS EFFECT ON TISSUE REMODELING AND FIBROSIS
Edward Diaz MD, Mason Briggs BS, Yan Wen MD, Amy Dobberfuhl MD and Bertha Chen MD
Stanford University School of Medicine
Presented By: Edward C. Diaz, MD

Poster #BS16  NERVE STIMULATION INCREASES VOIDING EFFICIENCY IN A NOVEL MODEL OF DETRUSOR UNDERACTIVITY
Eric Gonzalez PhD and Warren Grill PhD
Department of Biomedical Engineering, Duke University, Durham, NC
Presented By: Eric Gonzalez, PhD

Poster #BS17  AMPLITUDE EFFECTS OF SACRAL NEUROMODULATION IN THE FULLY CONSCIOUS OVINE MODEL
Thaddeus Brink PhD, Tina Billstrom , Melissa Mattson and Lance Zirpel PhD
Medtronic Inc., Minneapolis, MN
Presented By: Thaddeus S. Brink, PhD
Table of Contents

Top 10 Basic Science Abstract Presentations
Wednesday, February 28, 2018
8:45 a.m. – 10:45 a.m.
Moderators: John P. Lavelle, MD
John Malysz, PhD

8:45 a.m. #1 EXPRESSION AND FUNCTION OF HETEROmeric KV7.4/KV7.5 CHANNELS IN HUMAN DETRUSOR SMOOTH MUSCLE
Aaron Provence BSc¹, John Malysz ², Damiano Angoli MSc³, Eric Rovner MD³ and Georgi Petkov PhD³
¹Department of Drug Discovery and Biomedical Sciences, South Carolina College of Pharmacy, University of South Carolina, Columbia, SC; ²Department of Pharmaceutical Sciences, College of Pharmacy, The University of Tennessee Health Science Center, Memphis, TN; ³Department of Urology, Medical University of South Carolina, Charleston, SC
Presented By: John Malysz, PhD

8:57 a.m. #2 OVEREXPRESSION OF ESTROGEN RECEPTOR ß IN UROTHELIUM PROTECTS AGAINST UROPATHOGENIC E. COLI URINARY TRACT INFECTION
Judy Yeh MD¹, Marian Acevedo MD¹, Lery Alvarez MS¹, Ming Lu MD¹, Warren Hill PhD² and Toby Chai MD¹
¹Yale, New Haven, CT; ²Beth Israel Deaconess, Boston, MA
Presented By: Toby C. Chai, MD

9:09 a.m. #3 TRANSGENIC FEMALE MICE WITH ORNITHINE DECARBOXYLASE (ODC) OVEREXPRESSION RESTRICTED TO UROTHELIUM EXHIBIT OAB VOIDING BEHAVIOR AND INCREASED URINARY CYTOKINES: A TRANSLATIONAL MURINE MODEL OF OAB
Judy Yeh MD¹, Lery Alvarez-Lugo MS¹, Ming Lu MD¹, Warren Hill PhD² and Toby Chai MD¹
¹Yale, New Haven, CT; ²Beth Israel Deaconess, Boston, MA
Presented By: Toby C. Chai, MD

9:21 a.m. #4 FLOW STUDIES IN THE ISOLATED PERFUSED WORKING PIG BLADDER DEMONSTRATE PRESERVATION OF TISSUE OXYGENATION DESPITE DECREASING VASCULAR FLOW: POTENTIAL MECHANISMS OF UNDERACTIVE BLADDER
Uzoma Anele MD¹, Andrew Tracey MD¹, Andrew Colhoun MD¹, John Speich PhD³, Paul Ratz PhD³ and Adam Klausner MD¹
¹Virginia Commonwealth University Medical Center, Richmond, VA; ²Virginia Commonwealth University, Richmond, VA; ³Virginia Commonwealth University School of Medicine, Richmond, VA
Presented By: Uzoma Anele, MD

9:33 a.m. #5 UNDERSTANDING THE PATHOGENS RESPONSIBLE FOR RECURRENT URINARY TRACT INFECTIONS IN POSTMENOPAUSAL WOMEN
Nicole De Nisco BS, PhD¹, Luming Chen BS², Marcela de Souza Santos PhD³, Kelli Palmer PhD³, Kim Orth BS, MS, PhD³ and Philippe Zimmern MD²
¹UT Southwestern Medical Center and Howard Hughes Medical Institute; ²UT Southwestern Medical Center; ³UTD
Presented By: Nicole De Nisco, BS, PhD

9:45 a.m. #6 STRESS-INDUCED BLADDER HYPERSENSITIVITY, HINDPAW ALLODYNIA, AND DEPRESSION-LIKE BEHAVIOR IN AN ANXIETY-PRONE STRAIN OF MICE
Pau Yen Wu ¹, Xiaofang Yang MD¹, Douglas Wright PhD¹ and Julie Christianson PhD²
¹University of Kansas Medical Center, Kansas City, KS; ²University of Kansas Medical Center
Presented By: Julie Christianson, PhD

9:57 a.m. #7 SUSTAINED INHIBITION OF BLADDER FUNCTION IS EVOKED BY SAPHENOUS NERVE STIMULATION: AN EVALUATION OF A CONTINUOUS URODYNAMIC MODEL IN ANESTHETIZED RATS
Zainab Moazzam BS¹ and Paul Yoo PhD²
¹Institute of Biomaterials and Biomedical Engineering, University of Toronto, Toronto, Canada; ²University of Toronto
Presented By: Paul Yoo, PhD
10:09 a.m. #8 EXPRESSION PROFILING OF EXPERIMENTAL NEUROGENIC BLADDER REVEALS DECREASED BETA 3-AR EXPRESSION THAT CAN BE REVERSED BY INOSINE TREATMENT.
Bryan Sack MD¹, Mary Piper PhD², Justin Cotellessa BSc³, Claire Doyle PhD⁴, Mehrnaz Gharae-Kermani PhD, DVM⁴, Amy Avery BSc⁵, Fabliha Mahmood BSc⁶, Vivian Cristofaro PhD⁷, Maryrose Sullivan PhD⁸, Jill Macoska PhD⁹ and Rosalyn Adam PhD⁹
¹Boston Children's Hospital & Harvard Medical School; ²Harvard T.H. Chan School of Public Health, Boston, MA; ³University of Massachusetts Boston, Boston, MA; ⁴Boston Children's Hospital & Harvard Medical School, Boston, MA; ⁵VA Boston Healthcare System, West Roxbury, MA & Harvard Medical School, Boston, MA
Presented By: Bryan Sack, MD

10:21 a.m. #9 QUANTIFICATION OF BLADDER WALL MICROMOTION DURING URODYNAMICS IN A NOVEL ANESTHETIZED PIG MODEL WITH LOW AMPLITUDE RHYTHMIC CONTRACTIONS USING M-MODE ULTRASOUND
Anna Nagle PhD¹, Zachary Cullingsworth BS², Uzoma Anele MD³, Charles Blocher MS³, Adam Klausner MD⁴ and John Speich PhD²
¹Department of Mechanical & Nuclear Engineering, Virginia Commonwealth University; ²Department of Mechanical & Nuclear Engineering, Virginia Commonwealth University, Richmond VA; ³Department of Surgery, Virginia Commonwealth University School of Medicine, Richmond, VA; ⁴Department of Surgery, Virginia Commonwealth University School of Medicine, Richmond, VA and Department of Surgery Hunter Holmes McGuire Veterans Affairs Medical Center, Richmond, VA
Presented By: Anna S. Nagle, PhD

10:33 a.m. #10 URINARY LEVELS OF MONOCYTE CHEMOTACTANT PROTEIN-1 (MCP-1) PREDICT THE SEVERITY OF SYMPTOM AND RESPONSE TO TREATMENT IN PATIENTS WITH OVERACTIVE BLADDER (OAB)
Gamal Ghoniem MD FACS¹, Bilal Farhan MD², Ahmed Ahmed MD³ and Frank Zaldivar MD PhD³
¹UC, Irvine, CA; ²University of California, Irvine, CA; ³UC, Irvine, CA
Presented By: Bilal Farhan, MD
Basic Science Poster Session II
Wednesday, February 28, 2018
5:10 p.m. – 7:00 p.m.
Judges: Lori A. Birder, PhD
Christopher J. Chermansky, MD
*Please note there will be 20 minutes of viewing time. Presentations will start promptly at 5:30.

Poster #BS18
**CORRELATION BETWEEN DETRUSOR AND MOTOR FUNCTION IN AN ANIMAL MODEL OF PARKINSON’S DISEASE**
Vivian Cristofaro PhD¹,², Andrew Orlando¹,³, Sean D Carey¹,³, Yifei Xu¹,³, Josephine A Carew¹,³ and Maryrose P Sullivan¹,³
¹VA Boston Healthcare System, Harvard Medical School; ²Boston MA.; ³Boston MA
Presented By: Vivian Cristofaro, PhD

Poster #BS19
**SEARCHING FOR THE SOURCE: MACROSCOPIC MEASUREMENT OF CALCIUM SIGNALS AND MICROMOTIONS IN THE MOUSE URINARY BLADDER**
Nathan Tykocki PhD, Grant Hennig PhD and Mark Nelson PhD
University of Vermont, Burlington, VT
Presented By: Nathan R. Tykocki, PhD

Poster #BS20
**CHANGES IN DETRUSOR FUNCTION AND PROTEIN O-GLCNACYLATION IN AN ANIMAL MODEL OF TYPE 2 DIABETES**
Yifei Xu¹,³, Josephine A Carew PhD¹,³, Raj K Goyal MD¹,³, Maryrose P Sullivan PhD¹,³ and Vivian Cristofaro PhD¹,³
¹VA Boston Healthcare System, Harvard Medical School; ³Boston MA.
Presented By: Vivian Cristofaro, PhD

Poster #BS21
**APPLICATION OF NEAR INFRARED SPECTROSCOPY TO CHARACTERIZE HEMODYNAMICS OF PELVIC FLOOR MUSCULATURE IN WOMEN WITH LOWER URINARY TRACT SYMPTOMS AND VOIDING DYSFUNCTION**
Emily Deegan BA, BScN, RN¹, Lynn Stothers D., FRCSC², Darren Lazare BEng, BA, MD, FRCS³ and Andrew Macnab MD (London), FRCPc, FRCPCH, FCAHS⁴
¹Department of Experimental Medicine, University of British Columbia International Collaboration on Repair Discoveries; ²Department of Urological Sciences & Peter Wall Institute for Advanced Studies, University of British Columbia, International Collaboration on Repair Discovery (ICORD), Vancouver, British Columbia; ³Department of Obstetrics and Gynaecology & Department of Physical Therapy, University of British Columbia, BC Women’s Hospital, Vancouver, British Columbia; ⁴Stellenbosch Institute for Advanced Study, Wallenberg Research Centre, Stellenbosch, South Africa, Department of Urologic Sciences, University of British Columbia & International Collaboration on Repair Discoveries (ICORD), Vancouver, British Columbia
(Presented by: Emily Deegan)
Presented By: Emily Grace Deegan, BA, BScN, RN

Poster #BS22
**THE EFFECTS OF ACUTE ISCHEMIA ON INTRAVESICAL PRESSURE IN AN ISOLATED PERFUSED WORKING BLADDER MODEL**
Andrew Tracey MD¹, Uzoma Anele MD¹, Andrew Colhoun MD², John Speich PhD³, Adam Klausner MD⁴ and Paul Ratz PhD⁴
¹Virginia Commonwealth University Medical Center, Richmond, VA; ²Virginia Urology, Richmond, VA; ³Virginia Commonwealth University Department of Engineering, Richmond, VA; ⁴Virginia Commonwealth University School of Medicine, Richmond, VA
Presented By: Uzoma Anele, MD

Poster #BS23
**THE NATURAL HISTORY OF RADIATION CYSTITIS IN A RAT MODEL OF ACUTE AND CHRONIC LOWER URINARY TRACT DYSFUNCTION**
Amy D. Dobberfuhl MD¹, Mason A. Briggs BS², Yan Wen MD², Shoucheng Ning PhD⁴, Edward E. Graves PhD⁴, Edward C. Diaz MD¹ and Bertha Chen MD²
¹Stanford University, Dept. of Urology; ²Stanford University, Dept. of Obstetrics and Gynecology; ³Stanford University, Dept. of Radiation Oncology
Presented By: Amy Diane Dobberfuhl, MD
Poster #BS24

CHRONIC MEALTIME SHIFT DISTURBS METABOLIC AND URINARY FUNCTIONS IN MICE: EFFECTS OF DAILY SUPPLEMENTATION OF ANTIOXIDANTS

Kyung-Jin Chung MD, PhD1, Su Jin Kim2, Sung Tae Cho MD, PhD3, Hyeong Gon Kim MD, PhD4, Kyu-Sung Lee MD, PhD5, Myung-So Soo Choo MD, PhD6, Khae Hawn Kim MD, PhD7, Young-Suk Lee MD, PhD7 and Jae Yup Hong MD, PhD8

1Department of Urology, Gachon University Gil Hospital, Gachon University of Medicine and Science, Incheon, Korea; 2Department of Urology, Seoul St. Mary’s Hospital, The Catholic University of Korea College of Medicine; 3Department of Urology, Hallym University Kangnam Sacred Heart Hospital, Hallym University College of Medicine, Seoul, Korea; 4Department of Urology, Konkuk University School of Medicine, Seoul, Korea; 5Department of Urology, Samsung Medical Center, Sungkyunkwan University School of Medicine, Seoul, Korea; 6Department of Urology, Asan Medical Center, University of Ulsan College of Medicine, Seoul, Korea; 7Department of Urology, Gachon University Gil Medical Center, Gachon University School of Medicine, Incheon, Korea; 8Department of Urology, Cha University School of Medicine

Presented By: Su Jin Kim

Poster #BS25

COMPARISON OF DETRUSOR ULTRASTRUCTURE IN WOMEN AND MEN WITH BLADDER OUTLET OBSTRUCTION – A POTENTIAL ROLE FOR DIAGNOSTIC BLADDER BIOPSY.

Audrey Wang MBBS, FRACS1, Susan Brammah MApplSc2, Amanda Chung MBBS, MS, FRACS3, Vincent Tse MBBS, MS, FRACS3 and Lewis Chan MBBS, FRACS, DDU4

1Department of Urology, Westmead Hospital, Westmead NSW, Australia; 2Electron Microscopy Unit, Department of Anatomical Pathology, Concord Repatriation General Hospital, Concord NSW, Australia; 3The University of Sydney, Sydney Medical School, Department of Urology, Concord Repatriation General Hospital, Concord NSW, Australia; 4The University of Sydney, Sydney Medical School, Department of Urology, Concord Repatriation General Hospital, Concord NSW, Australia

Presented By: Amanda S.J. Chung, BSc, MBBS, MS, FRACS

Poster #BS26

PROPHYLACTIC TREATMENT MARKEDLY IMPROVES BLADDER CAPACITY FOLLOWING PELVIC RADIATION

Doreen Chang MA¹, Bryce A. Allio MD², Jillene M. Brooks MS³, Danielle J. Degoski BS³, A. Adam Kahokehr MD PhD³, Andrew C. Peterson MD² and Matthew O. Fraser PhD³

¹Duke University School of Medicine, Duke University Medical Center, Durham, NC; ²Division of Urology, Department of Surgery, Duke University Medical Center, Durham, NC; ³Institute for Medical Research, Durham, NC

Presented By: Matthew O. Fraser, PhD

Poster #BS27

INDIVIDUALIZED ADD-ON TREATMENT BASED ON THE DIFFERENCE OF RECEPTOR OF ALPHA BLOCKER IN ANIMAL MODELS OF OVERACTIVE BLADDER AND BENIGN PROSTATE HYPERPLASIA

Sung Tae Cho MD, PhD1, Don Kyoung Choi MD1, Ohseong Kwon MD2, Khae Hawn Kim MD, PhD3 and Ji-Yeon Han MD2

1Hallym University Kangnam Sacred Heart Hospital, Seoul, Korea; 2Gachon University Gil Hospital; 3Department of Urology, Pusan National University Yangsan Hospital, Pusan, Korea

Presented By: Sung Tae Cho, MD

Poster #BS28

COMPARISON OF ANTERIOR VAGINAL WALL INDENTATION PARAMETERS IN AGE-MATCHED CONTROL AND PROLAPSE PATIENTS USING AN OPERATOR INDEPENDENT ARTIFICIAL FINGER

Connie Wang BA, Panos Shiakolas PhD¹, Michael Abraham BS¹, Christopher Abrego BS¹ and Philippe Zimmern MD²

¹UTA; ²UT Southwestern Medical Center

Presented By: Connie Nan Wang
Poster #BS29  
**BETA-3 ADRENOCEPTOR EXPRESSION IN THE UTEROSACRAL LIGAMENT IN THE POSTMENOPAUSAL WOMEN WITH PELVIC ORGAN PROLAPSE**  
Woojin Chong MD¹, John Andrew Fantl MD¹, Michael Donovan MD, PhD² and Charles Ascher-Walsh MD¹  
¹Division of Female Pelvic Medicine & Reconstructive Surgery. Department of Obstetrics, Gynecology and Reproductive Sciences. Mount Sinai Medical Center/Icahn School of Medicine, NY, NY; ²Department of Anatomic Pathology. Mount Sinai Medical Center/Icahn School of Medicine, NY, NY  
Presented By: Woojin Chong, MD

Poster #BS30  
**FEMALE PELVIC FLOOR MECHANICS: ANALYSIS OF PRESSURE DATA AND IMAGING**  
Tova Ablove MD, Scott Doyle PhD, Allexandra Marasco BS and Frank Mendal PhD  
Buffalo, NY  
Presented By: Tova Ablove, MD

Poster #BS31  
**FRESH HUMAN CADAVER VAGINOPLASTY SURGICAL PROSECTIONS TO GUIDE SURGICAL TECHNIQUE, POST-OPERATIVE CARE, AND THE DESIGN OF A NOVEL NEOVAGINAL DILATOR AND DOUCHING DEVICE**  
Maurice Garcia MD, MAS  
Cedars Sinai Medical Center  
Presented By: Maurice Garcia, MD, MAS

Poster #BS32  
**NANOPARTICLE ENHANCED ADHESION OF MUSSEL INSPIRED HYDROGELS FOR TISSUE INTERFACING**  
Nikhil Pandey MS¹, Andres Urias Undergraduate², Jun Liao PhD³, Philippe Zimmern MD⁴, Kytai Nguyen PhD³ and Yi Hong PhD³  
¹The University of Texas at Arlington; ²University of Texas at Arlington; ³UT Southwestern Medical Center  
Presented By: Nikhil Pandey, MS

Poster #BS33  
**ACCURACY OF THREE NON-INVASIVE METHODS FOR BLADDER VOID VOLUME ANALYSIS IN HEALTHY VOLUNTEERS**  
Naomi Vinod ¹, Anna S. Nagle PhD², Hameeda A. Naimi BS³, Derek Sheen BS³, Hiren Kolli BS³, Uzoma A. Anele MD³, Adam P. Klausner MD⁴ and John E. Speich PhD⁴  
¹Department of Surgery/Division of Urology, Richmond, VA; ²Department of Mechanical & Nuclear Engineering, Virginia Commonwealth University School of Engineering, Richmond, VA; ³Department of Surgery/Division of Urology, Virginia Commonwealth University School of Medicine, Richmond, VA; ⁴Department of Surgery Hunter Holmes McGuire Veterans Affairs Medical Center, Richmond, VA  
Presented By: Naomi Vinod, BS
IC/Pelvic Pain/Geriatrics/BPH Podium Session
Thursday, March 1, 2018
1:00 p.m. – 2:20 p.m.

Moderators: Melissa R. Kaufman, MD, PhD
Christopher K. Payne, MD

1:00 p.m.  
1:00 p.m.  #1  5 YEAR RESULTS OF THE PROSTATIC URETHRAL LIFT (PUL) PIVOTAL STUDY
Michael Trotter MD¹, Claus Roehrborn MD² and Daniel Rukstalis MD³
¹Midtown Urology Associates; ²UT Southwestern Medical Center, Dallas, TX; ³Wake Forest Baptist Health
Urology, Winston-Salem, NC
Presented By: Michael D. Trotter, MD

1:10 p.m.  #2  COMPARATIVE EFFECTIVENESS OF BENIGN PROSTATE ENLARGEMENT
PROCEDURES AT ENABLING UROLOGIC MEDICATION DISCONTINUATION
Bradley Gill MD, MS, Navin Sabharwal BA, Elodi Deilubanza MD, James Ulchaker MD, Khaled Fareed
MD, MBA and Daniel Shoskes MD
Cleveland Clinic
Presented By: Bradley C. Gill, MD, MS

1:20 p.m.  #3  EFFECT OF AGE ON OUTCOMES OF TRANSVAGINAL NATIVE TISSUE REPAIRS FOR
APICAL VAGINAL PROLAPSE
Lindsay Kissane MD¹, Isuzu Meyer MD¹, Kimberly Martin PhD², Jubilee Tan MD¹, Kathryn Miller MD² and
Holly Richter MD¹
¹University of Alabama at Birmingham, Division of Urogynecology and Pelvic Reconstructive Surgery,
Birmingham, AL; ²University of Alabama at Birmingham, Department of Epidemiology, Birmingham, AL;
³University of Alabama at Birmingham, Department of Obstetrics and Gynecology, Birmingham, AL
Presented By: Lindsay Martin Kissane, MD

1:30 p.m.  #4  CLINICAL EXPERIENCE WITH POSTERIOR TIBIAL NERVE STIMULATION IN THE
ELDERLY
Cristina Palmer DO, Nobel Nguyen and Gamal Ghoniem MD, FACS
University of California Irvine, Orange, California
Presented By: Cristina J. Palmer, DO

1:40 p.m.  #5  IMMUNOFLUORESCENCE LOCALIZATION OF BACTERIAL BIOFILMS ON EXPLANTED
TRANSVAGINAL MESH SLINGS REMOVED FOR CHRONIC PAIN
Victoria C.S. Scott MD, A. Lenore Ackerman MD, PhD, Guo Liu PhD, Wenyuan Shi PhD and Shlomo Raz
MD
Los Angeles, CA
Presented By: Victoria C. Scott, MD

1:50 p.m.  #6  CLINICAL STUDY UPDATE ON A NOVEL RIBOSOMAL RNA-BASED RAPID
DIAGNOSTIC METHOD TO DETECT, IDENTIFY AND ASSESS ANTIBIOTIC
SUSCEPTIBILITY OF UROPATHOGENS
Lauren N. Wood MD¹, Melissa A. Markowitz BA², Seth A. Cohen MD², Andrew R. Medendorp MD², Colin
Halford³, Gabriel Monti³, Bernard M. Churchill MD², David A. Haake MD² and Ja-Hong Kim MD²
¹UCLA; ²UCLA, Los Angeles, CA; ³City of Hope, Los Angeles, CA
Presented By: Lauren N. Wood, MD

2:00 p.m.  #7  PROSPECTIVE SINGLE CENTER INVESTIGATIONAL DEVICE EXEMPTION STUDY OF
PROSTATE ARTERY EMBOLIZATION FOR LOWER URINARY TRACT SYMPTOMS
Riad Salem MD MBA¹, Samdeep Mouli MD², Ahsun Riaz MD², Ahmed Gabr MD², Rehan Ali MD², Frank
Miller MD², Nabeel Hamouli MD MBA², Robert Lewandowski MD² and John Hairston MD²
¹Northwestern Memorial Hospital; ²Northwestern Chicago, IL
Presented By: John Hairston MD
2:10 p.m.  #8 NON-PATHOGENIC AND UROPATHOGENIC ESCHERICHIA COLI HAVE DIFFERENT NUTRIENT REQUIREMENTS FOR SWARMING MOTILITY

Sushmita Sudarshan BS, MS¹, Larry Reitzer BS, PhD¹ and Philippe Zimmern MD²
¹UTD; ²UT Southwestern Medical Center
Presented By: Sushmita Sudarshan, BS, MS
LUTS/Voiding Dysfunction/Neurogenic Bladder Moderated Poster Session
Thursday, March 1, 2018
1:00 p.m. – 2:20 p.m.

Moderators: Sara M. Lenherr, MD, MS
Deborah J. Lightner, MD

Poster #M1
HIGH ATTENTION RATE AND LOW PROGRESSION TO ADVANCED THERAPY FOR PATIENTS WITH OVERACTIVE BLADDER: A HOSPITAL SYSTEM WIDE STUDY
Siobhan Hartigan MD, Katherine Fischer MD, Alan Wein MD, PhD, FACS and William Jaffe MD
Division of Urology, Department of Surgery, University of Pennsylvania Health System, Philadelphia, PA
(Presented by: Siobhan Hartigan)
Presented By: Siobhan M. Hartigan, MD

Poster #M2
A RANDOMIZED, CONTROLLED TRIAL OF ACTIVE VS. PASSIVE VOIDING TRIALS
James Mills MD, MSCR¹,², Nathan Shaw MD¹,², Helen Hougou MD³,⁴, Hannah Agard MD³,⁴, Robert Case MD⁵,⁶, Timothy McMurry PhD⁷,⁸, Noah Schenkman MD⁹ and Tracey Krupski MD, MPH⁹,²
¹University of Virginia Department of Urology; ²Charlottesville, VA; ³MedStar Georgetown University Hospital Department of Urology; ⁴Washington, DC; ⁵Oregon Health and Sciences University Department of Urology; ⁶Portland, OR; ⁷Cleveland Clinic Akron General Department of Urology; ⁸Akron, OH; ⁹University of Florida Department of Medicine; ¹⁰Gainesville, FL; ¹¹University of Virginia Department of Public Health Sciences
Presented By: James T. Mills, MD, MS

Poster #M3
ASSOCIATION BETWEEN OVERACTIVE BLADDER SEVERITY AND BOLD FMRI BRAIN ACTIVITY
Steven Weissbart MD¹, Lily Arya MD², Rupal Bhavsar MD², Alan Wein MD, PhD² and Ariana Smith MD²
¹Stony Brook University, Stony Brook, NY; ²University of Pennsylvania, Philadelphia, PA
(Presented by: Steven Weissbart)
Presented By: Steven Jonathan Weissbart, MD

Poster #M4
EARLY AND CONSISTENT IMPROVEMENTS IN QUALITY OF LIFE AND URINARY SYMPTOMS WITH ONABOTULINUMTOXINA IN OVERACTIVE BLADDER PATIENTS WITH URINARY INCONTINENCE IN A RANDOMIZED, PLACEBO-CONTROLLED TRIAL
Kurt McCammon ¹, Angelo Gousse ², Jennifer Gruenenfelder ³, Douglass Hale ⁴, Amelia Orejudos ⁵, Tamer Aboushwareb ⁶ and Alfred Kohan ⁷
¹Eastern Virginia Medical School, Norfolk, VA, USA; ²Memorial Hospital Miramar, Miramar, FL, USA; ³Orange County Urology Associates, Laguna Hills, CA, USA; ⁴Urogynecology Associates, PC, Indianapolis, IN, USA; ⁵Allergan plc, Irvine, CA, USA; ⁶Advanced Urology Centers of New York, Bethpage, NY, USA
Presented By: Kurt Anthony McCammon, MD

Poster #M5
RELATIONSHIP BETWEEN FLUID INTAKE VOLUME AND URINARY SYMPTOMS IN PATIENTS WITH MULTIPLE SCLEROSIS
Daniel Grajower BA, Justina Tam MD, Wai Lee MD, Patricia Melville NP, Jason Kim MD and Steven Weissbart MD
Stony Brook University School of Medicine, Stony Brook, NY
Presented By: Justina Tam, MD

Poster #M6
MID-TERM RISK OF RENAL DETERIORATION AND ASSOCIATED RISK FACTORS IN PATIENTS WITH NEUROGENIC BLADDER DUE TO MULTIPLE SCLEROSIS: AN ANALYSIS WITH MEDIAN FOLLOW-UP OF 81 MONTHS
Arthi Satyanarayan MD, Nabeel Shakir MD, Jessica Eastman BS and Gary Lemack MD
Department of Urology, University of Texas Southwestern Medical Center, Dallas, Texas
Presented By: Arthi Satyanarayan, MD

Poster #M7
OUTCOMES OF ONABOTULINUMTOXINA USE IN ADULTS WITH CONGENITAL SPINAL DYSRAPHYSIM IN TERTIARY TRANSITIONAL UROLOGY CLINIC
Rose Khavari MD, Aaron Kavi MD, Rashmi Pande MS and Timothy Boone MD, PhD
Houston, TX
Presented By: Rose Khavari, MD
Poster #M8  RISK OF RENAL DETERIORATION IS LOW AMONG SPINAL CORD INJURED PATIENTS FOLLOWED AT A TERTIARY CENTER: RESULTS OF DEMOGRAPHIC AND URODYNAMICS RISK ANALYSIS AT MID-TERM FOLLOW-UP.

Nabeel Shakir MD, Jessica Eastman BS, Arthi Satyanarayan MD and Gary Lemack MD
Department of Urology, University of Texas Southwestern Medical Center, Dallas, TX
Presented By: Nabeel A. Shakir, MD
*LUTS/Voiding Dysfunction/Neurogenic Bladder Non-Moderated Poster Session

*Not CME Accredited

Thursday, March 1, 2018
1:00 p.m. – 2:20 p.m.

**Poster #NM1**

DOES INCORPORATION OF AN OVERACTIVE BLADDER CARE PATHWAY IMPROVE FOLLOWUP AND PROGRESSION TO THIRD LINE THERAPIES?

Chris Du BA¹, William Berg MD², Yu Wang BA¹, Kailash Kapadia BS¹, Zhenyue Huang BS¹, Anh Nguyen BS¹, Alice Cheung BS¹, Steven Weissbart MD³ and Jason Kim MD³

¹Stony Brook University School of Medicine; ²Stony Brook University Medical Center, Stony Brook, NY; ³Stony Brook Medicine Department of Urology

Presented By: William T. Berg, MD

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**Poster #NM2**

PERI-OPERATIVE RISK FACTORS FOR POST-OP URINARY RETENTION AFTER ELECTIVE SPINE SURGERY

Fahad Sheckley MD Candidate¹, Spencer Hiller MD², Gail Briolat MSN , RN³, Jeffrey Fischgrund MD⁴ and Melissa Fischer MD⁵

¹Beaumont Health; ²Beaumont Health, Department of Urology, Royal Oak, MI; ³Michigan Institute of Urology, Royal Oak, MI; ⁴Beaumont Health, Department of Orthopedic Surgery, Royal Oak, MI; ⁵Beaumont Health, Department of Urology & Michigan Institute of Urology, Royal Oak, MI

Presented By: Fahad Sheckley, MD

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**Poster #NM3**

DEFINING BLADDER HEALTH IN WOMEN AND GIRLS: IMPLICATIONS FOR RESEARCH, CLINICAL PRACTICE AND PUBLIC HEALTH PROMOTION

Ariana Smith MD¹, Tamara Bavendam MD, MS², Amanda Berry CRNP, MSN, PhD³, Sonya Brady PhD⁴, Cynthia Fok MD, MPH⁵, Sheila Gahagan MD⁶, Patricia Goode MSN, MD⁷, Cecilia Hardacker MSN, RN, CNL⁸, Jeni Hebert-Beirne PhD, MPH⁹, Cora Lewis MD, MSPH³, Jessica Lewis MFT¹⁰, Lisa Low PhD, CNM¹¹, Jerry Lowder MD, MSc¹², Mary Palmer PhD¹³ and Emily Lukacz MD¹⁴

¹University of Pennsylvania, Philadelphia, PA; ²National Institute of Health/National Institute of Diabetes, Digestive, and Kidney Disorders, Bethesda, MD; ³The Children’s Hospital of Philadelphia, Philadelphia, PA; ⁴University of Minnesota, Minneapolis, MN; ⁵University of California San Diego, San Diego, CA; ⁶University of Alabama at Birmingham, Birmingham, AL; ⁷Howard Brown Health, Chicago, IL; ⁸University of Illinois, Chicago, IL; ⁹Yale School of Public Health, New Haven, CT; ¹⁰University of Michigan School of Nursing, Ann Arbor, MI; ¹¹Washington University in St. Louis School of Medicine, St. Louis, MO; ¹²University of North Carolina at Chapel Hill, Chapel Hill, NC

Presented By: Ariana L. Smith, MD

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**Poster #NM4**

DO SOCIAL INTERACTIONS AND MENTAL WELL-BEING AFFECT OVERACTIVE BLADDER SYMPTOMS?

Hillary Wagner MD, Julie Cheng MD, MAE, K’dee Eisen MA, Kristin Chung MS, G. Austin Krishingner BA and Andrea Staack MD, PhD

Loma Linda, CA

Presented By: Hillary Wagner, MD

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**Poster #NM5**

PREVALENCE AND IMPACT OF GLOBAL POLYURIA: RESULTS FROM THE SYMPTOMS OF LOWER URINARY TRACT DYSFUNCTION RESEARCH NETWORK (LURN) STUDY

J. Quentin Clemens MD¹, Jonathan B. Wiseman MS², Abigail R. Smith PhD³, Cindy L. Amundsen MD⁴, Claire C. Yang MD⁵, Megan S. Bradley MD⁶, Ziya Kirkali MD³ and Anne P. Cameron MD, and the LURN Study Group⁷

¹University of Michigan, Ann Arbor, MI; ²Arbor Research Collaborative for Health, Ann Arbor, MI; ³Duke University Medical Center, Durham, NC; ⁴University of Washington, Seattle, WA; ⁵National Institute of Diabetes and Digestive and Kidney Diseases, Bethesda, MD

Presented By: J. Quentin Clemens, MD
Poster #NM6  HUMAN PAPILLOMA VIRUS INFECTION IS ASSOCIATED WITH INCREASED IRRITATIVE LOWER URINARY TRACT SYMPTOMS IN WOMEN
Michelle Kim MD PhD¹ and Evgeniy Kreydin MD²
¹Boston, MA; ²Los Angeles, CA
Presented By: Michelle Kim, MD, PhD

Poster #NM7  WITHDRAWN

Poster #NM8  OUTCOMES OF PELVIC FLOOR PHYSICAL THERAPY IN THE TREATMENT OF LEVATOR SPASM AND VOIDING DYSFUNCTION
Diana Kakos BS, Vicki Irish CNP¹, Mireya Diaz-Insua PhD³ and Humphrey Atiemol MD¹
¹Detroit, MI; ²Detroit, MI
Presented By: Diana Kakos, MD

Poster #NM9  THE RISK OF COGNITIVE IMPAIRMENT IN PATIENTS STARTING ANTICHOLINERGIC MEDICATIONS FOR OVERACTIVE BLADDER: A PROSPECTIVE TRIAL
Shilpa Iyer MD, MPH¹, Carolyn Botros DO², Svjetlana Lozo MD³, Joshua Eng PhD³, Peter Sand MD³, Janet Tomezsko MD³, Sylvia Botros MD, MSCI⁴, Adam Gafni-Kane MD, MSCI⁴, Karen Sasso APN⁵ and Roger Goldsberg MD, MPH⁶
¹The University of Chicago; ²North Shore University Health System
Presented By: Svjetlana Lozo MD

Poster #NM10  ARE COMPLETE THREE-DAY VOIDING DIARIES FEASIBLE? RESULTS FROM THE SYMPTOMS OF LOWER URINARY TRACT DYSFUNCTION RESEARCH NETWORK (LURN) COHORT
Anne P. Cameron MD¹, Jonathan B. Wiseman MS², Cindy L. Amundsen MD³, H. Henry Lai MD⁴, Megan Bradley MD⁴, Catherine S. Bradley MD, MSCE⁴, Ziya Kirkali MD⁴, John O.L. DeLancey MD⁵, Victor P. Andreev PhD DSc⁶ and J. Quentin Clemens MD, FACS, MSCI, and the LURN Study Group¹
¹University of Michigan, Ann Arbor, MI; ²Arbor Research Collaborative for Health, Ann Arbor, MI; ³Duke University School of Medicine, St. Louis, MI; ⁴University of Iowa, Iowa City, IA; ⁵National Institute of Diabetes and Digestive and Kidney Diseases, Bethesda, MD
Presented By: Anne Pelletier Cameron, MD, FPMRS

Poster #NM11  PREVALENCE AND CORRELATES OF NOCTURIA IN THE LURN COHORT
J. Quentin Clemens MD¹, Jonathan B. Wiseman MS², Ziya Kirkali MD,², Megan S. Bradley MD⁴, Cindy L. Amundsen MD⁴, Abigail R. Smith PhD⁵ and Anne P. Cameron MD, and the LURN Study Group¹
¹University of Michigan, Ann Arbor, MI; ²Arbor Research Collaborative for Health, Ann Arbor, MI; ³National Institute of Diabetes and Digestive and Kidney Diseases, Bethesda, MD; ⁴Duke University Medical Center, Durham, NC
Presented By: J. Quentin Clemens, MD

Poster #NM12  SYSTEMIC REVIEW OF THE BURDEN OF ILLNESS IN OVERACTIVE BLADDER
Ramesh Chandra Pandey PhD¹, Lloyd Chen BA², Kalyani Jekkaraju BA¹, Manishi Prasad MPH, MBA³ and Paul N Mudd, Jr. Pharm D, MBA³
¹WNS Global Services, Mumbai, India; ²Roivant Sciences, Inc. on behalf of Urovant Sciences, Inc., a wholly-owned member of the Roivant family of companies, New York, NY
Presented By: Lloyd Chen

Poster #NM13  SAFETY AND EFFICACY OF ONABOTULINUMTOXIN A INJECTIONS IN THE SETTING OF SUPRAPUBIC CATHETERS
Laura L. Giusto MD¹, Patricia M. Zahner MD², Jessica C. Lloyd MD², Juan M. Guzman-Negron MD³, Shree Agrawal BS², Courtenay K. Moore MD², Raymond R. Rackley MD², Sandip P. Vasavada MD² and Howard B. Goldman MD²
¹Cleveland Clinic Foundation, Cleveland, Ohio; ²Cleveland, Ohio
Presented By: Laura L. Giusto, MD
Poster #NM14  
**ONABOTULINUM TOXIN INJECTION TO TREAT DESD IN PATIENTS WITH CEREBRAL PALSY**  
Wade Bushman MD PhD and Ruthie Su MD  
Madison, WI  
Presented By: Ruthie Rebecca Su, MD

Poster #NM15  
**INCONTINENT ILEOVESICOSTOMY FOR NEUROGENIC BLADDER DYSFUNCTION: LONG TERM CLINICAL AND URODYNAMIC PATIENT OUTCOMES**  
Mihir Shah MD, Ali Syed MD, Alana Murphy MD, Akhil Das MD and Patrick Shenot MD  
Thomas Jefferson University Hospital, Sidney Kimmel Medical School, Philadelphia, PA  
Presented By: Mihir Shah, MD

Poster #NM16  
**BASELINE DEMOGRAPHIC CHARACTERISTICS OF A CONTEMPORARY NATIONAL SPINAL CORD INJURED POPULATION: THE NBRG SCI REGISTRY**  
Sara Lenherr MD, MS¹, John Stoffel MD², Sean Elliott MD, MS³, Darshan Patel MD⁴, Amitabh Jha MD, MPH⁵, Angela Presson PhD, MS⁶, Chong Zhang MS⁶, Jeffrey Rosenbluth MD, MPH⁵, Blayne Welk MD, MSc⁶ and Jeremy Myers MD⁷  
¹University of Utah, Salt Lake City, UT; ²University of Michigan, Ann Arbor, MI; ³University of Minnesota, Minneapolis, MN; ⁴Western University, London, Ontario, Canada  
Presented By: Sara M. Lenherr, MD, MS

Poster #NM17  
**PATIENTS WITH MULTIPLE SCLEROSIS REPORT SIGNIFICANT BENEFITS FROM PERCUATNEOUS TIBIAL NERVE STIMULATION AND HAVE A HIGH RATES OF MAINTENANCE THERAPY**  
William Berg MD¹, Charles Loeb BA², Anjali Kapur BS², Wai Lee MD², Steven Weissbart MD² and Jason Kim MD²  
¹Stony Brook University Medical Center, Stony Brook, NY; ²Stony Brook Medicine, Stony Brook, NY  
Presented By: William T. Berg, MD

Poster #NM18  
**VOIDING SYMPTOMS AND URODYNAMICS FINDINGS IN ADULT DIAGNOSED TETHERED CORD**  
Lauren Bakios MD⁶, Madeline Cancian MD³, Petra Klinge MD², Pradeep Chopra MD² and Janice Santos-Cortes MD²  
¹Warren Alpert Medical School, Providence, Rhode Island; ²Warren Alpert Medical School, Providence, RI  
Presented By: Lauren Bakios, MD

Poster #NM19  
**CHARACTERISTICS OF PATIENTS WITH CONGENITAL UROLOGIC DISEASES TRANSITIONING TO AN ADULT UROLOGIC CLINIC**  
Cyrus Adams MD, MS, Casey Kowalik MD, Joshua Cohn MD, Sophia Delpe MD, W. Stuart Reynolds MD, MPH, Douglas Milam MD, Roger Dmochowski MD, John Brock MD and Melissa Kaufman MD, PhD  
Vanderbilt University  
Presented By: Cyrus M. Adams, II, MS, MD

Poster #NM20  
**FACTORS ASSOCIATED WITH DISCONTINUOUS FOLLOW-UP IN A UROLOGIC CONGENITAL POPULATION**  
Cyrus Adams MD, MS, Casey Kowalik MD, Joshua Cohn MD, Sophia Delpe MD, W. Stuart Reynolds MD, MPH, Douglas Milam MD, Roger Dmochowski MD, John Brock MD and Melissa Kaufman MD, PhD  
Vanderbilt University  
Presented By: Cyrus M. Adams, II, MS, MD

Poster #NM21  
**DOES POST-VOID RESIDUAL URINE PREDICT SEVERITY OF VOIDING SYMPTOMS IN MULTIPLE SCLEROSIS PATIENTS?**  
Elizabeth Dray MD, John Stoffel MD, J Quentin Clemens MD, Anne Cameron MD and Priyanka Gupta MD  
University of Michigan, Ann Arbor, Michigan  
Presented By: Elizabeth Van Huffel Dray, MD
Poster #NM22  IMPACT OF SPINAL CORD LEVEL OF INJURY ON URINARY SYMPTOMS AND QUALITY OF LIFE IN PATIENTS MANAGED WITH CLEAN INTERMITTENT CATHETERIZATION
Iryna Crescenze MD¹, Jeremy Myers MD², Sara Lenherr MD², Darshan Patel MD², Sean Elliott MD³, Blayne Welk MD⁴, Diana Covalschi MPH¹ and John Stoffel MD¹
¹University of Michigan, Ann Arbor, MI; ²University of Utah, Salt Lake City, UT; ³University of Minnesota, Minneapolis, MN; ⁴Western University, Ontario, CA
Presented By: Iryna Crescenze, MD

Poster #NM23  RISK FACTORS FOR METABOLIC SYNDROME IN THE ADULT SPINA BIFIDA PATIENT
Stephanie Kielb MD
Northwestern University Feinberg School of Medicine
Presented By: Stephanie J. Kielb, MD

Poster #NM24  SIGNIFICANT INTERACTION EFFECTS BETWEEN PARAPLEGIC AND TETRAPLEGIC PATIENT REPORTED BLADDER FUNCTION AND QUALITY OF LIFE: AN ARGUMENT FOR EXAMINING THESE INJURIES SEPARATELY
Sara Lenherr MD, MS¹, John Stoffel MD², Sean Elliott MD, MS³, Darshan Patel MD³, Amitabh Jha MD MPH¹, Angela Presson PhD, MS¹, Chong Zhang MS¹, Blayne Welk MD, MSc⁴ and Jeremy Myers MD¹
¹University of Utah, Salt Lake City, UT; ²University of Michigan, Ann Arbor, MI; ³University of Minnesota, Minneapolis, MN; ⁴Western University, London, Ontario, Canada
Presented By: Sara M. Lenherr, MD, MS
Male Incontinence/Urodynamics Podium Session
Thursday, March 1, 2018
5:05 p.m. – 6:35 p.m.
Moderators: Alvaro Lucioni, MD
Jaspreet S. Sandhu, MD

5:05 p.m. #9 IMPROVEMENTS IN POST-OPERATIVE FOLEY CATHETER EDUCATION THROUGH AUDIO-VISUAL MEDIA
Michelle Kim MD PhD and Shahin Tabatabaei MD
Boston, MA
Presented By: Michelle Kim, MD, PhD

5:15 p.m. #10 BACTERIAL CULTURES AT THE TIME OF ARTIFICIAL URINARY SPHINCTER REVISION SURGERY IN CLINICALLY UNINFECTED DEVICES: A PROSPECTIVE CONTEMPORARY SERIES
Ross Avant MD¹, Matthew Ziegelmann MD², Brian Linder MD² and Daniel Elliott MD²
¹Mayo Clinic; ²Rochester, MN
Presented By: Ross A. Avant, MD

5:25 p.m. #11 WITHDRAWN

5:35 p.m. #12 PREOPERATIVE GROUP EDUCATION IMPROVES PREPAREDNESS FOR RADICAL PROSTATECTOMY AND PATIENT-REPORTED OUTCOMES
Bradley Gill MD, MS, Abhinav Khanna MD, MPH, Anna Zampini MD, MBA, Daniel Hettel BS, Anna Faris BS, Hadley Wood MD and Edmund Sabanegh MD
Cleveland Clinic
Presented By: Bradley C. Gill, MD, MS

5:45 p.m. #13 IDEALIZED FEMALE VOIDERS: IS THERE A DIFFERENCE IN QMAX AMONGST AGE GROUPS WHEN VOIDS ARE VOLUME CORRECTED.
Israel Franco MD¹, Therese Gardere PNP² and Kaitlyn Murphy PNP²
¹Yale University, Department of Urology; ²Yale University, Department of Urology, New Haven, CT
Presented By: Israel Franco, MD

5:55 p.m. #14 IS IT IMPORTANT TO DO PELVIC FLOOR EMG TO DEVELOP “NORMAL” NOMOGRAMS
Israel Franco MD¹, Therese Gardere PNP² and Kaitlyn Murphy PNP²
¹Yale University, Department of Urology; ²Yale Department of Urology
Presented By: Israel Franco, MD

6:05 p.m. #15 LOW RELIABILITY OF VIDEOURODYNAMICS AND DIAGNOSIS OF DETRUSOR SPHINCTER DYSSYNERGIA: THE TRUTH LIES IN THE EYE OF THE BEHOLDER
Michael Randazzo, Brandi Miller DO, Christopher Tallman MD, Timothy Boone MD, PhD and Rose Khavari MD
Houston Methodist Hospital Department of Urology, Houston Texas
Presented By: Brandi Miller, DO

6:15 p.m. #16 THE UTILITY OF URODYNAMIC EVALUATION IN CLINICAL PRACTICE
Rena Malik MD, Deborah Hess MD, Maude E Carmel MD, Gary Lemack MD and Philippe Zimmern MD
UT Southwestern Medical Center, Dallas, TX
Presented By: Rena D. Malik, MD

6:25 p.m. #17 HOW DOES DIABETES AFFECT VOIDING DYSFUNCTION? A MATCHED PAIRS STUDY
Dina Manasherova BA Candidate¹, Gen Li PhD², Carrie M Aisen MD³ and Doreen E Chung MD³
¹Columbia University, New York, NY; ²Department of Biostatistics, Mailman School of Public Health, Columbia University, New York, New York; ³New York Presbyterian Hospital / Columbia University Medical Center, New York, New York
Presented By: Dina Manasherova, BA Candidate Biology
Female Urology/Incontinence Moderated Poster Session
Thursday, March 1, 2018
5:05 p.m. – 6:35 p.m.
Moderators: Ngoc-Bich P. Le, MD
Leslie M. Rickey, MD, MPH

Poster #M9
SAFETY AND EFFICACY OF ONABOTULINUMTOXINA INJECTIONS IN OCTO AND NONAGENARIANS
Patricia M. Zahner, Laura L. Giusto MD, Jessica C. Lloyd MD, Juan M. Guzman-Negron MD, Shree Agrawal BS, Courtenay K. Moore MD, Raymond R. Rackley MD, Sandip P. Vasavada MD and Howard B. Goldman MD
Cleveland, Ohio
Presented By: Patricia Zahner, MD

Poster #M10
COMPARISON OF ANTI-INCONTINENCE DEVICES DURING CROSSFIT EXERCISE
Laura Gephart MD MBA¹, Rachel High MD², Anthony Lewis MD², Michelle Reyes BS MBA³, Karen Doersch BS³, Thomas Kuehl PhD² and Jill Danford MD²
¹University of Texas, Rio Grande Valley, Edinburg, TX; ²Baylor Scott & White Health, Temple, TX; ³Texas A&M Health Science Center College of Medicine
Presented By: Rachel High, DO

Poster #M11
LONG-TERM EFFICACY AND SAFETY OF SINGLE-INCISION MINI-SLINGS EXCEPT TVT-SECU RVERS STANDARD MIDURETHRAL SLINGS IN SURGICAL MANAGEMENT OF FEMALE STRESS URINARY INCONTINENCE: AN UPDATED SYSTEMIC REVIEW AND META-ANALYSIS
Aram Kim MD, Hyeong Gon Kim MD¹, Ji-Yeon Han MD² and Myung-Soo Choo MD³
¹Department of Urology, Konkuk University Hospital, Konkuk University School of Medicine, Seoul, Korea; ²Department of Urology, Pusan National University YangSan Hospital, Pusan National University School of Medicine, Seoul, Korea; ³Department of Urology, Asan medical center, Ulsan College off medicine
Presented By: Aram Kim, MD, PhD

Poster #M12
OPIOID PRESCRIBING PRACTICES AND MEDICATION USE AFTER UROGYNECOLOGICAL SURGERY
Melissa Plummer MD¹, Shirly Solouki MD² and Nitya Abraham MD²
¹Einstein, Bronx, NY; ²Montefiore, Bronx, NY
Presented By: Shirly Solouki, MD

Poster #M13
TRENDS IN THIRD LINE THERAPY UTILIZATION FOR OVERACTIVE BLADDER AMONGST GENERAL UROLOGISTS, ADVANCED PRACTICE PROVIDERS, AND FPMRS SUBSPECIALISTS
Jessica Lloyd MD, Juan Guzman MD, Laura Giusto MD, Patricia Zahner MD, Courtenay Moore MD, Howard Goldman MD, Raymond Rackley MD and Sandip Vasavada MD
Cleveland, OH
Presented By: Laura Giusto, MD

Poster #M14
RISK FACTORS ASSOCIATED WITH FECAL INCONTINENCE IN PATIENTS WITH OVERACTIVE BLADDER
Caitlin Lim DO¹, Joshua Cohn MD¹, Casey Kowalik MD², Melissa Kaufman MD², Roger Dmochowski MD² and Stuart Reynolds MD²
¹Albert Einstein Medical Center, Philadelphia, PA; ²Vanderbilt University, Nashville, TN
Presented By: Caitlin Lim, DO, MS

Poster #M15
MIDURETHRAL SLING REMOVAL: JUST THE FIRST STEP?
Casey G Kowalik MD, Benjamin M Dropkin MD, Jorge Jaunarena MD, Sophia Delpe MD, W. Stuart Reynolds MD, MPH, Roger R Dmochowski MD and Melissa R Kaufman MD, PhD
Nashville, TN
Presented By: Casey Kowalik, MD
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<td>M16</td>
<td>COST IMPACT OF ELECTIVE CESAREAN DELIVERY ON FUTURE PELVIC FLOOR DISORDERS</td>
<td>Devin Patel MD¹, Justin Houman MD², James Weinberger MD², Lauren Wood MD², Jennifer Anger MD² and Karyn Eilber MD²</td>
<td>Cedars Sinai Medical Center; Los Angeles, CA</td>
<td>Devin Patel, MD</td>
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<td>M17</td>
<td>EVALUATION OF SMARTPHONE APPLICATIONS FOR PELVIC FLOOR EXERCISES USING THE PELVIC FLOOR-4 (PF-4) SCORING SYSTEM</td>
<td>Erica Lai MD, MPH and Pierre Lespinasse MD</td>
<td>Rutgers-NJMS, Newark, NJ</td>
<td>Erica Lai</td>
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<td>M18</td>
<td>OPIOID PRESCRIPTION AND USAGE IN SACRAL NEUROMODULATION, SLING, AND PROLAPSE SURGERY: ARE WE CONTRIBUTING TO THE OPIOID EPIDEMIC?</td>
<td>Dena Moskowitz MD, Katherine Amin MD, Alvaro Lucioni MD, Kathleen Kobashi MD and Una Lee MD</td>
<td>Virginia Mason Medical Center, Seattle, WA</td>
<td>Dena Moskowitz, MD</td>
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**Female Urology/Incontinence Non-Moderated Poster Session**  
*Not CME Accredited*  
Thursday, March 1, 2018  
5:05 p.m. – 6:35 p.m.

**Poster #NM25**  
**REGIONAL VARIATION IN DIAGNOSTIC TESTING FOR OVERACTIVE BLADDER IN THE FEMALE MEDICARE POPULATION**  
Annah Vollstedt MD¹, Rachel Moses MD, MPH² and E. Ann Gormley MD³  
¹Dartmouth-Hitchcock Medical Center; ²Dartmouth-Hitchcock Medical Center, Lebanon, NH  
Presented By: Annah Vollstedt, MD

**Poster #NM26**  
**WHAT IS THE IDEAL ANTIBIOTIC PROPHYLAXIS FOR INTRAVESICAL BOTOX INJECTION? A COMPARISON OF TWO DIFFERENT REGIMENS**  
Justin Houman MD¹, Ariel Moradzadeh MD¹, Kian Asanad BS², Devin Patel MD¹, Alex Hannemann BS³, Joseph D. Thum MD⁴, Jennifer T. Anger MD⁴ and Karyn S. Eilber MD⁴  
¹Cedars-Sinai Medical Center, Department of Surgery, Division of Urology, Los Angeles, CA; ²David Geffen School of Medicine at UCLA, Los Angeles, CA; ³University of South Dakota School of Medicine  
Presented By: Justin Houman, MD

**Poster #NM27**  
**PATIENT PERCEPTIONS OF CHAPERONES DURING INTIMATE EXAMS AND PROCEDURES IN UROLOGY CLINIC**  
Julia Han MD, Blake Noennig MD¹, Jonathan Pavlinec MD¹, Llana Damiano BS² and Louis Moy MD¹  
¹University of Florida Department of Urology Gainesville, FL; ²University of Florida, Gainesville FL  
Presented By: Julia Han, MD

**Poster #NM28**  
**PLACEMENT OF MID-URETHRAL MESH SLINGS AT THE TIME OF VAGINAL PROLAPSE REPAIR DOES NOT AFFECT POST-OPERATIVE SEXUAL FUNCTION OR ORGASM**  
Laura Nguyen MD, Esther Han DO, Jamie Bartley DO, Jason Gillerin MD, Kim Killinger MSN, Judith Boura MS and Larry Siris MD  
Royal Oak, MI  
Presented By: Laura Nguyen, MD

**Poster #NM29**  
**SYNTHETIC MID-URETHRAL SLING COMPLICATIONS: EVOLUTION OF PRESENTING SYMPTOMS OVER TIME**  
Connie Wang BA, Alana Christie MS and Philippe Zimmern MD  
UT Southwestern Medical Center  
Presented By: Connie Nan Wang

**Poster #NM30**  
**THE EFFECT OF SURGEON VOLUME ON PERIOPERATIVE OUTCOMES FOR MID-URETHRAL SLING SURGERY**  
Jacqueline Speed MD, Ye Wang PhD, Steven Chang MD, MS and Elodi Dielubanza MD  
B Brigham and Women's Hospital, Boston, MA  
Presented By: Jacqueline M. Speed, MD

**Poster #NM31**  
**EVALUATION OF THE VAGINAL MYCOBIOME IN ASYMPTOMATIC PRE-MENOPAUSAL WOMEN**  
Victoria C.S. Scott MD¹, Jie Tang PhD², Tiina Drell PhD², Jaak Simm PhD³, Andres Salumets PhD³, Madis Metsis PhD³, David M. Underhill PhD² and A. Lenore Ackerman MD, PhD²  
¹Los Angeles, CA; ²Tallinn, Estonia; ³Tartu, Estonia  
Presented By: Victoria C. Scott, MD

**Poster #NM32**  
**THE EFFECT OF INSURANCE ON WAIT TIMES FOR OUTPATIENT EVALUATION BY ACADEMIC FPMRS-TRAINED PROVIDERS**  
Wai Lee MD, Tal Cohen BA, Charles Loeb BA, Alice Cheung BS, Anjali Kapur BS, Chris Du BA, Ramsey Kall BA, Steven Weissbart MD and Jason Kim MD  
Stony Brook Medicine, Stony Brook, NY  
Presented By: Wai Lee, MD
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POSTERIOR TIBIAL NERVE STIMULATION: IDENTIFICATION OF PROGNOSTIC FACTORS FOR SUCCESSFUL OUTCOMES
Melanie Aube MD, FRCSC, Matthew Nielsen MD, Jessica DeLong MD, Jeremy Tonkin MD, Ramon Virasoro MD and Kurt McCormon MD
EVMS, Norfolk, VA
Presented By: Melanie Aube-Peterkin, MD

Poster #NM34

WITHDRAWN

Poster #NM35

SYMPTOM-BASED CLUSTERING OF FEMALE LUTS PARTICIPANTS IN THE SYMPTOMS OF LOWER URINARY TRACT DYSFUNCTION RESEARCH NETWORK (LURN) STUDY
Victor P. Andreev PhD, DSSc¹, Gang Liu PhD¹, Claire C. Yang MD², Abigail R. Smith PhD¹, Margaret E. Helmhuth MA², Jonathan B. Wiseman MA¹, Robert M. Merion MD, FACS³, Kevin P. Weinfurt PhD², H. Henry Lai MD², David Celli PhD³, Brian T. Helfand MD, PhD², James W. Griffith PhD³, John O.L. DeLancey MD³, Matthew O. Fraser PhD³, and the LURN Study Group*¹
¹Arbor Research Collaborative for Health, Ann Arbor, MI; ²University of Washington, Seattle, WA; ³Duke University Medical Center, Durham, NC; *Washington University School of Medicine, St. Louis, MO; Northwestern University Feinberg School of Medicine, Chicago, IL; NorthShore University Health System, Glenview, IL; ¹University of Michigan, Ann Arbor, MI; *National Institute of Diabetes and Digestive and Kidney Diseases, Bethesda, MD
Presented By: Victor P. Andreev, PhD, DSSc

Poster #NM36

DRINKING FROM THE FIRE HOSE: EDUCATIONAL CONTENT OF DIRECT-TO-CONSUMER TELEVISION ADVERTISING FOR OVERACTIVE BLADDER
Kevin Koo MD, MPH, MPhil and E. Ann Gormley MD
Lebanon, NH
Presented By: E. Ann Gormley, MD

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SYMPTOM RESOLUTION AND RECURRENT STRESS INCONTINENCE FOLLOWING URETHRAL SLING REMOVAL
Andrew Bergersen MD¹, Elinora Price MPH¹, Michael Callegari MBA², Evan Austin BS¹, Odutoyosi Oduyemi BS¹, Joel Funk MD¹ and Christian Twiss MD¹
¹University of Arizona College of Medicine, Tucson, AZ; ²University of Oklahoma College of Medicine, Oklahoma City, Oklahoma
Presented By: Andrew Bergersen, MD

Poster #NM38

FACTORS ASSOCIATED WITH THE DECISION TO UNDERGO SURGICAL MANAGEMENT OF STRESS URINARY INCONTINENCE IN REPRODUCTIVE AGE WOMEN
Juan Sanchez MD, Melissa Laudano MD, Pamela Escobar MD, Nitya Abraham MD, Ava Leegant MD and Keith Downing MD
Montefiore Medical Center, Bronx, NY
Presented By: Melissa Ann Laudano, MD

Poster #NM39

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Dominique Thomas BS³, Vickie Cadestin MS³, Tsung Mou MD¹ and Bilal Chughtai MD³
¹Weill Cornell Medicine, New York, New York; ²Weill Comell Medicine, New York, NY; ³Weill Medicine, New York, NY
Presented By: Dominique Dana Marie Thomas, BS

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Sebastian Viguera MD and Javier Pizarro-Berdichevsky MD
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Amanda Artsen MD¹, Kesha Dyer MD, MPH², Gisselle Zazueta-Damian ³, Pamela Duran BS³ and Marianna Alperin MD, MS⁴  
¹Department of Reproductive Medicine, University of California, San Diego, San Diego, California; ²Female Pelvic Medicine and Reconstructive Surgery, Kaiser Permanente, San Diego, CA; ³School of Engineering, University of California San Diego, San Diego, CA; ⁴Department of Reproductive Medicine, Division of Urogynecology and Pelvic Reconstructive Surgery, University of California San Diego, San Diego, CA  
Presented By: Amanda Artsen, MD

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Majid Mirzazadeh MD¹, Gregory Gillispe PhD², Kenneth Russel MS³ and Philip Brown PhD⁴  
¹Wake Forest University, Winston Salem, NC; ²Wake Forest Innovations, Virginia Tech – Wake Forest School of Biomedical Engineering Sciences; ⁴Wake Forest University  
Presented By: Majid Mirzazadeh, MD

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Emmanuel Chartier-Kastler MD, PhD¹, salima ismail MD², christine reus MD², thomas seisen MD³ and veronique phe MD, PhD⁴  
¹Urology, Paris 6, France; ²Pitie-salpetriere hospital, AP-HP, Paris, France  
Presented By: Emmanuel J. Chartier-Kastler, MD, PhD, FEBU

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Annah Vollstedt MD¹, Rachel Moses MD, MPH² and E. Ann Gormley MD³  
¹Dartmouth-Hitchcock Medical Center; ²Lebanon, NH  
Presented By: Annah Vollstedt, MD

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Karny Jacoby MD¹, Kurt McCammon MD², Susan Kalota MD³, Harvey Winkler MD⁴, Jeffrey A. Snyder MD⁵, Kevin Cline MD⁶, Kaiser Robertson MD⁷, Randall Kahani MD⁸, Lonny Green MD⁹, Shazia A. Malik MD¹⁰ and Eric Rovner MD¹¹  
¹UW Medicine/Northwest Hospital; ²Urology of Virginia, Virginia Beach, VA; ³Urological Associates of Southern Arizona, Tucson, AZ; ⁴Northwell Health, Great Neck, NY; ⁵Genitourinary Surgical Consultants, Denver, CO; ⁶Regional Urology Associates, Shreveport, LA; ⁷Chesapeake Urology Associates, Hanover, MD; ⁸Women's and Infants Hospital, Providence, RI; ⁹WomanCare, Arlington Heights, IL; ¹⁰Virginia Women's Center, Richmond, VA; ¹¹Valley Urogynecology Associates, Phoenix, AZ; ¹²Medical University South Carolina, Charleston, SC  
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Dunia Benamer MBBS¹, Daniela Andrich MD FRCS ², Jeremy Ockrim MD, FRCS , MB ChB³, Tamsin Greenwell MSc, FRCS , MB ChB and Anthony Mundy MS, MRCP, FRCS¹  
¹UCLH Urology; ²UCLH Urology, UCLH, London UK; ³UCLH Urology, UCLH, London, UK  
(Presented by: Dunia Benamer)  
Presented By: Dunia Benamer, MBBS
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Connie Wang BA, Alana Christie MS and Philippe Zimmern MD  
UT Southwestern Medical Center  
Presented By: Connie Nan Wang

Poster #NM49  
DURABILITY OF MACROPLASTIQUE IN WOMEN WITH STRESS URINARY INCONTINENCE SECONDARY TO INTRINSIC SPHINCTER DEFICIENCY
Timothy Carroll, Alana Christie MS, Melissa Foreman RDMS RVT, Gaurav Khatri MD and Philippe Zimmern MD  
UT Southwestern Medical Center  
Presented By: Timothy Field Carroll, BS

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Ariel Moradzadeh MD¹, Juzar Jamnagerwalla MD², Karyn Eilber MD³ and A. Lenore Ackerman MD, PhD³  
¹Cedars-Sinai Medical Center, Los Angeles, CA; ²City of Hope, Duarte, CA; ³Cedars-Sinai Medical Center  
Presented By: Ariel Moradzadeh, MD

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Mauricio Plata MD MSc FACS¹, Alejandra Bravo-Balado MD¹, Daniela Robledo MD¹, Juan Carlos Castaño MD², Catalina Osorio MD², Milton Salazar MD², Juan Guillermo Velásquez MD², Carlos Gustavo Trujillo MD², Juan Ignacio Caicedo MD³ and Juan Guillermo Cataño MD¹  
¹Department of Urology, Hospital Universitario Fundación Santa Fe de Bogotá and Universidad de los Andes School of Medicine, Bogotá D.C., Colombia; ²Department of Urology, Clínica Universitaria CES, Universidad CES and Pontificia Universidad Bolivariana, Medellín, Colombia.; ³Department of Urology, Clínica Comfamiliar de Risaralda, Pereira, Colombia.;  
(Presented by: Mauricio Plata)  
Presented By: Mauricio Plata, MD, MSc FACS

Poster #NM52  
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Ricardo Valderrama Fellow in Urogynecology¹, Andrea Suarez Physician² and Javier Pizarro-Berdichevsky Uro-Gynecologist³  
¹Catholic University, Santiago, Chile; ²Pontificia Universidad Católica de Chile, Santiago, Chile; ³Urogynecology unit, sotero del río hospital, Chile/ division de obstetricia y Ginecologia, pontificia universidad de Chile  
Presented By: Ricardo Alfredo Valderrama, Sr., Fellow Urogynecology

Poster #NM53  
PATIENTS ENCOUNTER LONGER WAIT TIMES TO SEE FPMRS-TRAINED FEMALE PROVIDERS WHEN COMPARED TO THEIR MALE COUNTERPARTS
Wai Lee MD, Charles Loeb BA, Tal Cohen BA, Alice Cheung BS, Anjali Kapur BS, Chris Du BA, Ramsey Kaili BA, Steven Weissbart MD and Jason Kim MD  
Stony Brook Medicine, Stony Brook, NY  
Presented By: Wai Lee, MD
Poster #NM54

TRAINING FIDELITY AND QUALITY CONTROL IN CLINICAL BEHAVIORAL RESEARCH FOR URINARY INCONTINENCE: THE GLADIOLUS TRIAL

Tomas L. Griebling MD, MPH¹, Ananias Diokno MD², Diane Newman DNP³, Kathryn Burgio PhD⁴, Lisa Low PhD⁴, Michael Maddens MD², Leslee Subak MD⁴, Patricia Goode MD⁵, Carolyn Sampselle PhD⁶, Ann Robinson RN, MSA⁷, Treviillore Raghu Nathan PhD⁸, Judy Boura MS⁹, Donna McIntyre ⁸ and & The Gladiolus Research Team

¹University of Kansas School of Medicine; ²William Beaumont Hospital, Royal Oak, MI; ³University of Pennsylvania, Philadelphia, PA; ⁴University of Alabama - Birmingham, Birmingham, AL; ⁵University of Michigan, Ann Arbor, MI; ⁶Stanford University, Palo Alto, CA; ⁷Birmingham/Atlanta Veterans Affairs Geriatric Research, Education, and Clinical Center, Birmingham, AL

Presented By: Tomas L. Griebling, MD, MPH

Poster #NM55

CONCOMITANT PROCEDURES PERFORMED AT THE TIME OF MIDURETHRAL SLING AFFECT POST-OPERATIVE URINARY RETENTION RATE

Paige Kuhlmann MD¹, Andrew Chen MD¹, Jeffrey Johnson BS², Logan Hubbard BS², Lenore Ackerman MD¹, Karyn Elber MD¹ and Jennifer Anger MD¹

¹Cedars Sinai Medical Center, Los Angeles, CA; ²Western Michigan University Homer Stryker MD School of Medicine, Kalamazoo, MI; ³Sidney Kimmel Medical School at Thomas Jefferson University, Philadelphia, PA

Presented By: Paige Kuhlmann, MD

Poster #NM56

URINARY INCONTINENCE AND LOW BONE MINERAL DENSITY AMONG OLDER U.S. ADULTS

Nikki Steinsiek BS¹, Brittany L. Morgan BS², Kamran P. Sajadi MD³ and Lynn M Marshall ScD⁴

¹Oregon Health and Science University School of Medicine and OHSU-PSU School of Public Health, Portland, Oregon; ²OHSU-PSU SOPH; ³OHSU Department of Urology; ⁴OHSU Department of Orthopaedics and Rehabilitation, OHSU Epidemiology Program

Presented By: Nikki Steinsiek, BS

Poster #NM57

SELECTIVE BLADDER DENERVATION FOR THE TREATMENT OF OVERACTIVE BLADDER

Stefan De Wachter ¹, Le Mai Tu ², Magali Robert ³, Karel Everaert ⁴, Eric Rovner ⁵ and Roger Dmochowski ⁶

¹Dept Urology, University hospital antwerpen, university Antwerpen, belgium; ²Sherbrooke university hospital, canada; ³University of Calgary, Canada; ⁴University of Ghent, Belgium; ⁵Medical University of South Carolina, USA; ⁶Vanderbilt University, usa

Presented By: Stefan De Wachter, MD, PhD

Poster #NM58

POSTOPERATIVE URINARY RETENTION AS A PROGNOSTIC FACTOR FOR LONGER-TERM CONTINENCE OUTCOMES AFTER URETHRAL BULKING AGENT INJECTION FOR TREATMENT OF FEMALE STRESS URINARY INCONTINENCE

Amanda Chung MBBS, MS, FRACS¹, Melanie Aube MD², Jessica DeLong MD², Ramon Virasoro MD², Jeremy Tonkin MD² and Kurt McCammon MD²

¹The University of Sydney, Sydney Medical School, Department of Urology, Concord Repatriation Genera Hospital, Concord NSW, Australia.; ²Eastern Virginia Medical School, Norfolk VA, United States of America

Presented By: Amanda S.J. Chung, BSc, MBBS, MS, FRACS

Poster #NM59

PREOPERATIVE 3D TRANSLABIAL ULTRASOUND FOR MANAGEMENT OF SYNTHETIC MID-URETHRAL SLING COMPLICATIONS

Nabeel Shakir MD, Connie Wang BS, Melissa Foreman RDMS RVT, Gaurav Khatri MD and Philippe Zimmer MD

UT Southwestern Medical Center

Presented By: Nabeel A. Shakir, MD
Poster #NM60

POST OPERATIVE VOIDING PATTERN AND THE RESULTS OF MIDURETHRAL SLING SURGERY IN DIABETIC AND NON DIABETIC FEMALE PATIENTS WITH PURE STRESS URINARY INCONTINENCE

DongWan Sohn ¹, SunWook Kim MD², SungDae Kim MD, PhD³ and DongSup Lee MD, PhD⁴
¹Yeouido St.Mary's Hospital; ²Yeouido St.Mary's Hospital, Seoul, Korea; ³Jeju National University Hospital, Jeju, Korea; ⁴St. Vincent's Hospital, Suwon, Korea

Presented By: Dongwan Sohn, MD

Poster #NM61

RISK FACTORS FOR PROLONGED HOSPITALIZATION AND MAJOR COMPLICATIONS FOLLOWING MID URETHRAL SLING REVISION

Zaid Chaudhry MD¹, Evgeniy Kreydin MD², Janine Oliver MD³, Zachery Baxter MD⁴, Ja-Hong Kim MD⁴, Christopher Tarnay MD⁵ and Shlomo Raz MD⁶
¹Citrus Obstetrics and Gynecology West Covina, CA; ²Keck School of Medicine at USC Department of Urology Los Angeles, CA; ³University of Colorado School of Medicine Division of Urology Denver, CO; ⁴David Geffen School of Medicine at UCLA Department of Urology Los Angeles, CA; ⁵David Geffen School of Medicine at UCLA Department of Obstetrics and Gynecology Los Angeles, CA

Presented By: Zaid Chaudhry, MD

Poster #NM62

CIRCUMFERENTIAL AND DORSAL URETHRAL DIVERTICULA: A CONTEMPORARY EXPERIENCE OF THE MOST CHALLENGING GROUP OF DIVERTICULA

Jai Seth , Sarah Itam , Mahreen Pakzad , Rizwan Hamid , Jeremy Ockrim and Tamsin Greenwell

Presented By: Jai Seth, FRCS

Poster #NM63

MID-TERM MACROPLASTIQUE OUTCOME IN WOMEN WITH STRESS URINARY INCONTINENCE SECONDARY TO INTRINSIC SPHINCTER DEFICIENCY

Timothy Carroll , Alana Christie MS, Melissa Foreman RDMS RVT, Gaurav Khatri MD and Philippe Zimmern MD
UT Southwestern Medical Center
Presented By: Timothy Field Carroll, BS

Poster #NM64

A COMPARISON OF SYNTHETIC MIDURETHRAL SLINGS (MUS) AND AUTOLOGOUS PUBOVAGINAL SLINGS (PVS) IN THE SETTING OF CONCOMITANT SURGERY

Deborah Hess MD, MS, Rena Malik MD, Alana Christie MS and Maude Carmel MD
UT Southwestern, Dallas, TX
Presented By: Deborah Sperling Hess, MD, MS
Video Session I
Friday, March 2, 2018
7:00 a.m. – 8:00 a.m.
Moderators: Benjamin E. Dillon, MD
Priya Padmanabhan, MD, FACS

Video #1  NOVEL PARAVAGINAL CYSTOCELE REPAIR TECHNIQUE: IMPROVING UPON ANTERIOR COLPORRAPHY
Claudia Sevilla, Claudia Sevilla, Melissa Sanford MD, Melissa Sanford MD, Sameer Chopra MD, Sameer Chopra MD, Luis Medina MD, Luis Medina MD, David Ginsberg MD, David Ginsberg MD, Larissa Rodriguez MD and Larissa Rodriguez MD
Los Angeles, CA
Presented By: Claudia Sevilla, MD

Video #2  VAGINAL WALL APICAL PERFORATION DURING MESH SACROCOLPOPEXY AND RECTOPEXY
Philippe Zimmern MD, Craig Olson MD and Carlos Finsterbusch MD
UT Southwestern Medical Center
Presented By: Philippe E. Zimmern, MD, FACS, FPMRS

Video #3  PERITONEOCOLPOPEXY
Philippe Zimmern MD and Dominic Lee MD
UT Southwestern Medical Center
Presented By: Philippe E. Zimmern, MD, FACS, FPMRS

Video #4  TOTAL AUTOLOGOUS FASCIA LATA ROBOTIC SACROCOLPOPEXY
Christian Twiss MD, Frank Lin MD and Joel Funk MD
University of Arizona College of Medicine
Presented By: Christian Owen Twiss, MD

Video #5  VAGINAL TRACHELECTOMY FOR CERVICAL STUMP PROLAPSE
Brian Linder MD and John Gebhart MD, MS
Mayo Clinic, Rochester, MN
Presented By: Brian J. Linder, MD

Video #6  VESTIBULECTOMY TECHNIQUE FOR REFRACTORY VULVODYNIA
Neha Rana MD, Tess Crouss MD, Nima Shah MD, Melissa Dawson DO and Kristene Whitmore MD
Philadelphia, PA
Presented By: Neha Rana, MD
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2018 Winter Meeting
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Nabeel Shakir MD, Connie Wang BA, Nirmish Singla MD, Feras Alhalabi MD, Alana Christie MS, Gary Lemack MD and Philippe Zimmern MD
UT Southwestern Medical Center
Presented By: Nabeel A. Shakir, MD

9:50 a.m.  #26 RISK FACTORS FOR STRESS URINARY INCONTINENCE SURGERY FOLLOWING SLING REVISION: A MULTIVARIATE ANALYSIS OF PATIENTS UNDERGOING TOTAL AND SUBTOTAL EXCISION OF SYNTHETIC MESH SUBURETHRAL SLINGS FOR COMPLICATIONS
Janine Oliver MD¹, Claire Burton MD², Lauren Wood MD³, Zaid Chaudhry MD¹, Lorna Kwan MD³, Christopher Tarnay MD⁴, Ja-Hong Kim MD³ and Shlomo Raz MD³
¹Division of Urology, Department of Surgery, University of Colorado School of Medicine, Aurora, CO; ²Department of Urology, University of California Los Angeles David Geffen School of Medicine, Los Angeles, CA; ³Citrus Obstetrics and Gynecology West Covina, CA; ⁴Department of Obstetrics and Gynecology, University of California Los Angeles David Geffen School of Medicine, Los Angeles, CA
Presented By: Janine L. Oliver, MD
Male Incontinence/Urodynamics/Neuromodulation Moderated Poster Session
Friday, March 2, 2018
8:30 a.m. – 10:00 a.m.
Moderators: Kurt A. McCammon, MD
Matthew P. Rutman, MD

Poster #M19
OUTCOMES OF PERIURETHRAL BULKING AGENT INJECTION FOR TREATMENT OF POSTPROSTATECTOMY INCONTINENCE AFTER SLING PLACEMENT: A MULTINATIONAL EXPERIENCE.
Amanda Chung MBBS, MS, FRACS¹, William Lynch MBBS, FRACS², Melanie Aube MD³ and Kurt McCammon MD⁴
¹The University of Sydney, Sydney Medical School, Department of Urology, Concord Repatriation General Hospital, Concord NSW, Australia.; ²Macquarie University Hospital, Sydney NSW, Australia; ³Eastern Virginia Medical School, Norfolk VA, United States of America
Presented By: Amanda S.J. Chung, BSc, MBBS, MS, FRACS

Poster #M20
FACTORS PREDICTIVE OF PROLONGED LENGTH OF STAY AND UNPLANNED READMISSION FOLLOWING ARTIFICIAL URINARY SPHINCTER SURGERY
Siobhan Hartigan MD, Leilei Xia , William Jaffe MD, Thomas Guzzo MD and Robert C. Kovell MD
Division of Urology, Department of Surgery, University of Pennsylvania Health System, Philadelphia, PA
Presented By: Siobhan M. Hartigan, MD

Poster #M21
URINARY RETENTION AFTER ADVANCE® SLING: A MULTI-INSTITUTIONAL RETROSPECTIVE STUDY
Jennifer Rolef MD¹, Goran Rac MD¹, Lauren Rittenberg MD¹, Lindsey Cox MD¹, Arthur Mourtzinos MD², Leane Westney MD³, Mike Metro MD⁴ and Eric Rovner MD¹
¹Medical University of South Carolina, Charleston, SC; ²Lahey Clinic, Burlington, MA; ³MD Anderson, Houston, TX; ⁴Temple University, Philadelphia, PA
Presented By: Jennifer Rolef, MD

Poster #M22
DOES THE TIMING OF RADIOTHERAPY FOR TREATMENT OF PROSTATE CANCER AFFECT OUTCOMES OF TRANSOBTURATOR SLING PLACEMENT FOR MALE STRESS URINARY INCONTINENCE?
Clinton Yeaman ¹, Amanda Chung BSc/MBBS² and Kurt McCammon MD¹
¹Eastern Virginia Medical School, Norfolk, VA; ²The University of Sydney, Sydney Medical School, Concord NSW, Australia
(Presented by: Clinton Yeaman)
Presented By: Clinton Yeaman

Poster #M23
CAN THE PENILE CUFF TEST PREDICT THE OUTCOME OF HOLMIUM LASER ENucleation OF THE PROSTATE FOR BENIGN PROSTATIC OBSTRUCTION?
Kwang Jin Ko ¹, Hyeong-gon Kim MD PhD¹ and Kyu-Sung Lee MD PhD¹
¹Department of Urology, Samsung Medical Center, Sungkyunkwan University, Seoul, Korea; ²Korea University Hospital, Seoul, Korea; ³Samsung Medical Center, Seoul, Korea
Presented By: Kyu-Sung Lee, MD, PhD

Poster #M24
PREDICTORS OF IDIOPATHIC DETRUSOR OVERACTIVITY ON URODYNAMICS: SYMPTOMS OF OVERACTIVE BLADDER AND DEGREE OF CORRELATION
Elisabeth M. Sebesta MD¹, Gen Li PhD¹, Carrie M. Aisen MD¹, Marissa Theofanides MD² and Doreen E. Chung MD²
¹Department of Urology, NewYork-Presbyterian/Columbia University Medical Center, New York, NY; ²Department of Biostatistics, Mailman School of Public Health, Columbia University, New York, NY
Presented By: Elisabeth Sebesta, MD

Poster #M25
IMPACT OF AUA PRACTICE GUIDELINES ON URODYNAMIC PRACTICE PATTERNS
Elizabeth Rourke DO, MPH¹, William Meeks ², Daniel Richardo ³ and Stephen Kraus MD, FACS¹
¹DEPARTMENT OF UROLOGY, UNIVERSITY OF TEXAS HEALTH SCIENCE CENTER AT SAN ANTONIO, TEXAS; ²DEPARTMENT OF DATA MANAGEMENT AND STATISTICAL SERVICES, AMERICAN UROLOGICAL ASSOCIATION, LINTHICUM, MARYLAND
Presented By: Elizabeth Rourke, DO, MPH
Poster #M26

PRODUCT PERFORMANCE EVENTS IN SACRAL NEUROMODULATION PATIENTS: RESULTS FROM THE PRODUCT SURVEILLANCE REGISTRY
Karl Kreder MD, MBA¹, Kevin Benson MD², Keisha Sandberg MPH³, Brian Van Dorn MS³ and Todd Weaver PhD, MPH³
¹University of Iowa; ²Sanford Health; ³Medtronic
Presented By: Karl Joseph Kreder, Jr., MD, MBA

Poster #M27

OUTCOMES OF SACRAL NEUROMODULATION FOR TREATMENT OF REFRACTORY OVERACTIVE BLADDER AMONGST OCTOGENARIANS
Nichole Young-Lin MD, Raveen Syan MD, Michele Torosis MD, Craig Comiter MD and Ekene Enemchukwu MD
Stanford, CA
Presented By: Raveen Syan, MD

Poster #M28

CHRONIC TIBIAL NERVE STIMULATION FOR OVERACTIVE BLADDER: EARLY RESULTS WITH AN OFFICE BASED, PERCUTANEOUSLY IMPLANTED LEAD
Larry Sirls MD, Amanda Schonhoff BSN, Angela Waldvogel BSN, Deborah Hasenau MS and Kenneth Peters MD
Beaumont Health, Royal Oak, MI
Presented By: Larry Thomas Sirls, II, MD
*Male Incontinence/Urodynamics/Neuromodulation Non-Moderated Poster Session

*Not CME Accredited Friday, March 2, 2018
8:30 a.m. – 10:00 a.m.

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Sarah Itam ¹, Jai Seth ², Bogdan Toia ³, Eskinder Solomon ³, Mahreen Pakzad ⁴, Rizwan Hamid ⁵, Tamsin Greenwell ⁶ and Jeremy Ockrim ⁷
¹UCLH; ²UCLH, London, UK
Presented By: Sarah Itam, MEd FRCS(Urol) MBBS

Poster #NM66  RETROGRADE LEAK POINT PRESSURE DOES NOT PREDICT OUTCOMES FOLLOWING MALE SLING INSERTION
Bogdan Toia ¹, Jai Seth ², Hazel Ecclestone ³, Mahreen Pakzad ⁴, Rizwan Hamid ⁵, Tamsin Greenwell ⁶ and Jeremy Ockrim ⁷
¹UCLH; ²UCLH, London, UK
Presented By: Bogdan Toia

Poster #NM67  UPSIZING THE ARTIFICIAL URINARY SPHINCTER PRESSURE REGULATING BALLOON IN MEN WITH PERSISTENT STRESS URINARY INCONTINENCE AFTER INDEX PLACEMENT
Rachel A. Moses MD, MPH¹, James R. Craig MD², Jacob Basilius MD², William O. Brant MD, FACS² and Jeremy B. Myers MD, FACS²
¹University of Utah, Salt Lake City, UT; ²Salt Lake City, UT
Presented By: Rachel A. Moses, MD

Poster #NM68  WHAT IS THE FATE OF ARTIFICIAL URINARY SPHINCTERS AMONG MEN UNDERGOING REPETITIVE BLADDER CANCER TREATMENT: A CASE SERIES
Scott Heiner BS¹, Boyd Viess MD², Marcelino Rivera MD³, Brian Linder MD⁴ and Daniel Elliott MD⁴
¹Mayo Clinic School of Medicine, Rochester, MN; ²Department of Urology, Mayo Clinic, Rochester, MN
Presented By: Scott Mitchell Heiner, B.S. Biology

Poster #NM69  PREVALENCE AND CHARACTERISTICS OF URINARY INCONTINENCE IN A TREATMENT-SEEKING MALE PROSPECTIVE COHORT – RESULTS FROM THE LURN STUDY
Brian T. Helfand MD, PhD¹, Abigail R. Smith PhD², H. Henry Lai MD³, Claire C. Yang MD⁴, John L. Gore MD, MS⁴, Bradley A. Erickson MD, MS, FACS⁴, Karl J. Kreder MD, MBA⁴, Anne P. Cameron MD⁵, Kevin P. Weinert PhD², James W. Griffith PhD², Aaron C. Lentz MD, FACS², Pooja Talaty MS, MHA¹, Victor P. Andreev PhD, DSc² and Ziya Kirkali MD, and the LURN Study Group¹⁰
¹NorthShore University Health System, Glenview, IL; ²Arbor Research Collaborative for Health, Ann Arbor, MI; ³Washington University School of Medicine, St. Louis, MO; ⁴University of Washington, Seattle, WA; ⁵University of Iowa Department of Urology, Iowa City, IA; ⁶University of Michigan, Ann Arbor, MI; ⁷Duke University Medical Center, Durham, NC; ⁸Northwestern University Feinberg School of Medicine, Chicago, IL; ⁹Duke University Division of Urologic Surgery, Raleigh, NC; ¹⁰National Institute of Diabetes and Digestive and Kidney Diseases, Bethesda, MD
Presented By: Brian Todd Helfand, MD, PhD

Poster #NM70  INCIDENCE AND MANAGEMENT OF PERSISTENT STRESS URINARY INCONTINENCE AFTER HOLMIUM LASER ENUCLEATION OF THE PROSTATE
Mihir Shah MD, Thomas Hardacker MD, MBA, Ali Syed MD, Patrick Shenot MD, Alana Murphy MD and Akhil Das MD
Thomas Jefferson University Hospital, Sidney Kimmel Medical School, Philadelphia, PA
Presented By: Mihir Shah, MD
Poster #NM71  ADVANCE SLING IN PATIENTS WITH PREVIOUS PROSTATE RADIATION  
Laura Nguyen MD, Natalie Gaines MD¹, Allison Gurney-McMaster ², Esther Han DO³, Kenneth Peters MD⁴, Jason Gilleran MD⁴, Melissa Fischer MD⁴, Judith Boura MS⁵ and Larry Sirls MD⁶  
¹San Antonio, TX; ²Rochester, MI; ³Royal Oak, MI  
Presented By: Laura Nguyen, MD

Poster #NM72  EVALUATING SUCCESS RATES AFTER ARTIFICIAL URINARY SPHINCTER PLACEMENT: A COMPARISON OF CLINICAL DEFINITIONS  
Brian Linder MD, Laureano Rangel and Daniel Elliott  
Mayo Clinic, Rochester, MN  
Presented By: Brian J. Linder, MD

Poster #NM73  BULKAMID INJECTION IN MEN – OPERATIVE TECHNIQUE AND PUTATIVE MECHANISM OF ACTION.  
Tamsin Greenwell MD FRCS MB ChB¹, Jeremy Ockrim MD FRCS MB ChB² and Eskinder Solomon MSc³  
¹UCLH Urology; ²UCLH Urology, UCLH, London UK; ³Dept. Medical Science, Guys Hospital, London, UK  
(Presented by: Tamsin Greenwell)  
Presented By: Tamsin Jillian Greenwell, MBChB, MD FRCS(Urol)

Poster #NM74  LONG-TERM OUTCOMES OF ARTIFICIAL URINARY SPHINCTER IMPLANTATION: A SINGLE CENTER EXPERIENCE  
Alejandro Abello MD¹ and Anurag K Das MD FACS²  
¹Beth Israel Deaconess Medical Center; ²Beth Israel Deaconess Medical Center. Boston, MA  
Presented By: Alejandro Abello, MD

Poster #NM75  PATIENTS WITH PRIOR PUDENDAL NERVE ENTRAPMENT SURGERY CAN BENEFIT FROM PUDENDAL NEUROMODULATION  
Kenneth Peters MD¹, Patrick Vecellio ², Kim Killinger ³,⁴, Esther Han DO⁵, Laura Nguyen MD⁵ and Judith Boura ³,⁴  
¹Beaumont Health-Royal Oak; ²Oakland University Wm. Beaumont School of Medicine, Rochester, MI; ³Beaumont Health-Royal Oak, Royal Oak, MI; ⁴Beaumont Health-Royal Oak, Royal Oak, MI (Presented by: Kenneth M. Peters, MD)  
Presented By: Kenneth M. Peters, MD

Poster #NM76  DETRUSOR OVERACTIVITY IN PATIENTS WITH ADJUNCTIVE BOTULINUM TOXIN A INJECTION AFTER NEUROMODULATION  
Jason Gilleran MD, Brian Yuhan BS¹, Kim Killinger MSN², Jamie Bartley DO³, Laura Nguyen MD³, Esther Han MD⁴, Larry Sirls MD⁴, Judy Boura MSN³ and Kenneth Peters MD⁴  
¹Rochester, MI; ²Royal Oak, MI  
Presented By: Jason P. Gilleran, MD

Poster #NM77  SALVAGE SACRAL NERVE STIMULATION AFTER INADEQUATE RESPONSE TO ONABOTULINUIMOTOXIN A FOR THE TREATMENT OF OVERACTIVE BLADDER – IS THERE HOPE AFTER CROSSOVER?  
Shree Agarwal BS¹, Patricia Zahner MD², Laura Giusto MD², Jessica Lloyd MD², Juan Guzman MD², Courtenay Moore MD², Raymond Rackley MD², Sandip Vasavada MD² and Howard Goldman MD²  
¹Cleveland Clinic, Cleveland, OH; ²Cleveland, OH  
Presented By: Shree Agarwal, BS

Poster #NM78  TRENDS IN THIRD LINE OAB THERAPIES: AN ANALYSIS OF OF CASE LOGS  
Siri Drangsholt MD¹, Jeremy Slaywin MD² and Benjamin Brucker MD³  
¹NYU, New York, New York; ²NYU  
Presented By: Siri Timm Drangsholt, MD
ABSTRACT LISTING

Poster #NM79  SACRAL NEUROMODULATION TINED LEAD INFECTION RATE AT 5 YEARS POST-IMPLANT
Steven Siegel MD¹, Jason Bennett MD², Jeffrey Mangel MD³, Craig Comiter MD³, Samuel Zylstra MD³, Tomas L. Griebling MD³, Erin T. Bird MD³, Suzette E. Sutherland MD³, Fangyu Kan MS⁴ and Kellie Chase Berg MS⁴
¹Metro Urology; ²Female Pelvic Medicine, Grand Rapids, MI; ³MetroHealth Medical Center, Cleveland, OH; ⁴Stanford University, Stanford, CA; ⁵Milford Regional Medical Center, Whitinsville, MA; ⁶University of Kansas, Kansas City, KS; ⁷Scott and White Healthcare, Temple, TX; ⁸University of Washington, Seattle, WA; ⁹Medtronic, Minneapolis, MN
Presented By: Steven W. Siegel, MD

Poster #NM80  DEVELOPMENT OF A NEUROSTIMULATOR IMPLANT TECHNIQUE FOR TIBIAL NERVE STIMULATION
George Stone MD¹, Daniel Gruber MD² and Jerome Buller MD, MBA³
¹Walter Reed National Military Medical Center; ²Walter Reed National Military Medical Center, Bethesda, MD; ³Uniformed Services University of Health Sciences, Bethesda, MD
Presented By: GEORGE WILLIAM STONE, MD

Poster #NM81  TRENDS IN POST-PERCUTANEOUS TIBIAL NERVE STIMULATION FOLLOW-UP TREATMENT
Caroline Brandon MD¹, Dominique Malacarne MD², Nancy Ringel, MD¹, Nirit Rosenblum MD², Benjamin Brucker MD², Scott Smilen MD², Victor Nitti MD² and Kimberly Ferrante MD²
¹New York University Langone Health; ²New York University, New York, NY
Presented By: Caroline Brandon, MD. M.Sc.

Poster #NM82  LONG-TERM (> 8Y.) FUNCTIONAL OUTCOMES OF S3 SACRAL NEUROMODULATION FOR THE TREATMENT OF IDIOPATHIC OVERACTIVE BLADDER
Emmanuel Chartier-Kastler MD, PhD¹, Salima Ismail MD², Marie-Aimée Perrouin-Verbe MD², Johan Rose Dit Modestine MD², Pierre Denys MD, PhD² and Veronique Phe MD, PhD²
¹Urology, Paris 6, France; ²Pitié-Salpêtrière hospital, AP-HP, Paris, France
Presented By: Emmanuel J. Chartier-Kastler, MD, PhD, FEBU

Poster #NM83  SUPER REFRACTORY OVERACTIVE BLADDER: A CHALLENGING PATIENT POPULATION WITH A HIGH DEGREE OF PELVIC FLOOR COMORBIDITY
Dena Moskowitz MD¹, Karmon Janssen DO², Katherine Amin MD¹, Alvaro Lucioni MD¹, Kathleen Kobashi MD¹ and Una Lee MD¹
¹Virginia Mason Medical Center, Seattle, WA; ²Madigan Army Medical Center, Tacoma, WA
Presented By: Dena Moskowitz, MD

Poster #NM84  ACTIVE SMOKING AND MALE GENDER IS ASSOCIATED WITH PERCUTANEOUS TIBIAL NERVE STIMULATION NONCOMPLIANCE
Charles Loeb BA, William Berg MD, Chris Du BA, Wai Lee MD, Steven Weissbart MD and Jason Kim MD
Stony Brook Medicine, Stony Brook, NY
Presented By: Charles Andrew Loeb, BA

Poster #NM85  DO URODYNAMICS ADD ANYTHING WHEN CONSIDERING NEUROMODULATION IN MEN?
Bradley Gill MD, MS¹, Elidi Dielubanza MD², Shree Agrawal BS¹, Jessica Lloyd MD¹, Juan Guzman MD¹, Courtenay Moore MD¹, Howard B Goldman MD¹, Sandip Vasavada MD¹ and Raymond Rackley MD¹
¹Cleveland Clinic; ²Cleveland Clinic
Presented By: Bradley C. Gill, MD, MS

Poster #NM86  EFFECTIVENESS OF INTRADETRUSOR ONABOTULINUM TOXIN A INJECTIONS IN MANAGING OVERACTIVE BLADDER AFTER INITIAL SACRAL NEUROMODULATION THERAPY
Hamilton Trinh BS, Vicki Irish CNP¹, Mierya Diaz-Insua PhD¹ and Humphrey Atiemo MD²
¹Detroit, Michigan; ²Detroit, Michigan
Presented By: Hamilton Trinh, BS
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<td>James Connor BA, BS¹, Amy Long MSN² and Colin Goudelocke MD³</td>
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<tr>
<td>¹Lincoln Memorial University – DeBusk College of Osteopathic Medicine, Harrogate, TN; ²Erlanger Health System; ³Department of Urology, University of Tennessee - Erlanger, Chattanooga, Tennessee</td>
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<td>Presented By: Colin Murrah Goudelocke, MD</td>
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<td>University of Florida Department of Urology</td>
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<td>Hameeda Naimi ¹, Anna S. Nagle PhD², Naomi N. Vinod ¹, Hiren Kolli ¹, Derek Sheen ¹, Uzoma Anele MD³, Stefan G. De Wachter MD PhD⁴, John E. Speich PhD⁵ and Adam P. Klausner MD⁶</td>
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<td>¹Department of Surgery/Division of Urology, Virginia Commonwealth University School of Medicine, Richmond, VA; ²Department of Mechanical &amp; Nuclear Engineering, Virginia Commonwealth University School of Engineering, Richmond, VA; ³Department of Urology, University Hospital Antwerpen, Edegem, University of Antwerpen, Wilrijk, Belgium; ⁴Department of Surgery/Division of Urology Hunter Holmes McGuire Veterans Affairs Medical Center, Richmond, VA</td>
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<td>Presented By: Hameeda Agha Naimi, BS</td>
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<td>Keara English ¹, Melissa Laudano MD² and Nitya Abraham MD³</td>
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<tr>
<td>¹Albert Einstein College of Medicine; ²Montefiore Medical Center, Bronx, NY</td>
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<td>Presented By: Keara English, BA</td>
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<td>Loma Linda, CA</td>
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<td>Richard Axell MSc¹, Vahit Guzelburc MD FEBU², Megan Duffy MSc³, Sarah Itam MD, FRCS , MB ChB³, Mahreen Pakzad MD, FRCS , MB ChB³, Rizwan Hamid MSc, FRCS , MB ChB³, Jeremy Ockrim MD, FRCS , MB ChB³ and Tamsin Greenwell MD, FRCS , MB ChB³</td>
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<td>¹UCLH Urology; ²Istanbul, Turkey; ³UCLH Urology, UCLH, London, UK</td>
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<td>(Presented by: Richard Axell)</td>
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<td>Presented By: Richard Axell, BEng, MSc, PhD</td>
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<td>Pansy Uberoi MD, MPH¹, Anna Smitherman PhD² and Forrest Jellison MD²</td>
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<td>¹San Antonio, TX; ²San Antonio, Tx</td>
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<tr>
<td>Presented By: Pansy Uberoi, MD, MPH</td>
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Poster #NM94  DIFFERENCES IN BLADDER GEOMETRY DURING FILLING BETWEEN OVERACTIVE BLADDER PATIENTS AND HEALTHY VOLUNTEERS
Anna Nagle PhD¹, Stephanie Clark MD², Rachel Bernardo BS³, Naomi Vinod ⁴, Laura Carucci MD, Ashley Caroll MD⁵, John Speich PhD⁶ and Adam Klausner MD⁷
¹Department of Mechanical & Nuclear Engineering, Virginia Commonwealth University; ²Department of Urogynecology, Virginia Commonwealth University, Richmond, VA; ³Department of Biomedical Engineering, Virginia Commonwealth University, Richmond, VA; ⁴Department of Surgery, Virginia Commonwealth University, Richmond, VA; ⁵Department of Mechanical & Nuclear Engineering, Virginia Commonwealth University, Richmond, VA; ⁶Department of Surgery, Virginia Commonwealth University, Richmond, VA; ⁷Department of Surgery Hunter Holmes McGuire Veterans Affairs Medical Center, Richmond, VA
Presented By: Anna S. Nagle, PhD

Poster #NM95  URETHRAL PRESSURE MEASUREMENT AS A TOOL FOR THE URODYNAMIC DIAGNOSIS OF DETRUSOR SPHINCTER DYSSYNERGIA AND STRATIFICATION OF BLADDER PHYSIOLOGY
Lauren Corona MD, Anne Pelletier Cameron MD, J Quentin Clemens MD, Yongmei Qin MD, MS and John Stoffel MD
Ann Arbor, MI
Presented By: Lauren E. Corona, MD

Poster #NM96  NOVEL METRICS FOR SENSATION KINETICS DURING URODYNAMICS
Andrew Colhoun MD, Adam Klausner MD¹, Jacqueline Morin BS¹, Zachary Cullingsworth BS⁵, David Rapp MD⁶, Stefan De Wachter MD PhD⁴ and John Speich PhD⁶
¹Virginia Commonwealth University, Richmond, VA; ²Virginia Commonwealth University; ³Virginia Urology, Richmond, VA; ⁴University of Antwerp, Antwerp, Belgium
Presented By: Andrew Farish Colhoun, MD

Poster #NM97  DOES RECORDING PATIENT PERCEPTION OF URGENCY IMPROVE INTER-READER RELIABILITY FOR IDENTIFYING DETRUSOR OVERACTIVITY ON URODYNAMIC TRACINGS?
Dianne Glass MD,PhD¹, Siri Drangsholt MD², Dominique Malacarne MD², Victor Nitti MD² and Benjamin Brucker MD²
¹University of Chicago Medicine, Department of Gynecology, Chicago, Illinois; ²New York University Langone Medical Center, Department of Urology, New York, New York
Presented By: Dianne Glass, MD, PhD

Poster #NM98  MIDURETHRAL SLING EXPLANT IMPROVES URODYNAMIC BLADDER OUTLET OBSTRUCTION
Casey G Kowalik MD, Jorge Jaunarena MD, Benjamin Dropkin MD, Sophia Delpe MD, W. Staurt Reynolds MD, MPH, Roger R Dmochowski MD and Melissa R Kaufman MD, PhD
Nashville, TN
Presented By: Benjamin M. Dropkin, MD

Poster #NM99  VALIDATION OF A REAL-TIME BLADDER SENSATION METER DURING ORAL HYDRATION IN HEALTHY ADULTS: EFFECTS OF TRAINING AND ULTRASOUND PROBE PRESSURE
Derek Sheen ¹, Anna S. Nagle PhD², Hiren Kolli ³, Naomi N. Vinod ³, Hameeda A. Naimi ³, Uzoma A. Anele ¹, Stefan G. De Wachter MD, PhD⁴, John E. Speich PhD⁴ and Adam P. Klausner MD⁴
¹Department of Surgery/Division of Urology, Virginia Commonwealth University School of Medicine, Richmond, VA; ²Department of Mechanical & Nuclear Engineering, Virginia Commonwealth University School of Engineering, Richmond, VA; ³Department of Urology, University Hospital Antwerp, Edegem, University of Antwerp, Wilrijk, Belgium; ⁴Department of Surgery/Division of Urology Hunter Holmes McGuire Veterans Affairs Medical Center, Richmond, VA
Presented By: Derek Sheen, B.S. in Biology
Neuromodulation/OAB Moderated Podium Session
Friday, March 2, 2018
4:00 p.m. – 5:00 p.m.

Moderators: Jason M. Kim, MD
Steven W. Siegel, MD

4:00 p.m. #27 PERCUITANEOUS STIMULATION OF THE SAPHENOUS NERVE: A NOVEL EXPERIMENTAL APPROACH TO TREATING OVERACTIVE BLADDER.
Scott MacDiarmid MD¹, Judy Branson RN², Sasha John PhD³ and Paul Yoo PhD³
¹Alliance Urology Associates; ²Alliance Urology Specialists; ³Institute of Biomaterials and Biomedical Engineering, University of Toronto, Toronto, Canada
Presented By: Scott A. MacDiarmid, MD

4:10 p.m. #28 LUMBOSACRAL 1.5 TESLA MRI COMPATIBILITY WITH SACRAL NEUROMODULATION: AN IN-VIVO PROSPECTIVE STUDY
Juan M. Guzman-Negron MD¹, Javier Pizarro-Berdichevsky MD¹, Bradley Gill MD¹ and Howard B. Goldman MD¹
¹Cleveland Clinic, Cleveland, Ohio; ²Urogynecology Unit, Sotero del Rio Hospital, Chile/Division de Obstetricia y Ginecologia, Pontificia Universidad de Chile/Cleveland Clinic, Cleveland, Ohio
Presented By: Juan Guzman, MD

4:20 p.m. #29 THE CLINICAL AND COST EFFECTIVENESS OF ACUPUNCTURE FOR SYMPTOMATIC R IDO
Julie Jenks MSc RN¹, Jingo Paras RN², Eabhann O’Connor Much, MB BCH, BAO ², Mahreen Pakzad MD, FRCS (Urol), MB ChB², Jeremy Ockrim MD, FRCS (Urol), MB ChB², and Tamsin Greenwell MD, FRCS (Urol), MB ChB²
¹UCLH Urology; ²UCLH Urology, UCLH, London, UK
(Presented by: Julie Jenks)
Presented By: Jeremy Ockrim MD, FRCS (Urol), MB ChB

4:30 p.m. #30 A NOVEL SACRAL NEUROMODULATION INFECTION PROTOCOL IS ASSOCIATED WITH REDUCTION IN DEVICE INFECTION
James Connor BA, BS¹, Amy Long MSN² and Colin Goudelocke MD³
¹Lincoln Memorial University – DeBusk College of Osteopathic Medicine, Harrogate, TN; ²Erlanger Health System; ³Department of Urology, University of Tennessee - Erlanger, Chattanooga, Tennessee
Presented By: Colin Murrah Goudelocke, MD

4:40 p.m. #31 SAFETY & EFFICACY OF THE ECOIN™ IMPLANTABLE TIBIAL NERVE STIMULATION DEVICE FOR OVERACTIVE BLADDER SYNDROME
Scott MacDiarmid MD, Sharon English, Bilal Kaaki, Vince Lucente, Matthew Clark, Peter Gilling, Patrick Meffan and Peter Sand
Alliance Urology Specialists
Presented By: Scott A. MacDiarmid, MD

4:50 p.m. #32 SAFE AND EFFECTIVE TREATMENT OF OVERACTIVE BLADDER WITH A MINIATURIZED RECHARGEABLE SACRAL NEUROMODULATION SYSTEM
Stefan De Wachter ¹, Bertil Blok ², Philip Van Kerrebroeck ³, Alain Rufion ⁴, Frank Van der Aa ⁴, Marie Aimee Perrouin Verbe ⁵, Ranjana Jairam ⁶ and Suzy Elneil ⁷
¹Dept Urology, University hospital antwerpen, university Antwerpen, belgium; ²Erasmus MC, Rotterdam, The Netherlands; ³Maastricht University Medical Centre, Maastricht, The Netherlands; ⁴Hôpital Lyon Sud, Pierre Bénite, Lyon, France; ⁵UZ Leuven, Leuven, Belgium; ⁶University Hospital of Nantes, Nantes, France; ⁷National Hospital of Neurology and Neurosurgery, London, United Kingdom
Presented By: Stefan De Wachter, MD, PhD
Poster #M29

TITLE: PSYCHOLOGICAL TRAUMA IN INTERSTITIAL CYSTITIS/BLADDER PAIN SYNDROME (IC/BPS): AN ANALYSIS AND CONSIDERATIONS FOR CLINICAL PRACTICE

Lindsey C. McKernan PhD¹, William S. Reynolds MD, MPH², Roger R. Dmochowski MD, MMHC³ and Leslie J. Crofford MD⁴
¹Department of Psychiatry & Behavioral Sciences, Vanderbilt University School of Medicine, Nashville, TN; ²Department of Urologic Surgery, Vanderbilt University School of Medicine, Nashville, TN; ³Department of Medicine, Vanderbilt University School of Medicine, Nashville, TN
Presented By: Lindsey Colman McKernan, PhD

Poster #M30

IS THERE A ROLE FOR CYSTOSCOPY WITH FULGURATION IN THE MANAGEMENT OF RECURRENT URINARY TRACT INFECTIONS IN WOMEN?

Joseph Crivelli, Feras Alhalabi MD and Philippe Zimmerm MD
UT Southwestern Medical Center
Presented By: Joseph J. Crivelli, MD

Poster #M31

COST-UTILITY ANALYSIS OF UPFRONT PHARMACOTHERAPY COMPARED TO AN UPFRONT SURGICAL INTERVENTION FOR PATIENTS WITH BENIGN PROSTATE HYPERPLASIA

Dean Elterman MD, MSc, FRCSC¹, Lisa Masucci ², Shaun Shepherd ³, Aysegeul Erman ³ and Murray Krahn ⁴
¹University Health Network - Toronto Western Hospital, Toronto, ON; ²University of Toronto, Toronto, ON; ³McMaster University, Toronto, ON; ⁴University Health Network, Toronto, ON
Presented By: Dean S. Elterman, MD, MSc, FRCSC

Poster #M32

VALUE OF ENUCLEATION-MORCELLATION EFFICACY TO PREDICT THE LEARNING CURVE OF HOLMIUM LASER ENUCLEATION OF THE PROSTATE FOR TREATMENT OF BENIGN PROSTATIC HYPERPLASIA

Sung Tae Cho MD, PhD¹, Don Kyoung Choi MD¹, Ohseong Kwon MD², Young Goo Lee MD, PhD³ and Ji-Yeon Han MD
¹Hallym University Kangnam Sacred Heart Hospital, Seoul, Korea; ²Hallym University Kangnam Sacred Heart Hospital, Seoul, Korea; ³Department of Urology, Pusan National University Yangsan Hospital, Pusan, Korea
Presented By: Sung Tae Cho, MD

Poster #M33

EFFICACY OF TRANSCUTANEOUS POSTERIOR TIBIAL NERVE STIMULATION IN OLDER PATIENTS WITH OVERACTIVE BLADDER SYNDROME

Rebecca Haddad MD¹, Claire Hentzen MS², Françoise Valentini MD¹, Gilberte Robain MD, PhD² and Gerard Amarenco MD, PhD²
¹Sorbonne University, UPMC Univ Paris 06, AP-HP, GRC 01, Group of Clinical Research in Neuro-Urology, Rothschild Hospital, Neuro-rehabilitation department, Paris, France; ²Sorbonne University, UPMC Univ Paris 06, AP-HP, GRC 01, Group of Clinical Research in Neuro-Urology, Tenon Hospital, Neuro-Urology department, Paris, France
(Presented by: Rebecca Haddad)
Presented By: Rebecca Haddad, MD
*IC/Pelvic Pain/Geriatrics/BPH Non-Moderated Poster Session

**Not CME Accredited**
Friday, March 2, 2018
4:00 p.m. – 5:00 p.m.

**Poster #NM100**
COST-EFFECTIVENESS OF GREENLIGHT PHOTOSELECTIVE VAPORIZATION OF THE PROSTATE COMPARED TO TRANSURETHRAL RESECTION OF THE PROSTATE FOR BENIGN PROSTATIC HYPERPLASIA

Dean Elterman MD, MSc, FRCSC¹, Lisa Massuci ², Aysegul Erman ², Michelle Furman ³, Shaun Shepherd ⁴ and Murray Krahn ⁵
¹University Health Network - Toronto Western Hospital, Toronto, ON; ²University of Toronto, Toronto, ON;
³University Health Network, Toronto, ON; ⁴McMaster University, Hamilton, ON
Presented By: Dean S. Elterman, MD, MSc, FRCSC

**Poster #NM101**
CORRELATION BETWEEN NOCTURIA AND SEXUAL FUNCTION IN BENIGN PROSTATIC HYPERPLASIA

DongWan Sohn ¹, SunWook Kim MD², SungDea Kim MD, PhD³ and Dong Sup Lee MD, PhD⁴
¹Yeonoido St.Mary's Hospital; ²Yeonoido St.Mary's Hospital, Seoul, Korea; ³Seoul National University Hospital, Jeju, Korea; ⁴St. Vincent's Hospital, Suwon, Korea
Presented By: Dongwan Sohn, MD

**Poster #NM102**
REGIONAL VARIATION IN TRANSURETHRAL RESECTION OF PROSTATE (TURP) DECLINE IN THE MODERN SURGICAL ERA

Elisabeth M. Sebesta MD, Matthew P. Rutman MD and Elias Hyams MD
Department of Urology, NewYork-Presbyterian/Columbia University Medical Center, New York, NY
Presented By: Elisabeth Sebesta, MD

**Poster #NM103**
THE TEMPORARY IMPLANTABLE NITINOL DEVICE (ITIND) FOR THE MINIMALLY INVASIVE TREATMENT OF BPH: COMPARISON OF 3-YEAR OUTCOMES & COST IN CANADA

Dean Elterman MD, MSc, FRCSC¹ and Shaun Shepherd MSc²
¹University Health Network - Toronto Western Hospital, Toronto, ON; ²McMaster University, Hamilton, ON
Presented By: Dean S. Elterman, MD, MSc, FRCSC

**Poster #NM104**
CHANGES IN TOTAL GLAND AND CENTRAL ZONE VOLUMES FOLLOWING PROSTATE ARTERY EMBOLIZATION: RESULTS FROM A PROSPECTIVE STUDY

Rehan Ali MD¹, Samdeep Mouli MD¹, Frank Miller MD¹, Ahmed Gabr MD¹, Ronald Mora MD¹, Ali Asadi ¹, Nadine Abouchaleh ¹, Ahsun Riaz MD¹, Robert Lewandowski MD¹, Nabeel Hamoui MD², John Hairston MD² and Riad Saleem MD MBA³
¹Northwestern Chicago, IL; ²Northwestern, Chicago, IL; ³Northwestern Memorial Hospital
Presented By: John Hairston MD

**Poster #NM105**
WITHDRAWN

**Poster #NM106**
CHARACTERISTICS OF CLINICAL TRIALS FOR BENIGN PROSTATIC HYPERPLASIA

Dominique Thomas BS¹, Caroline Chung BS², Alexis Te MD³ and Bilal Chughtai MD³
¹Weill Cornell Medicine, New York, New York; ²Weill Cornell Medicine, New York, NY; ³Weill Medicine, New York, NY
Presented By: Dominique Dana Marie Thomas, BS
Poster #NM107  ROLE OF PHOTOVAPORIZATION OF THE PROSTATE (PVP) IN MEN WITH A PROSTATE VOLUME LESS THAN 40 GRAMS
Ramy Goueli MD, MHS¹, Dominique Thomas BS¹, Kevin Zorn MD², Malek Meskawi MD², Pierre-Alain Hueber MD², Vincent Misrai MD², Alexis Te MD¹ and Bilal Chughtai MD¹
¹Weill Cornell Medicine, New York, NY; ²University of Montreal Hospital Center, Montreal, QC, Canada
Presented By: Ramy S. Goueli, MD, MHS

Poster #NM108  EFFECT OF VAGINAL ESTROGEN ON ASYMPTOMATIC MICROHEMATURIA: A RANDOMIZED CONTROLLED TRIAL [EVER STUDY]
Allison Polland MD¹, Mihriye Mete PhD², Amy Park MD³, Cheryl Iglesia MD³ and Lee Richter MD³
¹MedStar; ²MedStar Health Research Institute; ³MedStar Washington Hospital Center
Presented By: Allison R. Polland, MD

Poster #NM109  URINARY RETENTION IN OLDER WOMEN WITH LOWER URINARY TRACT SYMPTOMS: PREVALENCE, ASSOCIATED FACTORS AND IMPACT ON MANAGEMENT
Rebecca Haddad MD¹, Benoit Peyronnet MD¹, Matthieu Mezzadri MD¹, Claire Hentzen MS¹, Françoise Valentin MD¹, Gerard Amarenco MD, PhD⁴ and Gilberte Robain MD, PhD¹
¹Sorbonne University, UPMC Univ Paris 06, AP-HP, GRC 01, Group of Clinical Research in Neuro-Urology, Rothschild Hospital, Neuro-rehabilitation department, Paris, France; ²University Hospital of Rennes, Pontchaillou Hospital, Urology department, Rennes, France; ³AP-HP, Lariboisière University Hospital, Obstetric gynecology department, Paris, France; ⁴Sorbonne University, UPMC Univ Paris 06, AP-HP, GRC 01, Group of Clinical Research in Neuro-Urology, Tenon Hospital, Neuro-Urology department, Paris, France
(Presented by: Rebecca Haddad)
Presented By: Rebecca Haddad, MD

Poster #NM110  THE ROLE OF URODYNAMIC TESTING IN DIAGNOSIS AND MANAGEMENT OF VOIDING DYSFUNCTION IN ELDERLY FEMALE DIABETIC PATIENTS WITH URINARY RETENTION
Cristina Palmer DO and Gamal Ghoniem MD, FACS
University of California Irvine, Orange, California
Presented By: Cristina J. Palmer, DO

Poster #NM111  CLINICAL PRESENTATION OF AN ELDERLY FEMALE POPULATION WITH UNDERACTIVE BLADDER
Cristina Palmer DO and Gamal Ghoniem MD, FACS
University of California Irvine, Orange, California
Presented By: Cristina J. Palmer, DO

Poster #NM112  PAINFUL URGENCY AND/OR PAINFUL FILLING PREDICTIVE OF SOMATIC SYMPTOMS AND CHRONIC PAIN IN WOMEN WITH OVERACTIVE BLADDER
Casey G Kowalik MD, Sophia Delpe MD, Rachel Sosland MD, Melissa R Kaufman MD, PhD, Roger R Dmochowski MD and W. Stuart Reynolds MD, MPH
Nashville, TN
Presented By: Casey Kowalik, MD

Poster #NM113  LONG TERM OUTCOMES OF TRIAMCINOLONE INJECTIONS IN INTERSTITIAL CYSTITIS/BLADDER PAIN SYNDROME
Iryna Crescenze MD, Anne Cameron MD, John Stoffel MD, Paholo Barboglio MD, Quentin Clemens MD and Priyanka Gupta MD
University of Michigan, Ann Arbor, MI
Presented By: Iryna Crescenze, MD

Poster #NM114  FEASIBILITY OF AN INFRARED SPECTROSCOPY DEVICE AS A DIAGNOSTIC TOOL FOR INTERSTITIAL CYSTITIS
Jennifer Locke MD, PhD, Karla Rebullar BSc, Babak Shadgan MD, Lynn Stothers MD, Joel Teichman MD and Mark Nigro MD
Vancouver, BC
Presented By: Jennifer A. Locke, MD, PhD
ABSTRACT LISTING

Poster #NM115  T1 MAPPING OF HUMAN BLADDER WALL USING NOVEL CONTRAST MIXTURE IN 3TESLA (T) SCANNER: APPLICATIONS IN BLADDER PAIN SYNDROME/INTERSTITIAL CYSTITIS (BPS/IC)
Pradeep Tyagi PhD¹, Joseph Janicki BA², Chan-Hong Moon PhD², Jonathan Kaufman PhD³ and Christopher Chemansky MD¹
¹Department of Urology, University of Pittsburgh School of Medicine; ²Lipella Pharmaceuticals Inc, Pittsburgh PA; ³Department of Radiology, University of Pittsburgh School of Medicine
Presented By: Christopher John Chemansky, MD

Poster #NM116  ATYPICAL URETHRITIS: SHOULD WE BE TESTING FEMALE PATIENTS FOR THIS?
Matthew Sorensen MD¹, Joseph Gray BS², Austin Broussard MS³, John Fisher MD¹, Robert Heidel PhD³, Ryan Pickens MD³, James Bienvenu MD ¹ and Rebecca Lavelle MD¹
¹Department of Urology, University of Tennessee Graduate School of Medicine, Knoxville, TN; ²University of Tennessee College of Medicine, Memphis, TN; ³Department of Surgery, University of Tennessee Graduate School of Medicine, Knoxville, TN
Presented By: Matthew Sorensen, MD

Poster #NM117  FINANCIAL BURDEN OF RECURRENT URINARY TRACT INFECTIONS IN WOMEN: A TIME-DRIVEN ACTIVITY-BASED COST ANALYSIS
Shivani Gaitonde , Rena Malik MD and Philippe Zimmern MD
UT Southwestern Medical Center
Presented By: Shivani Gaitonde

Poster #NM118  EVALUATION OF THE URINARY MICROBIOME OF INTERSTITIAL CYSTITIS/BLADDER PAIN SYNDROME PATIENTS: IS THERE A CORRELATION WITH THE URINE CULTURE COLONY COUNT?
REBECCA RINKO DO¹, CAITIN LIM DO², JACLYN MUNOZ MD³, MOHAMMED AZAIZA ⁴, MELISSA DAWSON DO, MS⁵, NEHA RANA MD⁶ and KRISTENE WHITMORE MD⁷
¹Drexel University College of Medicine, Philadelphia, PA; ²Albert Einstein Medical Center, Philadelphia PA; ³Drexel University College of Medicine, Philadelphia PA; ⁴Lake Erie College of Osteopathic Medicine, Bradenton, FL
Presented By: Rebecca Cori Rinko, DO

Poster #NM119  DOES THE USE OF ANTIBIOTIC PROPHYLAXIS IN PATIENTS OVER 70 YEARS OF AGE PRIOR TO URODYNAMIC TESTING REDUCE THE RATE OF SYMPTOMATIC URINARY TRACT INFECTION?
Elisabeth M. Sebesta MD, Matthew P. Rutman MD, Gina Badalato MD and Kimberly L. Cooper MD
Department of Urology, NewYork-Presbyterian/Columbia University Medical Center, New York, NY
Presented By: Elisabeth Sebesta, MD

Poster #NM120  THE PREVALENCE, SEVERITY AND DISTRIBUTION OF PAIN AMONG OVERACTIVE BLADDER (OAB) PATIENTS ARE INTERMEDIATE BETWEEN INTERSTITIAL CYSTITIS (IC) AND CONTROLS
Maung Thu MD, H. Henry Lai MD and Joel Vetter MS
St. Louis, MO
(Presented by: Maung Thu)
Presented By: James Maung Htein Thu, MD

Poster #NM121  URINARY TRACT INFECTION RATES BETWEEN VARIABLE ANTIBIOTIC PROTOCOLS AFTER ONABOTULINUMTOXINA INJECTIONS
Nashville, TN
Presented By: Rachel Sosland, MD
Poster #NM122
INTERSTITIAL CYSTITIS/BLADDER PAIN SYNDROME: WHAT IS THE QUALITY OF THE INFORMATION PATIENTS FIND ON THE INTERNET??
Nina Mikkilineni MD¹, Gen Li PhD² and Doreen E. Chung MD¹
¹Department of Urology, Columbia University Medical Center, New York, New York; ²Department of Biostatistics, Columbia University Medical Center, New York, New York
Presented By: Nina Mikkilineni, MD

Poster #NM123
PATTERNS OF AND RISK FACTORS FOR ANTIMICROBIAL RESISTANCE IN FEMALE UROLOGICAL PATIENTS WITH URINARY TRACT INFECTIONS IN THE NEW YORK/NEW JERSEY METROPOLITAN AREA OUTPATIENT SETTING
Gina Kirkpatrick DO, MPH¹, Anat Zelmanovich MD², Cristina Cicogna MD¹, Themba Nyirenda PhD³, Michelle Kim MD², Benjamin Press ⁴, Mary Fakunle ⁵, Alan Heish ⁶ and Debra Fromer MD²
¹Hackensack University Medical Center; ²Hackensack University Medical Center, Hackensack NJ; ³Hackensack University Medical Center, Hackensack NJ; ⁴Rutgers-NJ Medical School, Newark, NJ; ⁵Rutgers-NJ Medical School, Newark NJ
Presented By: Gina Kirkpatrick, DO, MPH, MBA

Poster #NM124
LACK OF UNIFORMITY AMONG UNITED STATES GUIDELINES FOR DIAGNOSIS & MANAGEMENT OF ACUTE, UNCOMPLICATED CYSTITIS
Melissa Markowitz , Lauren Wood MD, Andrew Medendorp MD, Shlomo Raz MD, David Haake MD and Ja-Hong Kim MD
Los Angeles, CA
Presented By: Melissa Markowitz, BA

Poster #NM125
PHYSICAL THERAPY FOR ORCHIALGIA: TREATMENT MODALITIES
Matthew A Nielsen MD¹, Charles Gresham MS², Erin Glace MSPT³, Courtney Anderson PA-C⁴, Jessica Delong MD², Ramon Virasoro MD⁵, Jeremy Tonkin MD⁶ and Kurt McCammon MD²
¹Eastern Virginia Medical School, Nofolk, Virginia; ²EVMS, Norfolk, Virginia; ³Urology of Virginia, Virginia Beach, Virginia
Presented By: Matthew A. Nielsen, MD

Poster #NM126
PAIN RELIEVED BY VOIDING: A DISTINCT CLINICAL PHENOTYPE?
Casey G Kowalik MD, Sophia Delpe MD, Rachel Sosland MD, Melissa R Kaufman MD, PhD, Roger R Dmochoski MD and W. Stuart Reynolds MD, MPH
Nashville, TN
Presented By: Casey Kowalik, MD

Poster #NM127
DEFINITION OF RECURRENT URINARY TRACT INFECTIONS IN WOMEN: WHICH ONE TO ADOPT?
Rena Malik MD, Yuefeng Wu BS and Philippe Zimmer MD
UT Southwestern Medical Center, Dallas, TX
Presented By: Rena D. Malik, MD

Poster #NM128
RECURRENT URINARY TRACT INFECTION REFERRALS – DO PATIENTS TRULY HAVE RECURRENT INFECTIONS?
Rosa Park MD¹ and Marisa Clifton MD²
¹Hershey; ²Danville, PA
Presented By: Rosa Park, MD

Poster #NM129
WOMEN WITH UROLOGIC CHRONIC PELVIC PAIN SYNDROME (UCPPS) PRESENT WITH MORE SYSTEMIC PAIN OUTSIDE THE PELVIS, SEXUAL PAIN, AND MORE INTENSE PELVIC PAIN AND UROLOGIC SYMPTOMS COMPARED WITH MEN WITH UCPPS
H Henry Lai MD¹, Frederick Moh BS² and Joel Vetter MS³
¹Washington University School of Medicine; ²St Louis, MO
Presented By: H.Henry Lai, MD
Poster #NM130  PATIENTS WITH UROLOGIC CHRONIC PELVIC PAIN SYNDROME (UCPPS) WHO ARE YOUNGER PRESENT WITH MORE INTENSE PELVIC PAIN AND SYSTEMIC PAIN
H Henry Lai MD¹, Frederick Moh BS² and Joel Vetter MS²
¹Washington University School of Medicine; ²Washington University School of Medicine, St Louis, MO
Presented By: H.Henry Lai, MD
Video Session II  
Saturday, March 3, 2018  
7:00 a.m. – 8:00 a.m.

Moderators:  
Jason P. Gilleran, MD  
Yahir Santiago-Lastra, MD

**Video #7**  
**AUTOLOGOUS RECTUS FASCIA SLING PLACEMENT IN THE MANAGEMENT OF FEMALE STRESS INCONTINENCE**  
Adam Miller MD¹, Brian Linder MD² and Deborah Lightner MD²  
¹Mayo Clinic; ²Mayo Clinic, Rochester, MN  
Presented By: Adam R. Miller, MD

**Video #8**  
**AUTOLOGOUS FASCIA LATA HARVEST**  
Victoria C.S. Scott MD, Victoria C.S. Scott MD, My-Linh Nguyen MD, My-Linh Nguyen MD, Ja-Hong Kim MD, Shlomo Raz MD and Shlomo Raz MD  
Los Angeles, CA  
Presented By: Victoria C. Scott, MD

**Video #9**  
**MACROPLASTIQUE INJECTION IN WOMEN AND MEN**  
Philippe Zimmern MD  
UT Southwestern Medical Center  
Presented By: Philippe E. Zimmern, MD, FACS, FPMRS

**Video #10**  
**AUTOLOGOUS FASCIA LATA SPIRAL SLING ANAL SPHINCTEROPLASTY**  
Victoria C.S. Scott MD, Victoria C.S. Scott MD, My-Linh Nguyen MD, My-Linh Nguyen MD, Shlomo Raz MD, Ja-Hong Kim MD and Shlomo Raz MD  
Los Angeles, CA  
Presented By: Victoria C. Scott, MD

**Video #11**  
**REMOVAL OF LARGE DIVERTICULAR CALCULI AND REPAIR OF FEMALE URETHRAL DIVERTICULUM (UD)**  
Juan M. Guzman-Negron MD and Howard B. Goldman MD  
Cleveland Clinic, Cleveland, Ohio  
Presented By: Juan Guzman-Negron, MD

**Video #12**  
**ROBOTIC BLADDER OUTLET CLOSURE IN MALE PATIENTS WITH SCI**  
Ali Syed MD, James Mark MD, Thomas Hardacker MD, Mihir Shah MD, Akhil Das MD, Alana Murphy MD and Patrick Shenot MD  
Thomas Jefferson University Hospital  
Presented By: Ali Syed, MD
Female Urology/Incontinence Moderated Podium Session
Saturday, March 3, 2018
8:00 a.m. – 9:30 a.m.

Moderators: Michael E. Albo, MD
Jennifer T. Anger, MD, MPH, FPMRS

8:00 a.m. #33 RANDOMIZED CONTROLLED TRIAL OF GROUP-ADMINISTERED BEHAVIORAL TREATMENT IN REDUCING URINARY INCONTINENCE IN ADULT WOMEN
Diane Newman DNP, ANP-BC¹, Ananias Diokno MD², Lisa Low PhD RN³, Tomas Griebling MD⁴, Michael Maddens MD⁵, Leslee Subak MD⁶, Patricia Goode MD⁷, Carolyn Sampselle PhD⁸, Ann Robinson RN⁹, Trevilllore Raghunathan PhD⁴, Judy Boura MS⁷, Donna McIntyre MS⁸, Alesandra Magno BS⁴ and Hanna Stambakio BS⁸
¹Division of Urology, University of Pennsylvania; ²Oakland University, Royal Oak, MI; ³University of Alabama, Birmingham, AL; ⁴University of Michigan, Ann Arbor, MI; ⁵University of Kansas, Kansas City, KS; ⁶Stanford Univ, Palo Alto, CA; ⁷Beaumont Hosp, Royal Oak, MI; ⁸Urology, University of Pennsylvania, Phila, PA
Presented By: Diane Newman, DNP

8:10 a.m. #34 VIBEGRON, A NOVEL ONCE DAILY ORAL BETA-3 AGONIST, SIGNIFICANTLY REDUCES AVERAGE DAILY MICTURITIONS, URGE INCONTINENCE EPISODES AND URGENCY EPISODES IN PATIENTS WITH OVERACTIVE BLADDER
David Mitcheson MD¹, Tara Frenkl MD², Suvajit Samanta PhD², Cathy Anne Pinto PhD², Stuart Green MD², Nate Bennett PhD³ and Paul Mudd Pharm D, MBA³
¹Bay State Clinical Trials; ²Merck & Co., Inc., Kenilworth, NJ; ³Roivant Sciences, Inc. on behalf of Urovant Sciences, Inc., a wholly-owned member of the Roivant family of companies, New York, NY.
Presented By: H. David Mitcheson, MD

8:20 a.m. #35 ASSESSMENT OF INNERVATION SYMMETRY OF EXTERNAL ANAL SPHINCTER IN YOUNG AND ELDERLY FEMALES USING HIGH-DENSITY SURFACE ELECTROMYOGRAPHY RECORDINGS
Nicholas Dias BS¹, Xuhong Li MD, PhD²,³, Chuan Zhang MS¹, Jinbao He PhD² and Yingchun Zhang PhD¹
¹Department of Biomedical Engineering, University of Houston, Houston, TX; ²The Third Xiangya Hospital; ³Central South University, Changsha, China; ⁴School of Electronic and Information Engineering, Ningbo University of Technology, Ningbo, China
Presented By: Yingchun Zhang, PhD

8:30 a.m. #36 SURGICALLY INDUCED WEIGHT LOSS RESULTS IN A RAPID AND CONSISTENT IMPROVEMENT OF FEMALE PELVIC FLOOR SYMPTOMS
Asnat Groutz MD¹, Avner Leshem MD¹, Hadar Amir MD¹, David Gordon MD¹ and Mordechai Shimonov MD²
¹Tel Aviv Medical Center, Tel Aviv, Israel; ²Wolfson Medical Center, Holon, Israel
Presented By: Asnat Groutz, MD

8:40 a.m. #37 IS PROPHYLACTIC STRESS INCONTINENCE SURGERY NECESSARY AT THE TIME OF PELVIC ORGAN PROLAPSE REPAIR? - RATES OF FUTURE SURGERY IN A LARGE POPULATION BASED COHORT IN CALIFORNIA
Raveen Syan MD¹, Kai Dallas MD², Ericka Sohlberg MD², Lisa Rogo-Gupta MD¹, Christopher Elliott MD¹ and Ekene Enemchukwu MD¹
¹Stanford, CA; ²Stanford Urology
Presented By: Raveen Syan, MD

8:50 a.m. #38 THE PREVALENCE OF PELVIC FLOOR DISORDERS IN ACTIVE DUTY FEMALE SOLDIERS: DATA FROM THE STANFORD MILITARY DATA REPOSITORY
Lisa Rogo-Gupta MD, D. Alan Nelson MPAS PhD, Nichole Young-Lin MD, Jonathan Shaw MD and Lianne Kurina PhD
Stanford University, Stanford, CA
Presented By: Lisa Rogo-Gupta, MD
9:00 a.m.  #39  NONINVASIVE MOTOR UNIT NUMBER ESTIMATION OF THE PUBORECTALIS MUSCLE IN FEMALES
Nicholas Dias BS¹, Charles Popney DO², Jinbao He PhD³ and Yingchun Zhang PhD¹
¹Department of Biomedical Engineering, University of Houston, Houston, TX; ²Fort Bend Neurology, Sugar Land, TX; ³School of Electronic and Information Engineering, Ningbo University of Technology, Ningbo, China
Presented By: Yingchun Zhang, PhD

9:10 a.m.  #40  DO PATIENTS DISCONTINUE OVERACTIVE BLADDER MEDICATIONS AFTER SACRAL NEUROMODULATION?
Katherine Amin MD, Dena Moskowitz MD, Kathleen Kobashi MD, Una Lee MD and Alvaro Lucioni MD
Virginia Mason Medical Center, Department of Urology, Seattle, WA
Presented By: Katherine Amin, MD

9:20 a.m.  #41  ORAL ENOBOSARM SHOWS PROMISING ACTIVITY IN POST-MENOPAUSAL WOMEN WITH STRESS URINARY INCONTINENCE: RESULTS OF A PHASE 2 STUDY
Kenneth M. Peters MD¹, Diane Newman DNP², Laurence Belkoff DO³, Kiran Nandalur MD¹, Mary Ann Johnston PharmD⁴, Susan Small RPh⁴, Ryan Taylor PhD⁴ and Larry Sirls MD¹
¹Oakland University William Beaumont School of Medicine Royal Oak, MI; ²University of Pennsylvania, Philadelphia, PA; ³Urological Consultants of SEPA, Bala Cynwyd, PA; ⁴GTx, Inc., Memphis, TN
Presented By: Kenneth M. Peters, MD
LUTS/Voiding Dysfunction/Neurogenic Bladder Moderated Podium Session
Saturday, March 3, 2018
8:00 a.m. – 9:30 a.m.
Moderators: Arthur P. Mourtzinos, MD, MBA
John T. Stoffel, MD

8:00 a.m.  #42  THE DISTRIBUTION OF POST-VOID RESIDUAL VOLUMES (PVR) IN PEOPLE SEEKING CARE: AN ANALYSIS OF 880 PARTICIPANTS OF THE SYMPTOMS OF LOWER URINARY TRACT DYSFUNCTION NETWORK (LURN) OBSERVATIONAL COHORT STUDY
Matthew O. Fraser PhD¹, Abigail R. Smith PhD², Claire C. Yang MD³, John O.L. DeLancey MD⁴, Brenda W. Gillespie PhD⁵, John L. Gore MD, MS⁶, Pooja Talaty MS, MHA⁷, Victor P. Andreev Phd, DSc⁸, Anca Stefan PhD⁹, Karl J. Kreder MD, MBA⁹, Margaret G. Mueller MD⁹, H. Henry Lai MD³, Bradley A. Erickson MD, MS, FACSF¹, Ziya Kirkali MD and Andrew C. Peterson, and the LURN Study Group MD
¹Duke University, Durham, NC; ²Arbor Research Collaborative for Health, Ann Arbor, MI; ³University of Washington, Seattle, WA; ⁴University of Michigan, Ann Arbor, MI; ⁵NorthShore University Health System, Chicago, IL; ⁶University of Iowa, Iowa City, IA; ⁷Northwestern University, Chicago, IL; ⁸Washington University School of Medicine, St. Louis, MO; ⁹National Institute of Diabetes and Digestive and Kidney Diseases, Bethesda, MD
Presented By: Matthew O. Fraser, PhD

8:10 a.m.  #43  NO INCREASED RISK OF CLEAN INTERMITTENT CATHETERIZATION WITH ONABOTULINUMTOXINA RETREATMENT: POOLED ANALYSIS OF RANDOMIZED CONTROLLED TRIALS
Gary Lemack ¹, Eric Rovner ², Kurt McCammon ³, Francisco Cruz ⁴, Rizwan Hamid ⁵, Sidney Radomski ⁶, Amelia Orejudos ⁷, Tamer Aboushwareb ⁷ and Jennifer Sobol ⁸
¹University of Texas Southwestern Medical Center, Dallas, TX, USA; ²Medical University of South Carolina, Charleston, SC, USA; ³Eastern Virginia Medical School, Norfolk, VA, USA; ⁴Hospital S. João & Universidade Do Porto, Porto, Portugal; ⁵University College London Hospitals, London, UK; ⁶University of Toronto, Toronto, Canada; ⁷Allergan plc, Irvine, CA, USA; ⁸Michigan Institute of Urology, West Bloomfield, MI, USA
Presented By: Gary Evan Lemack, MD

8:20 a.m.  #44  RELATIONSHIPS BETWEEN METABOLIC FACTORS, URINARY INCONTINENCE AND OVERACTIVE BLADDER SYMPTOMS AMONG MEN AND WOMEN IN THE LURN OBSERVATIONAL COHORT STUDY
H. Henry Lai MD¹, Margaret E. Helmuth MA², Abigail R. Smith PhD², Brenda W. Gillespie PhD³ and Ziya Kirkali MD, and the LURN Study Group⁴
¹Washington University School of Medicine, St. Louis, MO; ²Arbor Research Collaborative for Health, Ann Arbor, MI; ³University of Michigan, Ann Arbor, MI; ⁴National Institute of Diabetes and Digestive and Kidney Diseases, Bethesda, MD
Presented By: H. Henry Lai, MD

8:30 a.m.  #45  SUPRASPINAL CONTROL VARIATIIONS IN MULTIPLE SCLEROSIS PATIENTS WHO VOID SPONTANEOUSLY VERUS PATIENTS WITH VOIDING DYSFUNCTION
Rose Khavari MD, Christof Karmonik PhD and Timothy Boone MD, PhD
Houston, TX
Presented By: Rose Khavari, MD

8:40 a.m.  #46  CHANGES IN BRAIN ACTIVITY FOLLOWING INTRADETRUSOR INJECTION OF ONABOTULINUMTOXINA IN PATIENTS WITH MULTIPLE SCLEROSIS: AN FMRI STUDY
Rose Khavari MD, Christof Karmonik PhD, Katherine Wu, Saba Elias Msc and Timothy Boone MD, PhD
Houston, TX
Presented By: Rose Khavari, MD
8:50 a.m.  #47  THE EFFECTS OF AUGMENTATION CYSTOPLASTY AND BOTULINUM TOXIN USE ON PATIENT REPORTED BLADDER FUNCTION AND SATISFACTION AMONG INDIVIDUALS WITH SPINAL CORD INJURY PERFORMING INTERMITTENT CATHETERIZATION
Jeremy Myers MD¹, Sara Lennherr MD, MS², John Stoffel MD³, Sean Elliott MD, MS⁴, Angela Presson MD, MS⁵, Chong Zhang MS⁶, Darshan Patel MD⁷, Amitabha Jha MD, MPH⁸, Jeffrey Rosenbluth MD⁹ and Blayne Welk MD, MSc¹⁰
¹University of Utah; ²University of Utah, Salt Lake City, UT; ³University of Michigan, Ann Arbor, MI; ⁴University of Minnesota, Minneapolis, MN; ⁵University of Utah, Salt Lake City, UT; ⁶Western University, London, Ontario, CAN
Presented By: Jeremy B Myers, MD, FACS

9:00 a.m.  #48  VOLITIONAL VOIDING OF THE BLADDER AFTER SPINAL CORD INJURY: VALIDATION OF BILATERAL LOWER EXTREMITY MOTOR FUNCTION AS A KEY PREDICTOR
Christopher Elliott MD, PhD¹, Kai Dallas MD², Dimitar Zlatev MD², Craig Comiter MD², James Crew MD³ and Kazuko Shem MD³
¹Santa Clara Valley Medical Center Division of Urology AND Stanford University Medical Center, Department of Urology, San Jose, CA; ²Stanford University Medical Center Dept of Urology, Stanford, CA; ³Santa Clara Valley Medical Center, Department of Physical Medicine and Rehabilitation, San Jose, CA
Presented By: Christopher Stephen Elliott, MD, PhD

9:10 a.m.  #49  INTERACTIVE TELEMEDICINE PLATFORM FOR MANAGEMENT OF NEUROGENIC BLADDER AND URINARY TRACT INFECTION PREVENTION FOR INDIVIDUALS WITH TRAUMATIC AND NON-TRAUMATIC SPINAL CORD INJURY
Lynn Stothers MD, MHSc¹, Emily Deegan BA, BScN, RN², Babak Shadgan MD, MSc, PhD³, Andrew Macnab MD (London), FRCP, FRCPCH, FCAHS⁴, Alex Kavanagh BSc, MD (Calg), FRSC, MPH (Harvard)⁵ and Mark Nigro BSc, MD (Alta), FRSC⁶
(Presented by: Lynn Stothers)
Presented By: M. Lynn Stothers, MD

9:20 a.m.  #50  PATIENT REPORTED BLADDER FUNCTION AND SATISFACTION AMONG TETRAPLEGIC PATIENTS WITH DIFFERENT BLADDER MANAGEMENT STRATEGIES
Jeremy Myers MD¹, Sara Lennherr MD, MS², John Stoffel MD³, Sean Elliott MD, MS⁴, Angela Presson PhD, MS⁵, Chong Zhang MS⁶, Darshan Patel MD⁷, Amitabha Jha MD, MPH⁸, Jeffrey Rosenbluth MD⁹ and Blayne Welk MD, MSc¹⁰
¹University of Utah; ²University of Utah, Salt Lake City, UT; ³University of Michigan, Ann Arbor, MI; ⁴University of Minnesota, Minneapolis, MN; ⁵Western University, London, Ontario, CAN
Presented By: Jeremy B Myers, MD, FACS
WHERE DO WOMEN GO FOR REPEAT PELVIC ORGAN PROLAPSE SURGERY? GEOGRAPHIC MIGRATION PATTERNS IN CALIFORNIA AFTER NATIVE TISSUE AND MESH AUGMENTED REPAIRS
Kai Dallas MD¹, Lisa Rogo-Gupta MD² and Chris Elliott MD²
¹Stanford Urology; ²Stanford, Palo Alto, CA
Presented By: Kai B. Dallas, MD

DOES SURGERY IMPROVE BOWEL FUNCTION IN PELVIC ORGAN PROLAPSE?
Esther Han DO, Laura Nguyen MD, Jason Gillerman MD, Jamie Bartley DO, Kim Killinger MSN, Judith Bora MS and Larry Sirls MD
Beaumont Health, Royal Oak, MI
Presented By: Esther Han, DO

WITHDRAWN

QUALITY OF LIFE OUTCOMES AFTER ROBOTIC SACROCOLOPEXY FOR THE MANAGEMENT OF PELVIC ORGAN PROLAPSE
Annah Vollstedt MD¹, Paholo Barboglio MD, MPH², William Meeks MS³ and Veronica Triaca MD⁴,⁵
¹Dartmouth-Hitchcock Medical Center; ²University of Michigan, Ann Arbor, MI; ³Department of Data Management & Statistical Analysis, American Urological Association, Linthicum, MD; ⁴Concord Hospital Center for Urologic Care, Concord, NH; ⁵Clinical Associate Professor of Surgery, Geisel School of Medicine at Dartmouth, Lebanon, NH
Presented By: Annah Vollstedt, MD

MESHING AROUND: LONG-TERM OUTCOMES FOLLOWING VAGINAL RECONSTRUCTIVE SURGERY WITH SYNTHETIC MESH AUGMENTATION
Margaret Knoedler MD, Hayley Barnes MD, Elizabeth Meller BS, Caroline Kieserman-Shmokler MD, Dobie Giles MD, MS, Christine Heisler MD, MS, Heidi Brown MD, MAS and Sarah Mcachran MD
Madison, WI
Presented By: Margaret Knoedler, MD

THE OUTCOMES OF URETHROVAGINAL FISTULA REPAIR
Rachel Barratt MB ChB¹, Stephanie Kotes MD FEBU¹, Mahreen Pakzad MD, FRCS , MB ChB¹, Rizwan Hamid MSc, FRCS , MB ChB¹, Jeremy Ockrim MD, FRCS , MB ChB¹ and Tamsin Greenwell MD, FRCS , MB ChB¹
¹UCLH Urology; ²UCLH Urology, UCLH, London UK; ³UCLH Urology, UCLH, London, UK
(Presented by: Rachel Barratt)
Presented By: Rachel Barratt, BMBS , MRCS

ILEAL CONDUIT RECONSTRUCTION IN PATIENTS WITH STOMAL STENOSIS OR RETRACTION USING A NEW SEGMENT OF ILEUM
Ali Syed MD, Mhir Shah MD, Alana Murphy MD, Akhil Das MD and Patrick Shenot MD
Thomas Jefferson University Hospital
Presented By: Ali Syed, MD

DEVELOPMENT, VALIDATION, AND RESULTS OF A NOVEL INVENTORY TO ASSESS CHANGE IN GENDER DYSPHORIA AFTER GENDER AFFIRMING SURGERY
Maurice Garcia MD, MAS¹ and Dan Karasic MD²
¹Cedars Sinai Medical Center; ²UCSF
Presented By: Maurice Garcia, MD, MAS
Poster #M42  INCREASING THE RATE OF VAGINAL REPAIR OF VESICOVAGINAL FISTULAE DOES NOT AFFECT OUTCOME.
Sarah Itam MD, FRCS, MB ChB¹, Rachel Barratt MB ChB², Mahreen Pakzad MD, FRCS, MB ChB³, Rizwan Hamid MS, FRCS, MB ChB⁴, Jeremy Ockrim MD, FRCS, MB ChB⁴, Julian Shah MSc, FRCS, MB ChB⁴ and Tamsin Greenwell MD, FRCS, MB ChB⁴
¹UCLH Urology; ²UCLH Urology, UCLH, London UK; ³UCLH Urology, UCLH, London, UK
(Presented by: Sarah Itam)
Presented By: Sarah Itam, MEd  FRCS(Urol) MBBS

Poster #M43  CAUSES OF ARTIFICIAL URINARY SPHINCTER FAILURE AND STRATEGIES FOR SURGICAL REVISION: IMPLICATIONS OF DEVICE COMPONENT SURVIVAL
Arnav Srivastava BA, MPH, Gregory Joice MD, Hiten Patel MD, MPH, Madeleine Manka MD, Nikolai Sopko MD, PhD and Edward Wright MD
Johns Hopkins Hospital, Baltimore, MD
Presented By: Arnav Srivastava, B.A., M.P.H.
**ABSTRACT LISTING**

*Pelvic Organ Prolapse/Reconstruction Non-Moderated Poster Session
*Not CME Accredited Saturday, March 3, 2018
8:00 a.m. – 9:30 a.m.

**Poster #NM131**

**OBESITY DOES NOT INCREASE RISK OF PROLAPSE RECURRENCE FOLLOWING SACRAL COLPOPEXY**

CR Powell MD¹, Isamu Tachibana MD², Bridget Eckrich BS³, Jeffrey Rothenberg MD³ and Thomas Gardner MD³

¹Indiana University School of Medicine Department of Urology; ²Indiana, IN; ³Indianapolis, IN

Presented By: Charles R. Powell, II, MD

**Poster #NM132**

**PAIN IN SURGICAL VERSUS NONSURGICAL PATIENTS WITH PELVIC ORGAN PROLAPSE**

Esther Han DO, Laura Nguyen MD, Jason Gilligan MD, Jamie Bartley DO, Kim Killinger MSN, Kenneth Peters MD, Judith Boura MS and Larry Sirls MD

Beaumont Health, Royal Oak, MI

Presented By: Esther Han, DO

**Poster #NM133**

**PATIENT SATISFACTION AND QUALITY OF LIFE AFTER ROBOTIC SACROCOLPOPEXY FOR PELVIC ORGAN PROLAPSE.**

Nimesh Patel BSc¹, Kim Killinger MSN³, Kanika Thapar BSc¹, Patrick Karabon MS¹ and Pradeep Nagaraju MD³

¹Oakland University William Beaumont School of Medicine, Auburn Hills, MI; ³William Beaumont Hospital, Royal Oak, MI

Presented By: Nimesh Patel, BSc (Hons)

**Poster #NM134**

**COMPARING TWO VOIDING TRIALS AFTER PELVIC ORGAN PROLAPSE RECONSTRUCTION: A RANDOMIZED CONTROLLED TRIAL**

Marjorie Pilkinton MD¹, Kathryn Williams MD¹, Cristina Sison PhD¹, Dara Shalom MD² and Harvey Winkler MD¹

¹Northwell Health, Division of Urogynecology, Great Neck, NY; ²Biostatistics Unit, Feinstein Institute for Medical Research at Northwell Health System, Manhasset NY

Presented By: Marjorie Pilkinton, MD

**Poster #NM135**

**ROBOTIC SACROCOLPOPEXY: ADVERSE EVENTS REPORTED TO THE FDA OVER THE LAST DECADE**

Colby P. Souders MD¹, Hanson Zhao MD¹, Farnoosh Nik-Ahd BA², Bilal Chughtai MD³ and Jennifer T. Anger MD MPH¹

¹Cedars-Sinai Medical Center, Los Angeles CA; ²University of California, Los Angeles; ³Weill Cornell Medical Center

Presented By: Colby Perkins Souders, MD

**Poster #NM136**

**RATES OF CONCURRENT ADNEXAL SURGERY AT THE TIME OF VAGINAL HYSTERECTOMY**

Dominique Malacarne MD, Nancy Ringel MD and Kimberly Ferrante MD

NYU, New York, NY

Presented By: Nancy Ringel, MD

**Poster #NM137**

**A NEW CLINICAL DIAGNOSTIC TEST DEMONSTRATING UPSTAGING AND CHANGES IN ANATOMY IN PELVIC ORGAN PROLAPSE; DEFECTS DEMONSTRATED THROUGH 3D PELVIC RECONSTRUCTION AND CHANGES IN PELVIC REFERENCE LINES USING STANDING OPEN MRI**

Jennifer Locke MD, PhD¹, Alex Kavanagh MD, MSc¹, Andrew MacNab MD¹ and Lynn Stothers MD²

¹Vancouver, BC; ²Vancouver, BC

Presented By: Jennifer A. Locke, MD, PhD
Poster #NM138

TITLE: TRENDS IN PELVIC ORGAN PROLAPSE REPAIR: DIFFERENCES IN PELVIC ORGAN PROLAPSE REPAIR APPROACH BY SPECIALTY BEFORE AND AFTER THE FDA MESH WARNING

Christina Escobar MD¹, Dominique Malacarne MD² and Kimberly Ferrante MD, MAS, FACOG³

¹New York University, NY, NY; ²New York University, Obstetrics and Gynecology, NY, NY

Presented By: Christina Escobar, MD

Poster #NM139

USE OF AUTOLOGOUS VASTUS LATERALIS FASCIA FOR REPAIR OF RECURRENT CYSTOCELE

Andrew Medendorp MD, Lauren Wood MD, Victoria Scott MD, My-Linh Nguyen MD, Zachary Baxter MD, Shlomo Raz MD and Ja-Hong Kim MD

University of California, Los Angeles

Presented By: Andrew Robert Medendorp, MD

Poster #NM140

ROLE OF Hysterectomy AT THE TIME OF NATIVE PELVIC ORGAN PROLAPSE (POP) REPAIR

Bilal Chughtai MD¹, Dominique Thomas BS², Jialin Mao MD, MSc³, Tirsit Asfaw MD³ and Art Sedrakyan MD, PhD³

¹Weill Cornell Medicine, New York, NY; ²Weill Cornell Medicine, New York, New York; ³Weill Medicine, New York, NY

Presented By: Dominique Dana Marie Thomas, BS

Poster #NM141

IS VAGINAL VAULT PROLAPSE RECURRENCE AFFECTED BY USING ABSORBABLE SUTURE FOR SACRAL MESH ATTACHMENT DURING ROBOTIC ASSISTED SACROCOPPEXY?

Juan M. Guzman-Negron MD¹, Shree Agrawal BS², Jessica C. Lloyd MD¹, Patricia M. Zahner MD¹, Laura L. Giusto MD¹ and Howard B. Goldman MD¹

¹Cleveland Clinic, Cleveland, Ohio; ²Case Western Reserve University School of Medicine, Cleveland, Ohio

Presented By: Juan Guzman-Negron, MD

Poster #NM142

INFLUENCE OF OBSERVATION, SURGICAL APPROACH, AND CONCURRENT HYSTERECTOMY ON PROLAPSE AND URINARY SYMPTOMS

Esther Han DO, Laura Nguyen MD, Jason Gilleran MD, Jamie Bartley DO, Kim Killinger MSN, Judith Boura MS and Larry Sirls MD

Beaumont Health, Royal Oak, MI

Presented By: Esther Han, DO

Poster #NM143

RELATIONSHIP BETWEEN PELVIC ORGAN PROLAPSE AND METABOLIC SYNDROME

Solafa Elshatanoufy PharmD MD¹, Humphrey Atiemo MD², David Richardson MD³ and Ali Luck MD³

¹Henry Ford Health systems. Detroit, Michigan; ²Henry Ford Health Systems; ³Henry Ford Health System, Detroit, Michigan

Presented By: Solafa Elshatanoufy, PharmD, MD

Poster #NM144

ANTERIOR ENTEROCELE ON MR DEFECOGRAPHY AS AN ETIOLOGY FOR ANTERIOR VAGINAL BULGE

Muhammad Aziz, Gaurav Khatri MD, Deborah Hess MD and Philippe Zimmern MD

UT Southwestern Medical Center

Presented By: Muhammad Aziz, MD

Poster #NM145

PELVIC ORGAN PROLAPSE REPAIR AFTER RADICAL CYSTECTOMY

Andrew Medendorp MD and Christopher Tamay MD

University of California, Los Angeles

Presented By: Andrew Robert Medendorp, MD

Poster #NM146

ABDOMINAL MESH SACROCOPPEXY WITHOUT PROMONTORY FIXATION- THE PERITONEOCOPPEXY TECHNIQUE

Philippe Zimmern MD

UT Southwestern Medical Center

Presented By: Philippe E. Zimmern, MD, FACS, FPMRS
Poster #NM147  AUTOLOGOUS RECTUS FASCIA PELVIC ORGAN PROLAPSE REPAIR: A MESH FREE SOLUTION FOR POP?
Jai Seth, Bogdan Toia, Hazel Ecclestone, Mahreen Pakzad, Rizwan Hamid, Tamsin Greenwell and Jeremy Ockrim
Presented By: Jai Seth, FRCS

Poster #NM148  IMPACT OF ADJUVANT RADIATION ON ARTIFICIAL URINARY SPHINCTER DURABILITY IN POST-PROSTATECTOMY PATIENTS
Arnav Srivastava BA, MPH, Gregory Joice MD, Hiten Patel MD, MPH, Madeleine Manka MD, Nikolai Sopko MD, PhD and Edward Wright MD
Johns Hopkins Hospital, Baltimore, MD
Presented By: Arnav Srivastava, B.A., M.P.H.

Poster #NM149  ROBOTIC-ASSISTED LAPAROSCOPIC SURGERY FOR ICS/IUGA CATEGORY 4 COMPLICATIONS OF GENITOURINARY PROSTHESIS AND GRAFT: A SINGLE-CENTER EXPERIENCE
Jason Warncke MD, Michael Avallone MD and Brian Flynn MD
University of Colorado, Aurora, Colorado
Presented By: Jason Warncke, MD

Poster #NM150  OUTCOMES OF RECONSTRUCTIVE UROLOGICAL SURGERY IN RADIOTHERAPY PATIENTS
Bogdan Toia, Jai Seth, Hazel Ecclestone, Mahreen Pakzad, Rizwan Hamid, Tamsin Greenwell and Jeremy Ockrim
UCLH
Presented By: Bogdan Toia

Poster #NM151  NO INCREASED RISK OF CARCINOGENESIS WITH MESH-BASED HERNIA REPAIRS
Bilal Chughtai MD¹, Art Sedrakyan MD, PhD², Jialin Mao MD, MSc³, Dominique Thomas BS⁴, Karyn Eilber MD⁴, James Clemens MD, FACS, MSC⁴ and Jennifer Anger MD⁴
¹Weill Cornell Medicine, New York, NY; ²Weill Medicine, New York, NY; ³Weill Cornell Medicine, New York, New York; ⁴Cedars-Sinai Medical Center, Beverly Hills, CA; ⁵The University of Michigan Medical Center, Ann Arbor, MI
Presented By: Dominique Dana Marie Thomas, BS

Poster #NM152  ADVERSE EVENTS REPORTED WITH DA VINCI SURGICAL SYSTEMS OVER THE LAST DECADE
Hanson H Zhao MD¹, Colby P Perkins MD¹, Farnoosh Nik-Ahd², Bilal Chughtai MD³ and Jennifer T Anger MD, MPH¹
¹Cedars-Sinai Medical Center; ²UCLA David Geffen School of Medicine, Los Angeles CA; ³Weill Cornell Medical Center, New York City NY
Presented By: Hanson Hanqing Zhao, MD

Poster #NM153  BUCCAL MUCOSA GRAFT FOR FEMALE URETHRAL RECONSTRUCTION IS NOT ASSOCIATED WITH POST OPERATIVE URINARY INCONTINENCE
Angelo Gousse MD¹, Kushan Radadia MD² and Hari Tunuguntla MD²
¹Miami, FL; ²New Brunswick, NJ
Presented By: Angelo E. Gousse, MD

Poster #NM154  CONTINENCE AND PAIN OUTCOMES IN EIGHTY-ONE CONSECUTIVE URETHROLYSIS PATIENTS: A SINGLE CENTER EXPERIENCE
Kyle Rose MD, MS, Kassem Faraj MD, Carolan Alexandra MD, Aqsa Khan MD and Christopher Wolter MD
Mayo Clinic, Phoenix, AZ
Presented By: Kyle Matthew Rose
Poster #NM155

A NOVEL BIOADHESIVE WRAP FOR URETHROVESICAL ANASTOMOSIS REINFORCEMENT
Bradley Gill MD, MS¹, Andrew Baker ², Eric Klein MD¹ and D Geoffrey Vince PhD¹
¹Cleveland Clinic; ²Cleveland Clinic
Presented By: Bradley C. Gill, MD, MS

Poster #NM156

SIZE OF ARTIFICIAL URINARY SPHINCTER CUFF RELATIVE TO URETHRAL CIRCUMFERENCE AND ITS IMPLICATIONS FOR DEVICE EFFICACY OVER TIME
Arnav Srivastava BA, MPH, Gregory Joice MD, Hiten Patel MD, MPH, Madeleine Manka MD, Nikolai Sopko MD, PhD and Edward Wright MD
Johns Hopkins Hospital, Baltimore, MD
Presented By: Arnav Srivastava, B.A., M.P.H.

Poster #NM157

NON-CLINICAL BARRIERS TO CARE IN COMPLEX BENIGN UROLOGIC RECONSTRUCTION AT A QUATERNARY CARE CENTER
Rachel Sosland MD, Joshua Cohn MD, Niels Johnson MD, Casey Kowalik MD, Kelvin Moses MD, PhD, W. Stuart Reynolds MD, MPH, Doug Milam MD, Roger Dmochowski MD and Melissa R Kaufman MD, PhD
Nashville, TN
Presented By: Rachel Sosland, MD

Poster #NM158

A CROSS-SECTIONAL STUDY OF SEXUAL FUNCTION AND FERTILITY STATUS IN ADULTS WITH CONGENITAL GENITOURINARY ABNORMALITIES
Hannah McCloskey, Rose Khavari MD, Aaron Kaviani MD, Rashmi Pande Msc and Timothy Boone MD, PhD
Houston, TX
Presented By: Rose Khavari, MD

Poster #NM159

THE RATE OF PYOCYSTIS AND SUBSEQUENT NEED FOR REMNANT BLADDER CYSTECTOMY FOLLOWING ILEAL CONDUIT URINARY DIVERSION FOR BENIGN AETIOLOGY.
George Mankaryous MBBS¹, Rachel Barratt MB ChB², Mahreen Pakzad MD, FRCS , MB ChB³, Rizwan Hamid MSc, FRCS , MB ChB³, Jeremy Ockrim MD, FRCS , MB ChB³ and Tamsin Greenwell MD, FRCS , MB ChB³
¹UCLH Urology; ²UCLH Urology, UCLH, London, UK; ³UCLH Urology, UCLH, London, UK
(Presented by: George Mankaryous)
Presented By: George Mankaryous, MBBS

Poster #NM160

PREVALENCE OF URETHRAL STRicture IN STEVENS-JOHNSON SYNDROME AND TOXIC EPIDERMAL NECROLYSIS
Tyler Kern MD³, Daniel Artenstein MD³, Gil Weintraub MD³, Polina Reyblat MD³ and Christopher Tenggardjaja MD³
³Kaiser Los Angeles Medical Center Department of Urology, Los Angeles, CA; ³Massachusetts General Hospital Department of Dermatology, Boston, MA
Presented By: Tyler Kern, MD

Poster #NM161

EARLY VAGINOPLASTY EXPERIENCE WITHIN A MULTIDISCIPLINARY TEAM IN THE INTEGRATED HEALTHCARE SYSTEM
Virginia Li MD, Amanda Chi MD, Melissa Poh MD and Polina Reyblat MD
Kaiser Permanente, Los Angeles, CA
Presented By: Virginia Li, MD

Poster #NM162

BLANDY VAGINAL WALL INLAY FLAP IN THE SURGICAL MANAGEMENT OF FEMALE DISTAL URETHRAL STRicture DISEASE
Kyle Rose MD, MS and Christopher Wolter MD
Mayo Clinic, Phoenix, AZ
Presented By: Kyle Matthew Rose
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<td>Bilal Farhan MD¹, Tyler McGrath BSc² and Gamal Ghoniem MD FACS²</td>
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<td>Philippe Zimmerm MD, Craig Olson MD and Carlos Finsterbusch MD</td>
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BASIC SCIENCE PRIZE ESSAY

2018 Basic Science Prize Essay Award Recipient

Basic Science Essay Winner

AUTOMATED QUANTIFICATION OF LOW AMPLITUDE RHYTHMIC CONTRACTIONS (LARC) DURING URODYNAMICS: IDENTIFICATION OF A DETRUSOR OVERACTIVITY SUBGROUP?

Zachary Cullingsworth, BS1, Brooks Kelly, BS2, Nicholas Deebel, BS2, Andrew Colhoun, MD2, Anna Nagle, PhD3, Adam Klausner, MD2 and John Speich, PhD3

1Virginia Commonwealth University; 2Department of Surgery/Division of Urology, Virginia Commonwealth University, Richmond, Virginia; 3Department of Mechanical and Nuclear Engineering, Virginia Commonwealth University, Richmond, Virginia

Presented By: Zachary Cullingsworth, BS

Introduction: Low amplitude rhythmic contractions (LARC) of detrusor muscle may contribute to detrusor overactivity (DO) in some patients. The aim of this study was to develop an objective method to quantify LARC in urodynamics (UD) data and determine whether significant LARC correlated with a subgroup of patients with DO.

Methods: An automated Fast Fourier Transform (FFT) analysis algorithm was developed to analyze a 205-second region of interest (ROI) of UD data ending 30 seconds before voiding (Fig 1A). The algorithm then identifies three frequencies in the 1.75-6 cycle/minute range (Fig 1B, shaded region) associated with the largest rhythmic amplitude peaks in vesical pressure (Pves). Peak Pves amplitudes (Fig 1B, X symbols) were analyzed to determine whether any significant rhythmic activity was present in Pves and if that activity was independent of any rhythm in abdominal pressure (Pabd). This algorithm was used for an Institutional Review Board-approved retrospective analysis of 98 UD studies.

Results: During a blinded analysis, a neurourologist/urodynamicist identified 53/98 patients as having DO based on the UD pressure data. The FFT algorithm identified significant and independent (S&I) LARC in 19/53 patients with DO and 1/45 patients without DO, resulting in a specificity of 0.98, a sensitivity of 0.36 and a significant association (Fischer’s exact test, p<0.0001). The average slowest S&I LARC frequency was 2.81±0.22 cycles/min. Individual UD studies can be analyzed in under 5 seconds, allowing real-time interpretation.

Conclusion: Analysis of LARC during UD testing identified a subgroup of patients with DO with a distinct LARC frequency in Pves independent of Pabd. Refinements of this technique may identify subgroups of individuals with LARC–associated DO.

Fig 1. (A) Smoothed Pves and Pabd data from the time ROI. (B) FFT of Pves and Pabd from the ROI with the 1.75-6 cycles/min frequency range of interest shaded and three maximum Pves peaks (x) and corresponding Pabd amplitudes (o) identified. S&I indicates a significant Pves peak that is independent of Pabd at that frequency.

***2018 Basic Science Prize Essay Award Recipient
EXPRESSION AND FUNCTION OF HETEROMERIC KV7.4/KV7.5 CHANNELS IN HUMAN DETRUSOR SMOOTH MUSCLE

Aaron Provence, BSc1, John Malysz2, Damiano Angoli, MSc3, Eric Rovner, MD3 and Georgi Petkov, PhD2
1Department of Drug Discovery and Biomedical Sciences, South Carolina College of Pharmacy, University of South Carolina, Columbia, SC; 2Department of Pharmaceutical Sciences, College of Pharmacy, The University of Tennessee Health Science Center, Memphis, TN; 3Department of Urology, Medical University of South Carolina, Charleston, SC

Presented By: John Malysz, PhD

Introduction: Detrusor smooth muscle (DSM) facilitates urinary bladder function. Voltage-gated potassium channels (Kv) determine DSM excitability and contractility. Among all Kv channels, Kv7 subtypes have emerged as key regulators of DSM excitation-contraction coupling in guinea pigs, pigs, and rats. Recent studies from our laboratory suggest a role of heteromeric Kv7.4/Kv7.5 channels in guinea pig DSM function, but they are yet to be explored in human DSM.

Methods: DSM specimens were obtained from patients lacking symptoms of overactive bladder (OAB) undergoing open bladder surgeries. DSM whole tissue muscle strips (urothelium-free) and freshly-isolated single DSM cells were prepared and studied by RT-PCR, immunohistochemistry, immunocytochemistry, Western blot, Proximity Ligation Assay (PLA), DSM tissue contractility, and DSM whole-cell perforated patch-clamp electrophysiology.

Results: We found out that human DSM whole tissue and single smooth muscle cells expressed Kv7.4 and Kv7.5 mRNAs and proteins. In situ PLA demonstrated a high degree of spatial co-localization of Kv7.4 and Kv7.5 proteins in single DSM cells. Heteromeric Kv7.4/Kv7.5 complexes were highly expressed in the plasma membrane of DSM cells. In contrast, neither Kv7.4 nor Kv7.5 co-localized with inositol trisphosphate receptors (used as negative controls). Retigabine (Kv7.2-Kv7.5 channel activator) at 10 µM or ML213 (Kv7.4/Kv7.5 channel activator) at 10 µM reduced spontaneous phasic contractions of DSM tissue strips while XE991 (Kv7.1-Kv7.5 channel inhibitor) at 10 µM enhanced DSM contractility. Patch-clamp recordings in DSM cells revealed hyperpolarization induced by retigabine (10 µM) or ML213 (10 µM) and depolarization by XE991 (10 µM). Here for the first time, we recorded native human DSM Kv7 currents (using a ramp protocol) that were activated by retigabine (10 µM).

Conclusion: The close proximity of protein detections for both Kv7.4 and Kv7.5 subtypes in human DSM cells supports a role of native Kv7 channels composed of heteromeric Kv7.4/Kv7.5 channels whose activation leads to DSM hyperpolarization and attenuation of DSM contractility facilitating urine storage. Targeting heteromeric Kv7.4/Kv7.5 channels, displaying properties distinct from homomeric Kv7 channels, provides a potential novel therapeutic approach for the treatment of urinary bladder dysfunction including OAB and underactive bladder.

Funding: NIH R01DK106964 grant to GVP and F31DK104528 fellowship to AP.
OVEREXPRESSION OF ESTROGEN RECEPTOR β IN UROTHELIUM PROTECTS AGAINST UROPATHOGENIC E. COLI URINARY TRACT INFECTION

Judy Yeh, MD¹, Marian Acevedo, MD¹, Lery Alvarez, MS¹, Ming Lu, MD¹, Warren Hill, PhD² and Toby Chai, MD¹
¹Yale, New Haven, CT; ²Beth Israel Deaconess, Boston, MA

Presented By: Toby C. Chai, MD

Introduction: Host factors in female UTI defense include estrogen. A prior study showed that estrogen’s UTI protective effect on bladder urothelial cells grown in culture (in vitro experiments) was through ERβ and not ERα. We hypothesize that overexpression of urothelial ERβ in a transgenic mouse would show protection against UTI development (in vivo model).

Methods: A transgene containing a UPII promoter (urothelial restriction) linked to the ERβ gene was inserted into the C57BL6 mouse (WT) genome to create a urothelially restricted ERβ overexpressing mouse (uERβ-OE+). Female mice, 12 weeks old, were used derived from 3 cohort populations – WT, uERβ-OEneg (non-transgene carrying littermates) and uERβ-OE+. UTI was created by transurethral inoculation of uropathogenic E. coli (UPEC) at a dose of 1 x 10^8 colony forming units (CFU) in 50 µL under anesthesia using established protocol. Urine specimens were collected 1, 2, 3, and 4 days post UPEC inoculation and sampled on agar plates in serial dilution to quantitate bacterial load. After the last urine collection on Day 4, mice were euthanized, and their bladders and kidneys were harvested, homogenized, and plated for bacterial counts. Voiding spot assay (VSA) was performed to compare voiding behavior after UPEC inoculation.

Results: qPCR showed that ERβ mRNA was significantly elevated in the uERβ-OE+ urothelium. Bladder histology revealed no differences in the 3 cohorts. uERβ-OE+ mice (n=12) cleared urinary UPEC loads significantly more quickly than the 2 control cohorts (n=24) (Figure A, B). Transgenics also had significantly lower bacterial counts measured in bladders and kidneys (Figure C, D) on Day 4. Control animals voided significantly more on Day 1 after UPEC compared to prior to UPEC inoculation. uERβ-OE+ animals had no change in voiding behavior 1 day after UPEC inoculation.

Conclusion: This is the first demonstration in vivo that increased ERβ signaling on urothelial cells is protective against both lower and upper urinary tract infections. This uERβ-OE+ mouse model will serve as a valuable tool to identify novel pathways that might be harnessed in UTI treatments which leverage host defense responses activated by ERβ.
TRANSGENIC FEMALE MICE WITH ORNITHINE DECARBOXYLASE (ODC) OVER-EXPRESSION RESTRICTED TO UROTHELIUM EXHIBIT OAB VOIDING BEHAVIOR AND INCREASED URINARY CYTOKINES: A TRANSLATIONAL MURINE MODEL OF OAB

Judy Yeh, MD1, Lery Alvarez-Lugo, MS1, Ming Lu, MD1, Warren Hill, PhD2 and Toby Chai, MD1
1Yale, New Haven, CT; 2Beth Israel Deaconess, Boston, MA

Presented By: Toby C. Chai, MD

Introduction: Prior OAB animal models (e.g. cyclophosphamide, acetic acid, bladder obstruction, cerebral infarct, etc.) have lacked translational relevance to idiopathic female OAB. Because human urothelium from female subjects with idiopathic OAB was shown to have increased ornithine decarboxylase (ODC), we hypothesized that urothelial overexpression of ODC would create a novel and translationally relevant OAB animal model.

Methods: A transgene containing a UPII promoter (urothelial restriction) linked to the ODC gene was inserted into the C57BL6 mouse (WT) genome to create a urothelially restricted ODC overexpressing mouse (ODC+). Three cohorts of 12 week old female mice (ODC+, ODC- [non-transgene carrying siblings in litter] and WT) were used. qPCR for ODC from the urothelium and other tissues was performed. For voiding behavior study, 36 mice (12 in each cohort) were used. Voiding behavior was measured over 4 hours in the dark cycle and void spot assays (VSA) were performed per published method. Urine specimens were collected in animals (n=4 for each cohort) and analyzed with 32-plex murine cytokine ELISA.

Results: Urothelial qPCR showed 20x higher ODC mRNA expression in ODC+ compared to controls. H&E staining of bladder revealed unique intracellular inclusion bodies in umbrella cells in ODC+ animals. ODC+ animals voided significantly more frequently in each of 3 separate days of voiding behavior measurements (Fig. 1A, 1D) with significantly more spots in center of filter papers (Fig. 1B, 1E). The voided volume was not different between the 3 cohorts of animals (Fig. 1C, 1F). Urinary cytokine analyses revealed 6 of the 32 cytokines had a significant elevation in the ODC+ animals: G-CSF, IL-1α, IL-1β, KC (CXCL1), LIX (CXCL5) and VEGF (Fig. 2).

Conclusion: We created a translationally relevant OAB animal model. This ODC+ animal had OAB phenotype including increased voiding frequency and increased urinary cytokine expression of six cytokines. The ODC+ animal is a valuable and novel tool to study urothelial dysregulation contribution to OAB bladder behaviour phenotype and represents a beside to bench paradigm for studying OAB pathophysiology.
Basic Science Podium/Poster #BS4
FLOW STUDIES IN THE ISOLATED PERFUSED WORKING PIG BLADDER DEMONSTRATE PRESERVATION OF TISSUE OXYGENATION DESPITE DECREASING VASCULAR FLOW: POTENTIAL MECHANISMS OF UNDERACTIVE BLADDER
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Presented By: Uzoma Anele, MD
Introduction: Detrusor dysfunction, particularly underactivity is an increasingly recognized phenomenon; however, contributing underlying mechanisms are poorly understood partly due to the lack of appropriate functional models for adequate study. The role of vascular resistance in maintaining tissue oxygenation (TpO2) upon reductions in tissue perfusion in bladder remains to be determined. Therefore, we developed a model to investigate the dependencies of vascular perfusion pressure and TpO2 on perfusion flow in isolated pig bladder.
Methods: Bladders from local abattoirs were harvested and prepared. Vesical arteries were cannulated and perfused with a Krebs buffer. Intravesical pressure was measured via a cannulated ureter. After 1hr equilibration at perfusion flow of 20ml/min, the bladder was filled to 500mL via urethral catheter and re-equilibrated for 30min. Vascular resistance was assessed over a range of vascular flows by a stepwise decrease in flow rate by 5ml/min increments to 0ml/min and observed for 15-30min following each perturbation. Intravesical pressure, perfusion pressure, and TpO2 were recorded.
Results: Bladders from 11 pigs were studied. Perfusion pressure decreased linearly with decreasing flow rate (Fig1a n=11, p<0.01). Intravesical pressure also decreased with flow rate (Fig1b n=11, p<0.01). However, TpO2 remained stable (Fig1c n=7, p=0.24). The lack of change in vascular resistance was not due to absence of vascular reactivity in this model because perfusion pressure decreased or increased with intravascular nitroglycerin or phenylephrine (Fig1d n=2).
Conclusions. This suggests that autoregulation does not occur in bladder vasculature. However, maintenance of bladder TpO2 despite decreasing flow indicates involvement of an active, compensatory mechanism. Although responsibility to vasoactive agents suggests capacity for vascular tone regulation, vascular resistance was constant over flow ranges of 20-0ml/min, suggesting that isolated pig bladder maintains TpO2 by increased capillarity rather than vascular autoregulation. Further study is necessary to define these regulatory mechanisms which may help identify novel pathways involved in understanding or treating underactive bladder.
UNDERSTANDING THE PATHOGENS RESPONSIBLE FOR RECURRENT URINARY TRACT INFECTIONS IN POSTMENOPAUSAL WOMEN

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Presented By: Nicole De Nisco, BS, PhD

Introduction: Work with murine models has shown that uropathogenic Escherichia coli (UPEC) is able invade the bladder urothelium and form intracellular reservoirs, which are hypothesized to cause RUTI in humans (1). However, this hypothesis has not been tested in RUTI patients. To that intent, we analyzed a cohort of postmenopausal women undergoing cystoscopy with fulguration of trigonitis (CFT) for treatment of RUTI after multiple failed antibiotic courses (2).

Methods: Following IRB approval, bladder biopsies and urine were obtained from consenting women meeting study criteria for antibiotic-refractory RUTIs and with office-based evidence of chronic cystitis on flexible cystoscopy. All samples were obtained in the operating room under anesthesia following a rigorous protocol. Antibiotics were discontinued for at least one week prior to CFT. Tissue and urine samples were analyzed using both culture-based and molecular approaches to determine if intracellular bacterial reservoirs are present within the bladder urothelium. Our methods included aseptic microbial culture, 16S rRNA fluorescence in situ hybridization, 16S rRNA variable (v4) region Illumina deep sequencing, as well as basic molecular biology and histological techniques.

Results: Our preliminary studies of six post-menopausal RUTI patients with extensive cystitis cystica or pancystitis indicated that a variety of Gram-negative and Gram-positive bacteria were present inside the bladder urothelium. Strikingly, negative urine cultures at the time of CFT were noted in some patients despite positive bacterial tissue sample findings.

Conclusion: So far, we have found that diverse and unexpected bacterial species can invade the urothelium of severely infected post-menopausal RUTI patients. These intracellular bacterial reservoirs may explain the observed cycles of recurrence.


Financial Funding: This work was funded by the National Institutes of Health (NIH) grant R01-AI056404, the Welch Foundation grant I-1561, and Once Upon a Time.
STRESS-INDUCED BLADDER HYPERSENSITIVITY, HINDPAW ALLODYNIA, AND DEPRESSION-LIKE BEHAVIOR IN AN ANXIETY-PRONE STRAIN OF MICE

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Presented By: Julie A. Christianson, PhD

Introduction: Patients with chronic pelvic pain disorders commonly suffer from comorbid mood disorders, such as anxiety, panic disorder, and depression. This comorbidity has been associated with altered limbic regulation of the hypothalamic-pituitary-adrenal (HPA) axis, which initiates the stress response and influences the perception of pain. Exposure to stress can initiate and/or exacerbate symptomatology in these patients. To explore the mechanisms underlying stress-induced comorbidity between chronic pain and mood disorders, we are testing the hypothesis that chronic stress exposure can increase urogenital sensitivity, hindpaw allodynia, and anhedonic behaviors in a mouse strain with a genetic predisposition to anxiety.

Methods: Female, 12-week-old A/J mice were exposed to repeated foot shock stress, or sham exposure, for 10 continuous days and tested 1 or 28 days later for visceromotor response (VMR) during urinary bladder distension (UBD), hindpaw mechanical sensitivity, sucrose preference, nest building behavior, mast cell degranulation, and serum corticosterone (CORT) levels.

Results: Mice that underwent foot shock stress displayed a significant increase in VMR during UBD, compared to sham mice, only at the 1 day time point. At both time points, the foot shock group had significantly decreased mechanical withdrawal thresholds in the hind paw compared to their baseline and sham group measurements. Sucrose preference and nest construction tests revealed that anhedonic behavior was displayed immediately after foot shock exposure. Both sham and foot shock groups had histological evidence of very high rates (>80%) of mast cell degranulation. Finally, foot shock exposure induced a significant increase in serum CORT levels.

Conclusion: Ten days of foot shock stress induced acute bladder hypersensitivity, immediate and long-lasting hindpaw allodynia, anhedonic behavior, and increased serum CORT levels. Together, these data suggest that foot shock stress in A/J mice may provide a useful tool for understanding the connections between stress, mood disorder, and chronic pelvic pain. Future studies will investigate long-term changes in anhedonic behavior, gene expression within the limbic structures known to regulate the HPA axis, and potential interventional and pharmacological therapies in this novel preclinical model.

Supported by NIH grants DK099611, DK103872, and NS043314.
SUSTAINED INHIBITION OF BLADDER FUNCTION IS EVOKED BY SAPHENOUS NERVE STIMULATION: AN EVALUATION OF A CONTINUOUS URODYNAMIC MODEL IN ANESTHETIZED RATS

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Presented By: Paul Yoo, PhD

Introduction: As a potential new treatment for overactive bladder, we recently described a novel bladder-inhibitory reflex evoked by saphenous nerve stimulation in anesthetized rats. In this study, we sought to characterize the inhibitory effects of longer-duration SAFN stimulation using a continuous urodynamic model.

Methods: Non-survival experiments were conducted in 11 urethane-anesthetized rats. Following a midline incision, the bladder was catheterized and connected to a pressure transducer connected in series with an infusion pump. The bladder was continuously infused with saline (0.08 ml/min) until stable rhythmic bladder contractions were achieved. The SAFN was instrumented with a bipolar nerve cuff electrode. The stimulation amplitude was set at 25 uA, and 40-minute stimulation trials were applied at frequencies of 10 Hz and 20 Hz. The measured basal pressure (BP), inter-contraction interval (ICI) and contraction amplitude (CA) were analyzed during both the intra-stimulation and post-stimulation periods. Each variable was normalized to the baseline of each experiment.

Results: In response to SAFN stimulation at 10 Hz (n=7), a significant increase in BP (117.6 ± 7.5 %) occurred during the intra-stimulation period, while changes in CA (80.8 ± 7.4 %) and ICI (70.8 ± 17.2 %) were observed during the post-stimulation period. In 5 of 7 stimulation trials, we report episodes of bladder atonicity that lasted 33.0 ± 11.3 minutes. In response to 20 Hz SAFN stimulation (n=7), significant increases in BP (126.1 ± 13.3 %) and decreases in CA (79.9 ± 10.5 %) were observed, but the duration of bladder atonicity were markedly shorter (4.0 ± 1.2 min, 4 of 7 stimulation trials).

Conclusion: Our results show that the continuous urodynamic model can be used to measure the inhibitory effects of long-duration SAFN stimulation. During stimulation trials that resulted in bladder atonicity, we were able to measure increases in BP and decreases in the CA. With regards to eliciting an atonic bladder, further work is needed to clarify the effects of SAFN stimulation on voiding function. Financial support for this project was provided by University of Toronto Connaught Fund; Canada Foundation for Innovation; and Canadian Institutes of Health Research (CIHR).
Basic Science Podium/Poster #BS8
EXPRESSION PROFILING OF EXPERIMENTAL NEUROGENIC BLADDER REVEALS DECREASED BETA 3-AR EXPRESSION THAT CAN BE REVERSED BY INOSINE TREATMENT.
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Presented By: Bryan Sack, MD

Introduction: Neurogenic detrusor overactivity (NDO) is a devastating consequence of suprasacral spinal cord injury (SCI). Prior studies in our group revealed significant improvement in NDO in rats receiving chronic, systemic administration of the purine nucleoside inosine. However the molecular pathways underlying improvement are incompletely defined. The objective of this study was to use unbiased expression profiling to assess time-dependent transcriptional changes following SCI and to determine how expression of specific genes was altered by inosine.

Methods: RNAseq analysis was performed on full thickness bladder tissue from rats 2, 8 or 16 weeks after mid-thoracic spinal cord transection or from age-matched, non-injured controls. Differential gene expression and gene pattern clustering were performed using DESeq2 and DEGreport, respectively. In a separate cohort of animals, inosine was administered daily for 6 weeks by intraperitoneal injection. In each case, validation of gene expression changes was performed using real time RT-PCR.

Results: 207, 1355, and 2493 differentially expressed genes (DEGs) were identified at the 2, 8, and 16 week timepoints, respectively, with significant enrichment for gene ontology terms associated with cytoskeletal remodeling, synapse organization, axon guidance and neuromuscular junction activity. Among the significant DEGs, the beta 3- adrenergic receptor (β3-AR) was downregulated following SCI, whereas the M3 muscarinic receptor remained unchanged, suggesting a potential imbalance between sympathetic and parasympathetic responses. Notably, inosine treatment increased β3-AR levels in bladder tissue from SCI rats ~5-fold compared to vehicle-treated controls, and also increased β3-AR protein levels. In contrast, M3 mRNA levels were unaffected by inosine treatment.

Conclusion: Expression profiling of bladder tissue following SCI reveals perturbations in a variety of physiologically relevant gene clusters including those associated with innervation and cytoskeletal remodeling. Decreased β3-AR levels may reduce responses to sympathetic activity in the bladder leading to the development of NDO following SCI, whereas β3-AR levels can be reversed by treatment with inosine.

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Basic Science Podium/Poster #BS9

QUANTIFICATION OF BLADDER WALL MICROMOTION DURING URODYNAMICS IN A NOVEL ANESTHETIZED PIG MODEL WITH LOW AMPLITUDE RHYTHMIC CONTRACTIONS USING M-MODE ULTRASOUND

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Presented By: Anna S. Nagle, PhD

Introduction: Bladder wall micromotion caused by low amplitude rhythmic contractions (LARC) of the bladder wall may play a key role in producing bladder sensation and urgency. A non-invasive method to detect micromotion would be an important step in accessing conditions such as overactive bladder and detrusor overactivity. The aim of this study was to develop an anesthetized porcine model to compare LARC quantified from urodynamic pressures with micromotion quantified with non-invasive M(motion)-mode ultrasound cine loops of the bladder wall. The hypothesis of this study was that bladder wall micromotion measured with ultrasound represents a myogenic property that would directly correlate to LARC seen in vesical pressure (Pves).

Methods: Female pigs weighing 20-30 kg anesthetized with urethane underwent urodynamic studies with a fill rate of 50 ml/min. Expected cystometric capacity was 500 ml. At bladder volumes of 250 ml and 500 ml, filling was paused and ventilation was paused for 60 sec so that image data could be obtained without respiratory or filling motion. A correlation-based motion tracking algorithm was implemented in MATLAB to measure the width of the bladder wall over time in user-selected regions of interest (ROIs). The changes in bladder wall width were compared to changes in (Pves) via Pearson correlation coefficient.

Results: Figure 1 shows a frame of an ultrasound M-mode cine loop in which bladder wall thicknesses were tracked in two ROIs (A) in the anterior bladder wall (blue) and the posterior bladder wall (magenta). Also shown are the changes in bladder width within those ROIs overlaid on Pves (B). The correlation between anterior and posterior bladder wall width compared with Pves were 0.61 and 0.62 respectively (p<0.001).

Conclusion: A novel anesthetized pig model exhibiting LARC was developed. A moderate correlation was found between bladder wall width and Pves. This shows proof of concept for measuring of bladder wall micromotion non-invasively with ultrasound. Further analysis of changes in bladder wall at different levels of bladder filling with and without rhythmic changes in Pves will increase understanding of the relationship between micromotion and LARC.

Fig 1. A) Ultrasound image of a pig bladder with anterior (blue) and posterior (magenta) ROIs indicated in both the 2D ultrasound frame and in the anatomical M-mode 1D motion tracing. B) Changes in anterior (top) and posterior (bottom) bladder wall width overlaid on Pves.
Basic Science Podium/Poster #BS10

URINARY LEVELS OF MONOCYTE CHEMOATTRACTANT PROTEIN-1 (MCP-1) PREDICT THE SEVERITY OF SYMPTOM AND RESPONSE TO TREATMENT IN PATIENTS WITH OVERACTIVE BLADDER (OAB)

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Presented By: Bilal Farhan, MD

Introduction: We hypothesize that MCP-1 urinary levels correlate with OAB patients’ symptom severity. Our aim is to correlate normalized MCP-1 urinary levels to OAB symptoms before and after treatment. We conducted prospective study on patients with OAB symptoms and age-matched controls.

Methods: Urinary MCP-1 levels were measured in 36 patients with OAB and 13 controls. Patients were treated after the first visit by different OAB treatments (anticholinergic, Beta-3 agonist and or, onabotulinum toxin A, neuromodulations). Urinary MCP-1 levels were measured by (ELISA). The urinary MCP-1 levels and OAB symptoms severity were compared at baseline, 1 month, and 3 months after treatments. Different validated OAB questionnaires were used.

Results: The baseline urinary MCP-1 levels of patients with untreated OAB were significantly higher than that of controls with means. Urinary MCP-1 levels were significantly reduced at 3 months in 28 OAB-responders (77.8%). On other hand, 8 OAB- non-responders, showed unchanged in urinary MCP-1(Table 1).The severity of OAB symptoms and QoL had significantly decreased with urinary MCP-1 levels OAB- responders at 1 and 3 months of OAB treatments(Table 2).

Conclusion: Urinary MCP-1 levels were significantly higher in patients with OAB than in the controls. Patients with OAB who responded to treatments had significantly reduced urinary MCP-1 levels in association with a decreased severity of OAB symptoms at 3 months. These promising findings could help understanding the pathophysiology of OAB and neurophysiological signaling in the bladder function, identification of a potential marker, and/or developing new drug targets for treatment of patients suffering from OAB.

Table 1: Urinary MCP-1 levels in controls, OAB patients (responders, non-responders)

<table>
<thead>
<tr>
<th>Subjects</th>
<th>Baseline (Pre-treatment)</th>
<th>3-Months (post treatment)</th>
<th>P-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Controls</td>
<td>13 51.02 ± 9.63</td>
<td></td>
<td></td>
</tr>
<tr>
<td>OAB:</td>
<td>36</td>
<td></td>
<td></td>
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<tr>
<td>Responders</td>
<td>28 (77.8%) 257.13 ± 49</td>
<td>72.87±13</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Non-responder</td>
<td>8 (22.2%) 246.5± 45 244.37±32</td>
<td>=0.207</td>
<td></td>
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</tbody>
</table>
CHARACTERIZATION OF BACTERIA IDENTIFIED ON EXPLANTED MESH SLINGS USING NEXT-GENERATION SEQUENCING TECHNIQUES
A. Lenore Ackerman, MD, PhD, Victoria Scott, MD, Guo Liu, PhD, Wenyuan Shi, PhD and Shlomo Raz, MD
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Presented By: A. Lenore Ackerman, MD, PhD

Introduction: Vaginal mesh sling kits for stress urinary incontinence are associated with several severe complications, including mesh extrusion, urinary problems, organ perforation, and vaginal scarring. While most complications are attributable to local pathology (e.g. erosion) or device misplacement (e.g. nerve entrapment), we have observed the delayed development of severe chronic pelvic pain, despite an apparently well-placed graft. We investigated the relationship between alterations in the mesh-associated microbiota with pain symptomatology and local inflammation.

Methods: Sling mesh segments were isolated from three groups of patients: 1) those with delayed-onset chronic pain, 2) those presenting mesh extrusions >1 cm, and 3) those with isolated urinary retention without pain. Explanted mesh segments were examined by culture-independent, species-specific PCR, denaturing gradient gel electrophoresis, and next-generation deep sequencing methods to detect bacterial communities on explanted mesh segments.

Results: Sixty two patients were enrolled in this study. Exposed mesh segments were uniformly colonized with bacteria mirroring the vaginal microbiome. Unexpectedly, we detected bacterial species on explanted mesh from the group of patients with delayed-onset pain without mesh exposure that differed greatly from the vaginal species present at explantation, suggesting an enrichment of specific pathogenic species able to survive on foreign bodies. This bacterial colonization was absent from patients without pain who underwent mesh removal to treat urinary retention.

Conclusion: We found numerous, distinct bacterial species present on the mesh removed from most subjects in group 1 that were not present in groups 2 and 3 nor in the vaginal microbiome. This suggests the need for further research to explore the relationship of these species and the associated subclinical infection and/or inflammation to delayed-onset chronic pain.

Figure 1. Coincidence of bacterial abundance in three subject groups. Relative abundance of each bacterial species is expressed on a colorimetric scale indicated at the bottom of the map. In mesh explants removed for pain, multiple genera are seen in high abundance that are lacking from either the urinary retention and mesh extrusion groups. These using next-generation deep sequencing methods. These taxa found selectively in the presence of chronic pain tend to represent the more pro-inflammatory bacteria commonly seen in vaginal dysbiosis.
Poster #BS2
NEUROANATOMICAL EVALUATION OF PERI-VESICAL NERVE PLEXUS IN FEMALE WITH 3T-MR DIFFUSION TENSOR IMAGING
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Presented By: Bilal Farhan, MD

Introduction: To evaluate if tractography or fiber-tracking based on Diffusion Tensor Imaging (DTI) can improve the visualization of peri-vesical nerve fibers. Understanding the exact location and distribution of the entire nerve fibers plexus around the bladder could facilitate newer paradigms and approaches of targeted treatment of bladder dysfunction.

Methods: Pelvic DTI was performed as an add-on to our existing clinical pelvic MRI protocol on a 3Tesla MRI scanner (Siemens, Erlangen, Germany). It was acquired in axial orientation using body- and spine-matrix receiver coils and following acquisition parameters: TR/TE=9500/104 [ms], 30 directions, b-values=0, 600 [s/mm2], and 2 x 2 x 3 mm3 voxel-size. A high-resolution 3d-T2 scan of pelvis (0.9 x 0.9 x 1.0 mm3) in axial orientation was also added to serve as the anatomical template for tractography. DTI was processed using a dedicated workstation (Dynasuite Neuro 2.0, In Vivo Corp, Gainesville, USA) for fiber-tracking/visualization based on manual placement of region-of-interest (ROI). Placement of multiple ROIs in different orientations using anatomical landmarks and color-coded fractional anisotropy (FA) map were carried out by urology fellow (BF) experienced in use of the workstation for visualization of the nerve fibers around the bladder.

Results: DTI showed description of peri-vesical plexus nerve fibers in all directions, while 2D and 3D T2 morphological sequences depicted part of the fibers, in a plane by plane analysis of fiber courses. DTI demonstrated in female patient the spreading of nerve fibers around the bladder. This distribution was on the posterior and lateral bladder walls, and around the bladder neck.

Conclusion: This pilot study helps to detect the distribution of peri-vesical nerve fibers plexus, which will help in the targeted therapy for bladder disease including overactive bladder.
ANALYSIS OF VERSICAN AND HYALURONAN DEPOSITION IN THE FIBROTIC AND INFLAMMATORY RESPONSE TO POLYPROPYLENE MESH IN SYMPTOMATIC WOMEN UNDERGOING PELVIC FLOOR MESH REMOVAL

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Presented By: Katherine Amin, MD

Introduction: Current management of stress urinary incontinence (SUI) and pelvic organ prolapse (POP) includes use of polypropylene mesh. Pathophysiology of mesh complications is not fully elucidated, but fibrosis and inflammation have been identified. Abnormal extracellular matrix (ECM) is associated with (a/w) SUI and POP and in tissues of mesh complications. Proteoglycans, versican and hyaluronan (HA) play a key role in the regulation of ECM. We characterize the presence and distribution of versican and HA in vaginal tissue of women with mesh complications.

Methods: Tissue specimens of mesh removal procedures between 2011-2012 for symptomatic complications were examined by microscopy (H&E) and immunohistochemical staining for versican, (hyaluronan-binding protein a/w inflammation and elastin breakdown), hyaluronan (HA), and α-SMA (smooth muscle protein a/w inflammation and myofibroblast marker). Comparison was performed to control specimens obtained from excess tissue of POP or SUI surgery, with IRB-approval.

Results: Explant cases (n=29) included 17 slings, 4 abdominal implants, and 8 vaginal implants. Indications for surgical removal were urinary obstruction (13), pain (20), and erosion/exposure (17). Compared to control tissues (n=9), vaginal tissue from mesh removal exhibited strong HA and versican staining adjacent to mesh fibers (figure 1). ECM of explant case specimen showed enrichment of HA. Giant cells containing nuclei that were in contact with mesh appeared negative for HA but ECM between lymphocytes was rich in HA. Occasionally, α-SMA positive cells co-localized with versican in characteristic fibrous capsule surrounding mesh fibers. Associated nerves along mesh fibers and within the fibrous capsule stained strongly for versican.

Conclusion: Vaginal tissue in women with symptomatic mesh complications reflected changes in ECM components versican, HA, and α-SMA and suggests that some capsular cells around mesh fibers differentiate into myofibroblasts. Accumulation of space occupying deposits of versican and HA around nerves offers a possible mechanism of pain and merits further investigation. Our data provides further evidence of the fibrotic and inflammatory processes in mesh complications.
Poster #BS4
OVERACTIVE VOIDING BEHAVIOR IN SURGICALLY-INDUCED MENOPAUSAL MICE EXPOSED TO LIPOPOLYSACCHARIDE (LPS) IS MODULATED BY DISTINCT GENE NETWORK PATHWAYS
Marian Acevedo Alvarez, MD1, Judy Yeh, MD2, Lery Alvarez-Lugo, MS2, Ming Lu, MD2, Warren G. Hill, MD3 and Toby Chai, MD2
1CT; 2New Haven, CT; 3Boston, MA
Presented By: Marian Acevedo-Alvarez, MD

Introduction: Overactive bladder (OAB) and urinary tract infection (UTI) increase in incidence during perimenopause. Both conditions respond to estrogen, suggesting they may share common pathophysiological mechanisms sensitive to estrogen signaling. In this study, we aim to ascertain the effect of estrogen on voiding behavior in response to lipopolysaccharide (LPS), surrogate for bacteria, using mice after ovariectomy (OVX) vs sham.

Methods: Female C57BL6 mice underwent OVX or Sham (n = 10/group). Micturition behavior was characterized using voiding spot assay (VSA) at pre-surgery, 4 weeks post-surgery (prior to LPS exposure), and after each of the three consecutive days of intravesical inoculation with LPS. Mice were euthanized and bladders harvested for histologic examination. Gene expression was characterized using a separate cohort of OVX and Sham mice (n = 9/cohort), with bladders harvested at baseline (Day 0) and after LPS inoculation on Day 1 and Day 3 of serial LPS. Urothelium was isolated from OVX and Sham mice (n = 3/time point) and RNA was extracted for microarray chip hybridization. Ingenuity Pathway Analysis was used to identify specific genes showing patterns of fold changes in expression (cutoff ≥|2|, p < 0.05) paralleling changes in voiding behavior.

Results: OVX mice had increased voiding frequency throughout 3 days of LPS exposure whereas Sham mice almost normalized voiding behavior by day 3 (Fig 1). Flattened rugae were seen on histological evaluation of bladders from OVX mice but not from Sham mice. Out of 34K transcripts, 6 genes were identified showing patterns of changes in expression, correlating with patterns of voiding behavior. For example, each of the specific genes changed in opposite directions in OVX versus Sham animals on day 1 versus day 3, mimicking opposite changes in voiding frequencies. Yet, these genes also changed in the same direction in OVX and Sham at day 1, mimicking similar voiding frequencies.

Conclusion: Overactive voiding behavior persisted in OVX mice but resolved in Sham mice with repeated LPS challenge. Changes in expression of six urothelial genes were identified that mimicked voiding behavior, serving as potential targets for new OAB and UTI treatment paradigms.
Poster #BS5

REPEATABILITY OF MOTOR UNIT NUMBER ESTIMATION OF THE EXTERNAL ANAL SPHINCTER
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Presented By: Yingchun Zhang, PhD

Introduction: Impairment to the functional innervation of the external anal sphincter (EAS) can be a consequence of impairment to the central or peripheral nervous system and injury to the sphincter musculature. A novel EAS motor unit number estimation (MUNE) technique was developed in our lab to investigate the global EAS innervation in a female rat model, and was further validated by immune-histochemical staining. The aim of this study is to evaluate the test-retest reproducibility of our previously developed approach.

Methods: A total of 7 female Sprague-Dawley rats were tested in this study, including intact (n=2) and sham (n=5, laminectomy at sacral spinal cord but no injury) animals. Sham animals were given post-surgery care and were tested four weeks after surgery. The MUNE approach incorporated trans-vaginal pudendal nerve stimulation, intra-rectal surface EMG recordings, and a statistical MUNE algorithm. MUNE was performed for each animal under anesthesia (urethane, 1.2 g/kg), followed by a 10 min break. Test-retest reproducibility was then evaluated by removal and re-insertion of stimulation and recording probes, and repeating the aforementioned MUNE procedure. Coefficient of variation (CV) was used to quantify the repeatability of compound muscle action potential (CMAP), averaged single motor unit potential (SMUP), and MUNE values determined during offline processing. CMAP was calculated as the averaged peak amplitude across four surface EMG channels.

Results: MUNE and repeatability tests were successful in all 7 animals. An averaged CMAP value of 2029.24±440.56 µV, a mean SMUP size of 55.76±11.62 µV and a mean MUNE of 38±9 was found across all animals. The CV for CMAP, SMUP and MUNE is 4.60±6.14% (1.34% to 19.38%), 7.44±5.57% (from 1.47% to 17.1%) and 7.01±5.02% (from 2.48% to 17.37%).

Conclusion: The results demonstrated marked repeatability of the presented EAS MUNE model, enabling reliable long-term tracking of neuromuscular alterations in the EAS in the presented rodent model. Future explorations will include applying the MUNE approach to a rodent spinal cord injury model to investigate the chronic impact of spinal impairment.

Support: This work was supported by the Brown foundation, the Houston Methodist foundation, NIH R00DK082644, Guangdong Provincial Work Injury Rehabilitation Hospital and the University of Houston.
Poster #BS6
OPTIMIZING TENSILE STRENGTH USING DIFFERENT COLLAGEN-BASED NANOPARTICLES FOR ELECTROCHEMICAL ALIGNMENT GRAFT FABRICATION OF BIOTEXTILES DESIGNED FOR INCONTINENCE AND PELVIC RECONSTRUCTIVE SURGERY
Raymond Rackley, MD¹, Nicole Edwards BME², XingGuo Cheng, PhD², Brad Gill BME, MD³ and David Staskin, MD⁴
¹Cleveland, OH; ²SouthWest Research Institute; ³Cleveland Clinic; ⁴Steward Health Tufts University of Medicine
Presented By: Raymond Robert Rackley, MD

Introduction: We previously reported that biofabricated devices of collagen-based nanoparticles share similar properties to autografts in promoting functional tissue repair and regeneration. We hypothesize that techniques using planar electrochemical alignment (ECA) of 2 different collagen-based nanoparticles for pelvic devices may have inherent biomechanical characteristics that better replicate the biological strength of autografts. Our specific aim of this basic science study was to compare the fracture stress of different concentrations of acid and pepsin soluble collagen-based cross-linked collagen sheets fabricated by the ECA method.

Methods: Graft sheets of biotextile fabrication using solubilized collagen in various concentrations of acid versus pepsin derived treatment was performed by controlled molecular assembly using planar ECA that moves proteins in a pH gradient produced by the electrolysis of water. Fracture stress, the point at which the biotextile sheet failed, was determined.

Results: See summary graphic below; biofabricated graft sheets using the ECA method had a fracture stress well within the range of values reported for rectus fascia and fascia lata autografts. While the ECA fabricated sheets are thin, they showed excellent tensile strength with a high fracture stress. Very little deformation was seen before complete failure was noted (completely torn). Furthermore, the combination of pepsin and acid solubilized collagen nanoparticles provided the best overall results in considering both the dry lyophilized and post-lyophilized hydrated state.

Conclusion: Novel collagen-based nanoparticles can be easily fabricated from a combination of pepsin and acid derived solubilization via ECA using planar electrodes into planar sheets with excellent biomechanical properties. These findings provide the generation of stress-strain curve studies to further enhance the balance between additional biomechanical, bioactive and biocompatibility features of biofabrics.

Funding: Southwest Research Institute®; Armed Forces Institute of Regenerative Medicine; BioFabrix, LLC
DIFFERENTIAL PROTEIN EXPRESSION IN PATIENTS WITH UCPPS: A MAPP STUDY
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Presented By: Jennifer T. Anger, MD, MPH, FPMRS

Introduction: Urologic chronic pelvic pain syndrome (UCPPS) encompasses both interstitial cystitis/bladder pain syndrome and chronic prostatitis/chronic pelvic pain syndrome. A lack of understanding of the molecular mechanisms underlying UCPPS has been a challenge and dilemma for diagnosis and treatment leading to a delay in basic and translational research focused on biomarker and drug discovery, clinical therapy, and preventive strategies. Hoping to identify a specific diagnostic signature of UCPPS, our hypothesis is that UCPPS is associated with specific protein patterns in the blood.

Methods: We collected serum samples from 400 patients who participated in the MAPP network. We applied multiple reaction monitoring mass spectrometry (MRM-MS) methods for 72 pre-selected targeted proteins that are involved in many diseases and inflammatory processes. The largest categories of study were control vs UCPPS. We also matched patients by pain severity, gender, pelvic pain vs. pelvic pain and beyond (widespread pain). These were processed and analyzed.

Results: Proteins had significant differential expression across five categories, including age, sex, cohort (control vs. UCPPS), and urinary severity. One protein, sex hormone binding globulin, was differentially expressed in Rand Interstitial Cystitis Epidemiology (RICE) subtypes, specifically pain with bladder filling. We also identified interactions between proteins and their overlap across comparison groups (Figure 1). Many markers had overlap between, for example, urinary severity and the presence of UCPPS (vs. control). Some markers were seen across three or more comparisons.

Conclusion: Although validation studies are needed and underway, the targeted analysis of 72 proteins, which are involved in multiple pathways including inflammation, appears to distinguish patients with UCPPS vs. controls. Depending on the peptide it also distinguishes between sex, age, and urinary severity. Understanding the signaling networks perturbed in UCPPS will open new avenues to the identification of novel biomarkers and, equally important, drug targets.
REGULATION OF CONJUGATIVE TRANSFER OF β-LACTAM RESISTANCE FROM UROPATHOGENIC STRAINS OF ESCHERICHIA COLI

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Presented By: Tatyana A. Sysoeva, PhD

Introduction: Multidrug resistant uropathogens are becoming increasingly wide-spread making it difficult to treat common diseases such as urinary tract infections (UTI). Antibiotic resistance genes are often associated with mobile plasmids that can transfer directly from cell to cell through conjugation, promoting spread of these plasmids and adding to global burden of antibiotic resistance. We set to investigate how uropathogenic Escherichia coli contribute to the spread of antibiotic resistance genes.

Methods: To mimic the interaction of pathogenic E. coli strains with human commensal strains, we screened a set of multidrug resistant clinical isolates of pathogenic Escherichia coli obtained from patients with UTI, for their ability to donate the β-lactam antibiotic resistance gene to laboratory E. coli strains via conjugation. Mating assays were performed for clinical isolates and for known conjugative plasmids from seven different groups. Donor cultures were grown to the indicated growth stage and concentrated to equal densities before the mating assay. Plasmids were isolated and assayed by agarose gel electrophoresis. Involvement of cAMP signaling in regulation was tested by comparing wild-type donor cells with Δcya background.

Results: Within the tested set of 34 antibiotic resistant uropathogenic isolates we identified 17 that efficiently donated their resistance into non-pathogenic E. coli. Each isolate contained one to five separate plasmids ranging in size from 3 to over 100 kb. Plasmids from different groups showed strong growth-phase dependent regulation of conjugation that was classified into three major classes. The tested conjugating uropathogenic isolates exhibited only one type of regulation with faster transfer from exponential cells. We observed that transfer regulation in the diverse systems hinges on cAMP signaling that assists the transition from exponential to stationary culture.

Conclusion: Clinical isolates of multidrug resistant uropathogenic E. coli contain multiple extrachromosomal elements that transfer resistance genes via conjugation. Donor- and plasmid-derived factors define the efficiency of conjugal transfer and these factors can be targeted to develop strategies to prevent transfer of antibiotic resistance genes between bacteria and halt the global spread of these mobile plasmids.

Funding Sources: K12 DK100024 - Duke KURe Program to TS; NIH, David & Lucile Packard Foundation, and ARO grants to LY.
Poster #BS9
THE UROPATHOGENIC ESCHERICHIA COLI PILUS USHER CONTROLS PILUS ASSEMBLY THROUGH A 2-STEP VERIFICATION PROCESS DURING ACTIVATION
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Presented By: Glenn Thomas Werneburg, PhD

Introduction: Uropathogenic strains of Escherichia coli use the chaperone/usher (CU) pathway to construct adhesive surface structures termed pili or fimbriae. Pili facilitate binding to bladder and kidney epithelial cells, thereby promoting urinary tract colonization and infection. The CU pilus biogenesis pathway requires a periplasmic chaperone protein and an outer membrane usher protein. The usher catalyzes the exchange of chaperone-subunit for subunit-subunit interactions, and promotes ordered polymerization and secretion of subunits into the mature pilus fiber. An essential and well-regulated step of pilus assembly is the activation of the usher, in which the usher undergoes a transformation from a plug-gated membrane pore to an engaged assembly machine.

Methods: To gain a mechanistic understanding of how the usher is activated and controls the assembly of pili, we monitored pilus subunit interactions with different usher domains using genetic, biochemical, and biophysical approaches including Förster Resonance Energy Transfer (FRET).

Results: Using an inter- and intramolecular FRET-based affinity approach, we identified the necessary conditions for usher activation. We identified particular regions of the activating pilus subunit (adhesin) that are essential for discrete steps of the activation process. Specifically, we demonstrated that the C-terminal domain (pilin domain) of the activating subunit is necessary for subunit recruitment to the usher platform (Kd=194 nM), and that the N-terminal domain (lectin domain) of the activating subunit is necessary for subsequent usher plug expulsion (act1/2=4 nM) and priming for pilus assembly (Kd=4 nM). Further, using a mutagenesis approach, we were able to demonstrate that the addition of the lectin domain is sufficient to confer usher-activating potential to a non-activating pilus subunit.

Conclusion: Our results suggest that the usher employs a “2-step verification” process in which it recognizes and verifies both the N and C domains of the initiating adhesin subunit, each during a discrete step in the activation process. This process may ensure that every assembled pilus has an adhesin at its tip, in a location to facilitate urinary tract adhesion and UTI. These discoveries open avenues for informed drug design to target these newly-elucidated mechanistic steps, thus potentially preventing or treating UTI. Our FRET-based approaches are poised for the screening of molecules to disrupt this process.
Poster #BS10
THE ROLE OF PDGFRα+ CELLS IN CYCLOPHOSPHAMIDE-INDUCED DETRUSOR OVERACTIVITY
Haeyeong Lee, PhD, Byoung Koh, BS, Lauren Peri, BS, Kenton Sanders, PhD and Sang Koh, MD,PhD
University of Nevada, Reno, School of Medicine, Department of Physiology and Cell Biology, Reno, NV
Presented By: Haeyeong Lee, PhD

Introduction: Cyclophosphamide (CYP) is known to cause cystitis in humans, and CYP-induced cystitis in rodents has been used to investigate this disorder because there are many features in common with cystitis occurring in patients treated with CYP. The changes in CYP-injected bladders produce functional changes that are thought to occur via urothelial and neural effects. However, functional changes in detrusor muscles due to CYP treatment have not been characterized. In previous reports, we demonstrated the role of detrusor PDGFRα+ cells during bladder filling. In the present study, we examined the molecular and functional changes occurring in detrusor PDGFRα+ cells in CYP-induced detrusor overactivity.

Methods: CYP was injected intraperitoneally for 4 injections in a 7 days in PDGFRα+/eGFP and SMC/eGFP mice. We harvested the detrusor muscle on day 8 and dispersed the cells for the fluorescence activated cell sorting. Sorted PDGFRα+ cells and smooth muscle cells (SMCs) were used for molecular study to compare the changes in transcripts between CYP−injected and control group. Immunohistochemistry, mechanical contractility, patch clamp and ex vivo cystometry were also performed.

Results: qPCR revealed that CYP−injected detrusor muscle decreased Pdgfra expression with an increase in Il6 and Tnfa. Transcriptional changes in sorted PDGFRα+ cells from CYP−injected PDGFRα+/eGFP mice showed Pdgfa and Kcnn3 (SK3) transcripts were decreased compared with saline−injected control. Sorted SMCs from SMC/eGFP mouse did not show detectable changes. Immunohistochemistry showed that SK3 and PDGFRα immunoreactivity were downregulated in CYP−injected detrusor muscle. In mechanical experiments, apamin (a SK blocker) sensitivity on spontaneous contractile activity was decreased in CYP−injected detrusor muscles. In ex vivo cystometry, increased spontaneous transient contractions and less apamin sensitivity were observed in CYP−injected bladder. CyPPA (a SK activator) induced hyperpolarization and activated SK currents in detrusor PDGFRα+ cells in control PDGFRα+ cells. SK current density and hyperpolarization responses to CyPPA was greatly reduced in CYP-injected PDGFRα+ cells

Conclusion: In conclusion, we found that CYP−induced detrusor overactivity is resulted from loss or downregulation of PDGFRα and SK channels in detrusor PDGFRα+ cells. These results provide novel mechanisms of functional role of PDGFRα+ cells on detrusor overactivity. (Supported by NIH RO1 DK098388)
COMPARISON OF IRON-DEPENDENT REGULATION OF SURFACE MOTILITY IN UROPATHOGENIC AND NONPATHOGENIC ESCHERICHIA COLI

Parker McDill, BS, MS\textsuperscript{1}, Larry Reitzer, BS, PhD\textsuperscript{1} and Philippe Zimmern, MD\textsuperscript{2}
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Presented By: Parker Matsuo McDill

Introduction: Iron is an essential nutrient for growth as well as a major regulator of virulence factor synthesis. Swarming is a rapid form of bacterial surface motility and likely plays a role in the development of urinary tract infections. In a nonpathogenic strain of Escherichia coli, we have observed iron-dependent regulation of swarming. Our goal was to determine whether iron also regulates swarming for clinical isolates of uropathogenic Escherichia coli (UPEC).

Methods: Strains used were the nonpathogenic W3110 and the UPEC strains UTI 89 (acute cystitis), RUTI 12 (chronic cystitis), and CFT073 (pyelonephritis). To assay swarming, 1\muL of an overnight culture grown in liquid swarm media (1\% tryptone, 0.25\% NaCl, 0.5\% glucose) was inoculated in the center of a plate with 25mL solidified swarm media (0.45\% Eiken agar) and placed in a 37°C incubator for 36 hours. Low iron media was prepared by adding 2,2'~bipyridal, an iron chelator, to a concentration of 100\muM in freshly autoclaved media. Swarming was measured by the distance (mm) of outward movement from the center.

Results: When iron was not the limiting nutrient, all four strains swarmed. Whereas both UTI 89 (90mm) and RUTI 12 (90mm) swarmed to the edge of iron-sufficient swarm plates, CFT073 (39mm) and W3110 (47mm) did not. However, under iron-limiting conditions, only W3110 (30mm) and UTI 89 (90mm) were capable of swarming. In contrast, neither RUTI 12 (6mm) nor CFT073 (9mm) displayed significant movement.

Conclusion: The striking differences observed in these swarm phenotypes clearly indicate strain-dependent differences in the regulation of swarming motility. Such differences are consistent with the hypothesis that strain-specific adaptations alter regulatory networks. For iron in particular, changes in the network of iron-responsive genes would affect not only swarming motility but also virulence. Therefore, swarming proficiency in iron-limited environments could favor the initial ascension of the urethra (UTI 89), and the subsequent loss of this ability may be concomitant with the establishment of long-term infections, such as chronic cystitis (RUTI 12) and pyelonephritis (CFT073).

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Poster #BS12
A RELIABLE, SENSITIVE AND FAST ENZYMATIC METHOD TO MEASURE D-MANNOSURIA IN WOMEN
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Presented By: Iiti Mehta, MS

Introduction: Many women with recurrent urinary tract infections (RUTIs) take over-the-counter D-mannose supplements. The rationale is that D-mannose has been shown to block bacterial fimbriae adhesion to the bladder wall mucosa in an animal model, thereby possibly reducing the frequency and severity of RUTIs. Studies have measured the anti-adhesion activity in urine through serial dilution after ingestion of oral D-mannose, but there is no published technique to specifically and sensitively measure D-mannose in urine. The objective was to develop a precise, sensitive, and fast enzymatic method to measure D-mannosuria in women.

Methods: The reaction was performed in three stages. In the first stage, a small urine sample (0.1 ml) was added to the reaction assay mixture that contained hexokinase (HK) and glucose-6-phosphate dehydrogenase (G6P DH), Mg++, ATP, and NADP+. Glucose is stoichiometrically converted to glucose-6-phosphate (G6P) and 6-phosphogluconate (6-PG) with the formation of NADPH, which is measured with a spectrophotometer at 340 nanometer. In the second stage, G6P isomerase (Pgi) was added, which converts fructose-6-phosphate to G6P, and subsequent change in A340 measured fructose. In the third stage, ManA was added, and the subsequent increase in A340 measured mannose. Five nanomoles sugars (delta A340 of 0.03) were reliably detected by this method. The whole assay took about 30 minutes.

Results: A known concentration of D-mannose was added to human urine to confirm the accuracy of the method and show that urine does not inhibit the reactions. Two grams D-mannose was given orally to two healthy volunteers. Baseline and hourly samples after D-mannose 2 gm oral intake were then obtained. To allow sample comparison, all urinary concentrations of D Mannose were reported as a ratio to the urinary creatinine level (Figure 1).

Conclusion: A reliable method of measuring D-mannosuria was devised which may prove useful to determine the efficacy and optimize the intake (dose, intake frequency, elimination ratio) of D-mannose in women suffering from RUTIs.

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Poster #BS14

MYOGENIC MECHANISMS OF DETRUSOR OVERACTIVITY IN SPINAL CORD INJURY

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Presented By: Haeyeong Lee, PhD

Introduction: The bladder has the unique capability of maintaining a low muscle excitability during filling. We discovered and characterized an entirely novel control mechanism that regulates detrusor excitability. PDGFRα+ cells supply a powerful inhibitory mechanism to the bladder during filling. This mechanism is composed of the following molecular and functional components: 1) PDGFRα+ cells display strong expression of SK3 channels (Kcnn3). 2) Hyperpolarization due to activation of SK channels in PDGFRα+ cells exerts a membrane potential-stabilizing effect on detrusor muscles. 3) Expression of TRPV4 channels provides a stretch-dependent source for Ca2+ entry and activation of SK channels. 4) Genetic deactivation of TRPV4 and SK3 channels result in bladder overactivity. The hypothesis of this present study is the loss or defects in PDGFRα+ cells or in key molecular components of the inhibitory regulation provided by PDGFRα+ cells in spinal cord injury (SCI) leads to detrusor dysfunction and development of an overactive phenotype.

Methods: SCI was induced by complete compression of T13-L1 spinal cord. Experiments were performed on 24 hr, 48 hr and 72 hr after surgery. We employed molecular approaches (RNAseq, qPCR and protein studies) and ex vivo cystometry.

Results: In ex vivo cystometry, SCI bladder revealed an increase in the amplitude and frequency of transient contractions (TCs; relevant to non-voiding contractions in in-vivo cystometry) during filling. TCs increased in SCI bladders. Effects of a SK blocker (apamin) and a SK channel activator (SKA31) on TCs were reduced in SCI mice compared to control suggesting downregulation of SK channels in SCI bladder. qPCR, immunohistochemistry and immunoblot showed the loss of PDGFRα and downregulation of SK channels. RNAseq and qPCR data showed the apoptosis-related geneset score was significantly increased in SCI detrusor muscles.

Conclusion: These findings support that loss or downregulation of PDGFRα+ cells and SK channels in SCI detrusors might involve the development of detrusor overactivity from SCI. (Supported by NIDDK, RO1 DK098388)
CHARACTERIZATION OF RELAXIN RECEPTOR EXPRESSION IN HUMAN BLADDER SMOOTH MUSCLE CELLS AND EVALUATION OF ITS EFFECT ON TISSUE REMODELING AND FIBROSIS

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Presented By: Edward C. Diaz, MD

Introduction: Relaxin has the ability to inhibit fibrotic pathways and modulate the extracellular matrix and is being studied as a therapy for fibrotic medical conditions such as scleroderma, and pulmonary fibrosis. Currently there is no published data on relaxin’s role in the human bladder. The objective is to characterize relaxin receptor expression in human bladder smooth muscle cells (SMCs) and assess its effect on tissue remodeling and fibrosis.

Methods: Primary human bladder SMCs were obtained commercially. We assessed relaxin/insulin like family peptide receptor 1 (RXFP1) and RXFP2 expression using quantitative reverse transcriptase-PCR (qRT-PCR), and immunohistochemistry (IHC). Human bladder SMCs were grown in media for less than 7 passages. Cells were starved and administered various concentrations of relaxin 2 (0, 1, 10, 100 ng/mL). Cell Lysate and supernatant were collected at 24 and 48 hours. RNA was obtained from cell lysate and used for qRT-PCR. Protein expression from cell lysate and supernatant were used for western blot and zymogram assays. Assessed proteins included: elastin, collagen 1, collagen 3, Transforming growth factor-beta 1 (TGF-beta 1), matrix metalloproteinases (MMP) 2, MMP 9, tissue inhibitors of metalloproteinases (TIMP) 1, and TIMP 3.

Results: On immunohistochemistry, primary human bladder SMCs stained positive for RXFP1. This was confirmed with qRT-PCR. We did not detect significant expression of RXFP2 on qRT-PCR or immunohistochemistry. qRT-PCR on RNA obtained from 24 hour cell lysate revealed no significant change in expression for collagen 1, collagen 3, TGF-beta 1, MMP 9, TIMP 1, and TIMP 3. There was a trend towards increased expression of MMP-2 and elastin. MMP-2 Zymogram for cell lysate and supernatant at 24 hours did not display obvious pattern of increased expression, however, 48 hours illustrated statistically significant increased expression of latent and active forms of MMP-2. See Figure.

Conclusion: Human bladder SMCs express RXFP1, the receptor for relaxin 2. Our data demonstrates relaxin can have an effect on bladder SMCs at concentrations at 1 ng/mL in vitro. MMP-2 has a dose response to relaxin that is most evident at 48 hours.

Source of Funding: None

Zymogram: 48h Relaxin-2 Treated Bladder Smooth Muscle Cell Cell Lysate, Exp. 1

Ex. 1 MMP Expression in 48h RLX-2 Treated Bl SMC Cell Lysate

"No differences in expression for MMP-9 (UA)"
NERVE STIMULATION INCREASES VOIDING EFFICIENCY IN A NOVEL MODEL OF DETRUSOR UNDERACTIVITY

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Presented By: Eric Gonzalez, PhD

Detrusor underactivity (DUA) is an understudied health concern that affects up to 45% of men and women. The clinical management of DUA is inadequate and fails to improve the quality of life of these patients. The limited availability of animal models that exhibit the integrated pathophysiology of DUA impedes the development of new therapeutic approaches. The current studies characterized the bladder function of an obesity model of DUA and investigated neuromodulation as a management option to restore efficient bladder emptying. Eight-week old female obese-prone (OP) and obese-resistant (OR) rats were purchased from Charles River (Boston, MA). OP and OR rats were fed a 45% fat diet from 9-21 weeks and a 60% fat diet from 21-24 weeks. Serum was collected from the tail vein for metabolic analysis at 8 and 24 weeks. Chronic bladder function (voided volume and voiding frequency) of OP rats was assessed twice per week from 8-24 weeks in a metabolism cage. At 24 weeks, OP and OR rats were anesthetized with urethane (1.2 g/kg s.c., supplemented as needed) and underwent acute single-trial cystometry. A paddle with platinum iridium contacts was placed on the EUS to record EMG signals and a bipolar microcuff was placed around the motor or sensory branch of the pudendal nerve or the pelvic nerve for electrical stimulation. Following diet-induced obesity (DIO), OP rats weighed more than OR rats and had normal blood glucose but developed hyperinsulinemia and hypertriglyceridemia. During the chronic monitoring of bladder function, the voiding frequency and voided volumes of OP rats remained relatively constant when normalized to water intake. OP rats, however, exhibited DUA and urinary retention following DIO in acute cystometry. Compared to OR rats, OP rats had increased volume threshold, decreased peak micturition pressure (p ≤ 0.001), decreased voiding efficiency (p ≤ 0.0001), and decreased EUS EMG activity during voiding. Patterned electrical stimulation of the motor branch of the pudendal nerve increased voiding efficiency two-fold in OP rats (p ≤ 0.05), whereas, stimulation of the sensory branch of the pudendal nerve did not alter voiding efficiency. OP rats also had no change in voiding efficiency and decreased evoked contraction amplitude with electrical stimulation of the pelvic nerve. This animal model may be used to understand the pathophysiology of DUA and establish the efficacy of neuromodulation to recover efficient bladder emptying with urinary retention.
Poster #BS17
AMPLITUDE EFFECTS OF SACRAL NEUROMODULATION IN THE FULLY CONSCIOUS OVINE MODEL
Thaddeus Brink, PhD, Tina Billstrom, Melissa Mattson and Lance Zirpel, PhD
Medtronic Inc., Minneapolis, MN
Presented By: Thaddeus S. Brink, PhD

Introduction: Sacral neuromodulation (SNM) is a clinically approved therapy for refractory overactive bladder. A fully conscious sheep model was developed to test SNM parameters and novel concepts using changes in bladder capacity. To more fully understand similarities and limitations of the sheep model to clinical usage, we examined the effect of different amplitudes of SNM on bladder capacity.

Methods: Normal, female, Polypay sheep (n=4) were anesthetized and surgically implanted with bilateral InterStim II devices (Model 3058) and leads (Model 3889) in the sacral foramen (S3 or S4). Following recovery, urodynamics were performed weekly. After 5 baseline trials (no SNM), amplitudes of 0.5X, 1X, 2X, 3X motor threshold (MT) or maximum tolerable amplitude (MTA) were applied for 5 trials. MT was defined as the first visual motor reflex and MTA was defined as the maximum amplitude achieved before the sheep showed signs of distress. Amplitudes were presented randomly each week with three weeks obtained at each amplitude. Group data are expressed as average±SEM. Means were compared via 2-way ANOVA with Holm-Sidak pairwise comparisons and p<0.05 considered significant.

Results: A 2-way ANOVA revealed that only MTA resulted in a significant increase in bladder capacity (df=4, F=5.98, p<0.001). Average bladder capacity during baseline trials was 120±12ml and increased to 200±14ml during SNM. For 0.5MT (137±12ml to 129±9ml), 1XMT (124±11ml to 125±13ml), 2XMT (134±8ml to 128±9ml) and 3XMT (133±9ml to 142±7ml), there was no significant effect of SNM on bladder capacity.

Conclusion: These data show that supra-motor threshold amplitudes of SNM are needed to increase bladder capacity in normal sheep. While the normal ovine model is sufficient for investigating fundamentals of SNM, there may be opportunity to investigate subtler and more closely clinically translatable parameters using an ovine model of bladder overactivity. Future studies may examine SNM effects in different bladder hyperactivity models within the fully conscious sheep.

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Poster #BS18
CORRELATION BETWEEN DETRUSOR AND MOTOR FUNCTION IN AN ANIMAL MODEL OF PARKINSON’S DISEASE
Vivian Cristofaro, PhD, Andrew Orlando, Sean D Carey, Yifei Xu, Josephine A Carew and Maryrose P Sullivan
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Presented By: Vivian Cristofaro, PhD

Introduction: Recent findings in patients with Parkinson’s disease (PD) indicate that symptoms associated with disorders of visceral organs, including the bladder, may precede by decades the onset of motor deficits. Abnormal aggregation of α-synuclein (α-syn) in the substantia nigra is a hallmark of PD. This protein has been implicated in synaptic vesicle trafficking. Although well characterized in the central nervous system, the expression and distribution of α-syn in peripheral organs has not been defined. This study used an animal model of PD to localize α-syn in the bladder, and investigate age-dependent detrusor abnormalities in relation to the progression of motor deficits.

Methods: α-syn localization was analyzed in normal bladder tissue by immunofluorescence microscopy. Bladders for functional studies were obtained from transgenic mice overexpressing a mutation of α-syn (SNCAA53T) that is common in human familial PD and from transgenic mice overexpressing the human α-syn wild-type (SNCAWT). Neurogenic responses to electrical field stimulation (EFS) were tested in bladders from 14, 28, 42, 58 week-old mice. Muscarinic M3 and purinergic P2X1 receptor expression in bladder tissue was determined by western blotting. Changes in motor function were evaluated by the rotarod test.

Results: α-syn immunoreactivity was detected throughout the bladder of normal mice and co-localized with the cholinergic marker VACHT. Motor performance was similar in both transgenic strains at 14 and 28 weeks. Compared to SNCAWT, coordination was impaired in SNCAA53T mice at 42wks and worsened further at 58wks. In bladder tissue, neurogenic contractions induced by EFS were similar between both transgenic 14wk old mice. However, by 28wks of age, EFS responses were higher in the mutant transgenic SNCAA53T mice compared to SNCAWT. At 42wks, EFS-induced responses were decreased in SNCAA53T mice and by 58 wks of age, were lower than responses in SNCAWT. Changes in M3R or P2X1R expression were not detected in these bladder tissues.

Conclusion: In this animal model of PD, changes in neurogenic detrusor contractions preceded motor dysfunctions, suggesting that altered peripheral innervation occurs at an early stage of PD. α-syn localization on excitatory nerves is consistent with its potential role in peripheral neurotransmission in the bladder. Transgenic mice overexpressing a human SNCA mutation are a promising model of bladder dysfunction in PD.

Funding: Dept. Veteran Affairs
Poster #BS19
SEARCHING FOR THE SOURCE: MACROSCOPIC MEASUREMENT OF CALCIUM SIGNALS AND MICROMOTIONS IN THE MOUSE URINARY BLADDER
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Presented By: Nathan R. Tykocki, PhD

Multiple species, including humans, exhibit “non-voiding” or “transient” contractions (TCs) of the bladder wall during filling, that are accompanied by large bursts of activity from bladder sensory nerves. This suggests that TCs play an important role as sensors of bladder fullness, but the nature of TCs themselves remains unclear. Traditional confocal and multiphoton microscopy are limited by their reliance on high-power objective lenses, thin focal plane, and sensitivity to movement. This makes them unsuitable for measuring calcium signals and micromotions across the entire detrusor muscle syncytium, especially during a TC. Thus, we sought to devise a means of capturing and analyzing the macroscopic patterns of calcium signals and micromotions from the entire bladder wall, to determine how and where TCs originate. We designed and fabricated a specialized chamber to image bladder micromotions while simultaneously measuring intravesical pressure in an ex vivo mouse bladder. We discovered that a “TC” is the integration of multiple microcontractions of discrete portions of the bladder wall. Interestingly, these micromotions vary in frequency and duration, but result in regular, phasic increases in intravesical pressure characteristic of a TC. While calcium transients within the bladder smooth muscle seem stochastic in nature, global synchronous calcium events can and do occur. These techniques, while still in their infancy, represent new and novel tools to finally determine the nature and origin of TCs in the urinary bladder. Funded by NIH K01-DK103840 (NRT) and R37-DK053832 (MTN).
Poster #BS20

CHANGES IN DETRUSOR FUNCTION AND PROTEIN O-GLCNACYLATION IN AN ANIMAL MODEL OF TYPE 2 DIABETES

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VA Boston Healthcare System, Harvard Medical School, Boston, MA.

Presented By: Vivian Cristofaro, PhD

Introduction: Diabetes is associated with a high prevalence of lower urinary tract symptoms. Although the time course of diabetic bladder dysfunction is well established in type-1 diabetes, temporal changes in bladder function in type-2 diabetes (T2D) are less clear. Chronic hyperglycemia increases protein O-GlcNAcylation (modification of serine/threonine residues by the moiety, N-acetyl-glucosamine) thus altering the activity of a variety of proteins. Using bladders from an animal model of T2D, this study compared detrusor function and protein O-GlcNAcylation patterns to investigate whether modifications of specific proteins might be responsible for altered detrusor function.

Methods: Bladders were procured from db/db and control mice at ages between 10 and 40 weeks. After removing the mucosa, longitudinal bladder smooth muscle (BSM) tissue was mounted in organ baths containing Kreb’s for isometric tension studies. BSM responses to nerve- or agonist-induced stimulations were compared between diabetic and control animals. Changes in protein GlcNAcylation were determined by western blotting of BSM tissue lysates from diabetic and control mice.

Results: Contractions induced by EFS were significantly lower in db/db mice than in control tissue at 10 and 20 wks, but no differences were detected between groups at 30 or 40 wks of age. Post-junctional bladder contractions elicited by CCh and KCl were comparable between groups. A significant age-dependent increase in O-GlcNAc immunoreactivity was detected in db/db bladders compared with control. Akt, a kinase whose activation downstream of insulin signaling has been linked to vesicle exocytosis, was identified as highly O-GlcNAcylated in db/db BSM tissue.

Conclusion: The decreased neurogenic responses observed in db/db bladders together with the unchanged post-junctional excitatory responses compared to controls suggest impaired neurotransmission with early T2D. An increase in Akt O-GlcNAcylation may provide a molecular mechanism for the impaired neurotransmission in db/db bladders.

Funding: Dept. Veteran Affairs.
**Poster #BS21**  
APPLICATION OF NEAR INFRARED SPECTROSCOPY TO CHARACTERIZE HEMODYNAMICS OF PELVIC FLOOR MUSCULATURE IN WOMEN WITH LOWER URINARY TRACT SYMPTOMS AND VOIDING DYSFUNCTION

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Presented By: Emily Grace Deegan, BA, BScN, RN

**Introduction:** Near infrared spectroscopy (NIRS) allows real time noninvasive measurement of muscle hemodynamics. It detects concentration of chromophores oxygenated (O2Hb) and deoxygenated hemoglobin (HHb) from which changes in blood volume and oxygen supply/demand are derived, allowing physiologic parameters of muscle function to be quantified. Assessment of pelvic floor muscle (PFM) function is central to managing urinary incontinence (UI) / lower urinary tract symptoms (LUTS) but currently lacks quantifiable physiologic measures. Objective: develop NIRS transvaginal probe to assess O2Hb and HHb in bilateral PFM and compare NIRS parameters in continent controls vs cases with LUTS due to neurogenic condition.

**Methods:** NIRS transvaginal probe incorporated fiberoptic cables in disposable optically inert plastic speculum. NIR light transmitted at 766, 861, 906 and 971 nm by 2 channel Oxymon MkIII (Artinis Medical Systems). Paired optodes secured bilaterally at 20 mm distance for 10 mm tissue penetration. Data captured at 10 Hz included O2Hb, HHb and total Hb tracings of right and left side. Subjects performed standardized PFM contractions with NIRS probe and perineometer, 10-min rest in between.

**Results:** N=11, 5 neurogenic cases, Age 24-72yrs, BMI 20.2-26.9, Parity 0-3. Cause of neurogenic condition: spinal cord injury, multiple sclerosis, post-polio syndrome. To characterize hemodynamic pattern of PFM in response to exercise, O2Hb, HHb and total Hb concentration changes were assessed. Changes arising with contraction are shown in Figure 1. Vertical bars = contraction, Y-Axis = [hemoglobin] (-20 to 20 µmol), X-Axis = 5 second intervals, red = O2Hb, blue = HHb, green = tHb. Asymmetry is demonstrated in physiologic response across bilateral PFM, even in controls. NIRS tracing decrease represents oxygen uptake required for muscular contraction. With neurogenic cases increased oxygen supply to tissue in less effected side occurs but lack uptake. This demonstrates a physiologic response despite inability to produce contraction detectable by perineometer.

**Conclusion:** This pilot study demonstrates the feasibility of transvaginal NIRS probe to measure novel physiologic data in the context of PFM exercise and provides new insight on how symmetry and coordination may contribute to PFM function.
THE EFFECTS OF ACUTE ISCHEMIA ON INTRAVESICAL PRESSURE IN AN ISOLATED PERFUSED WORKING BLADDER MODEL

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Presented By: Uzoma Anele, MD

Introduction: Chronic ischemia has been shown to negatively impact bladder function, but the effects of acute ischemia have not been fully elucidated. The present study used an isolated perfused working whole pig bladder model in combination with pig and human detrusor smooth muscle strips to examine the relationships between transient ischemia and bladder function.

Methods: Detrusor smooth muscle (DSM) strips were cut from fresh pig bladders obtained at a local slaughterhouse and from human cystectomy specimens. These strips were stretched and contracted at a standardized length with forces recorded in the setting of tissue starvation/hypoxia. In the whole pig bladder preparation, the vesical arteries were cannulated and perfused with physiologic buffer solution. A urethral catheter allowed filling at 40cc/min to a volume of 510cc, and bladders were then treated with intravascular carbachol or high-potassium superfusate to induce an isovolumetric contraction and void. A pressure sensor in the ureter continuously monitored vesical pressure during filling and contraction.

Results: When exposed to 120 minutes of starved/hypoxic conditions, both pig and human DSM strips demonstrated significant increase in resting tone, with a greater than two-fold increase in force over control seen in pig strips (n=7, p<0.05), and a three-fold increase in resting force in human strips (n=2). Exposure to atropine completely blocked this increase in resting tone seen during starvation. Starved DSM strips also showed a significantly weaker contraction, but nearly a full recovery of contractile force after 15 minutes in a fed/oxygenated buffer.

In the whole bladder preparation, when filling occurred under ischemic conditions, the end-fill vesical pressure was significantly elevated over control (n=3, p<0.025), with a 225% increase in filling pressure. Subsequent fill-void cycle with normal perfusate flow (non-ischemic conditions) showed a return to baseline end-fill vesical pressure, not significantly elevated over control (n=3, p=0.43). Preliminary whole bladder data also suggests that exposure to atropine blocks the ischemia-induced rise in filling pressure.

Conclusion: Transient ischemia leads to an acute increase in tone in the working bladder model, thus reducing compliance. Furthermore, this increased contractility is reversible with re-perfusion and may be blocked with anticholinergics, suggesting a relationship between acute ischemia and increased local acetylcholine release.
Poster #BS23
THE NATURAL HISTORY OF RADIATION CYSTITIS IN A RAT MODEL OF ACUTE AND CHRONIC LOWER URINARY TRACT DYSFUNCTION

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Presented By: Amy Diane Dobberfuhl, MD

Pelvic malignancy accounts for a third of new cancer cases and up to half receive radiation. Little is known about the natural history of radiation induced bladder dysfunction in rats. Our aim was to evaluate changes in lower urinary tract function over a 4-month period after radiation.

Thirty-six adult female Sprague Dawley rats were divided into 3 groups. Bladder was identified by computed tomography and irradiated on day 0 (0 Gy n=7; 20 Gy n=25; 30 Gy n=4). Void frequency and volume were recorded in 24 hour intervals using metabolic cages weekly (day 0-123). Bladders were assessed by cystometry and organ bath. Data were analyzed in SAS.

There were 6,078 ambulatory voids, representing 362 cage cycles and 16 time points. Four rats died from radiation proctitis. On Spearman analysis (0, 20, 30 Gy; n=4/group), void volume correlated with food intake (r=-0.41, p<0.01), rat weight (r=0.27, p<0.01) and stool output (r=-0.58, p<0.01). Meanwhile overnight urine output (r=0.05, p=0.54) and water intake (r=0.03, p=0.74) were independent of void volume. Using a mixed effect model to evaluate within and between group differences over time (Figure), there was a significant decrease in mean void volume after 20 Gy (p=0.014). High morbidity (n=2) and no recovery in void volume was noted in the 30 Gy group. Significant reduction in void volume and increase in frequency occurred during the first 30 days after radiation. At 3 months, recovery of void volume was noted only after 20 Gy. On cystometry (n=32) radiation resulted in a clear inverse relationship, where elevated threshold pressure correlated with loss of voiding efficiency. Radiation induced two distinct phenotypes at a threshold of 10% voiding efficiency. Small capacity end-stage bladders demonstrated high pressure (>40 cmH2O) uninhibited contractions, consistent with the chronic phase of bladder dysfunction. Whereas underactive bladders demonstrated high threshold pressure (>20 cmH2O), weak contractile amplitude (<10 cmH2O) and elevated post void residual (>700 uL).

After bladder radiation, acute dysfunction subsided by 1 month and there were two distinct phenotypes of chronic dysfunction noted at 3 months which were reflective of the human condition.
Funding: CIRM
Poster #BS24
CHRONIC MEALTIME SHIFT DISTURBS METABOLIC AND URINARY FUNCTIONS IN MICE: EFFECTS OF DAILY SUPPLEMENTATION OF ANTIOXIDANTS

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Presented By: Su Jin Kim

Introduction: Local circadian clocks are present in three bladder tissues and lumbar spinal cord and mice defective in circadian clock genes exhibit alterations in water intake and excretion rhythms, suggesting functional clock-dependent nature of micturition functions. Yet, the effects of chronic circadian disturbance on urinary functions and their precise mechanisms are yet unclear. Therefore, we examined the effects of chronic mealtime shift on circadian patterns of food intake, water consumption and urinary excretion in young adult male mice.

Methods: Normal and Per2::Luc knock-in mice were used. Water intake and urine output according to the circadian rhythm was checked using metabolic cage in 12:12 LD photoperiodic cycle and chronic mealtime shift. Circadian clock gene expression rhythm in bladder was evaluated with the activation of Per2 promotor. Per2 promoter activity in the bladder ex vivo from Per2::Luc Knock-in mice and reactive oxygen species (ROS) levels within the body were analysed. Circadian patterns of water intake and urinary excretion and the patterns of Per2 oscillation in the bladder were analyzed after antioxidants with melatonin or C3G.

Results: Circadian patterns of water intake and urinary excretion were significantly affected by mealtime shift. Chronic mealtime shift increased the amplitude of Per2 oscillation in the bladder. In addition, mealtime shift clearly delayed its acrophase by delaying several hours. Mealtime shift induces imbalances between anti-oxidative capacity and ROS levels within the body, indicating increased oxidative damages during the rest phase in mice. Daily supplementation of antioxidants such as melatonin or C3G at ZT23 could block the insulin resistance caused by chronic mealtime shift. However, supplementation of antioxidants neither affected the mealtime shift-induced circadian patterns of water intake and urinary excretion, nor the altered patterns of Per2 oscillation in the bladder cultured ex vivo.

Conclusion: From these results, we suggest that chronic mealtime shift causes metabolic disturbances and urinary alterations via distinct separable mechanisms.
COMPARISON OF DETRUSOR ULTRASTRUCTURE IN WOMEN AND MEN WITH BLADDER OUTLET OBSTRUCTION – A POTENTIAL ROLE FOR DIAGNOSTIC BLADDER BIOSPY

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Presented By: Amanda S.J. Chung, BSc, MBBS, MS, FRACS

Introduction: Previous ultrastructural studies in men with bladder outlet obstruction (BOO) have demonstrated that features of myohypertrophy (muscle fascicle derangement, collagenosis, variation in myocyte size/shape) were associated with worse voiding outcomes following transurethral resection of the prostate. The objective of this study was to compare ultrastructural features using the same standardised protocol in female and male patients with BOO to assess whether detrusor biopsy may have a role in the diagnosis of female BOO.

Methods: Thirteen patients (7 female, 4 male) with known BOO on urodynamic study and 2 control patients (female) with normal urodynamic studies underwent cystoscopy and detrusor muscle biopsy. The detrusor muscle biopsy specimens were processed for transmission electron microscopy. Previously established diagnostic criteria were used for ultrastructural analysis (eg muscle fascicle derangement, myocyte irregularity, myocyte cell separation, collagenosis, cellular degeneration). The severity of the ‘myohypertrophy pattern’ was assessed and correlated with clinical features.

Results: Features of myohypertrophy (muscle fascicle derangement, collagenosis, variation in myocyte size/shape) were present in the bladder specimens of all female and male patients with BOO but absent in the bladder specimens of control patients. Features of degeneration were present in varying degrees in the bladder specimens of all patients, consistent with previous studies showing that degeneration correlates with age rather than degree of obstruction. Myohypertrophy features were less marked in females with BOO compared to males with BOO, except in one female with prolonged voiding dysfunction after colposuspension. Myohypertrophy features were also seen in one patient with 4 months history of an obstructive sling. Semi-quantitative analysis of ultrastructural features showed severity of myohypertrophy correlated with duration and degree of obstruction in female BOO.

Conclusion: We have demonstrated similar ultrastructural features using a standardized protocol in detrusor biopsies of female patients with BOO compared to male BOO. In particular the myohypertrophy pattern is present in female BOO and is less marked than male BOO but appears to correlate with duration and severity of obstruction. Given the uncertainty in diagnosis of female BOO on urodynamic parameters, the detrusor biopsy may have a potential role in the diagnosis of female BOO.
PROPHYLACTIC TREATMENT MARKEDLY IMPROVES BLADDER CAPACITY FOLLOWING PELVIC RADIATION

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Presented By: Matthew O. Fraser, PhD

Introduction: Radiation cystitis (RC) occurs frequently following therapeutic radiotherapy for pelvic malignancy. The acute phase of RC may be due to loss of urothelial barrier function. In some patients, the late phase of RC has devastating health outcomes. We hypothesize that the acute phase contributes or is directly responsible for the late phase. Utilizing our previously established animal model, we tested a novel therapeutic strategy to prevent the acute phase of RC.

Methods: Seven female Sprague Dawley rats received pre-radiation treatment with triamcinolone acetonide, 200 mg/ml in 50% dimethyl sulfoxide (DMSO) solution, 0.5 ml instilled into the bladder via the indwelling bladder catheter, while 10 served as controls with normal saline instillation. All animals received single dose bladder irradiation with 20 Gy using a CT image guided irradiator while retaining instillates. Bladder function was evaluated on a weekly basis for all animals for 9 weeks by conscious restrained cystometry using sequential infusions of normal saline, 300 and 500 mM KCl (≥ 60 minutes for each infusate; 0.10 ml/min flow rate). Cystometric functional and total bladder capacities (FBC, TBC) were recorded. Data were analyzed using 2−Way ANOVA and linear regression models with post-hoc testing.

Results: Prophylactic treatment resulted in marked improved in mean TBC from week 3 onward as follows: up to 64% greater following saline challenge (P=0.0008), up to 72% greater following 300KCl challenge (P=0.0021), and up to 91% greater following 500 KCl challenge (P=0.0001). Similarly mean FBC was consistently higher from 3 week onward as follows: by up to 38% greater following saline challenge (P=0.0034), up to 37% greater following 300KCl challenge (P=0.003), up to 49% greater following 500 KCl challenge (P<0.0001). Figure shows mean TBC and FBC.

Conclusion: These data demonstrate that prophylactic treatment with triamcinolone acetonide in DMSO solution results in improved cystometric profile in irradiated rats when compared to controls. These results may be translatable into future therapies to prevent RC in patients undergoing pelvic radiotherapy.

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INDIVIDUALIZED ADD-ON TREATMENT BASED ON THE DIFFERENCE OF RECEPTOR OF ALPHA BLOCKER IN ANIMAL MODELS OF OVERACTIVE BLADDER AND BENIGN PROSTATE HYPERPLASIA

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Presented By: Sung Tae Cho

Introduction: α1-antagonists are widely used for the treatment of lower urinary tract symptoms (LUTS). However, add-on therapy using different α1-antagonist has not yet been determined. The aim of this study was to investigate the efficacy and safety of add-on therapy using various α1-antagonists in animal models of overactive bladder (OAB) and benign prostatic hyperplasia (BPH) through urodynamic evaluation and measurements of angiogenesis related factors.

Methods: Female SD rats were used in OAB study, while male SD rats were used in BPH study. OAB was induced by i.p. injection of cyclophosphamide (75 mg/kg) every third day for 10 days. The female rats were divided into six groups (n=10 in each group): control group, OAB group, alfuzosin-treated OAB group, naftopidil-treated OAB group, tamsulosin-treated OAB group and naftopidil with tamsulosin-treated OAB group. BPH was induced by bilateral orchiectomy and injection of testosterone (20mg/kg) 0.5ml s.c. The male rats were also divided into six groups (n=10 in each group): control group, BPH group, alfuzosin-treated BPH group, naftopidil-treated BPH group, tamsulosin-treated BPH group and naftopidil with tamsulosin-treated BPH group. The rats in the treated groups orally received drugs once a day for 14(OAB) and 30(BPH) consecutive days. Cystometry was performed in 14(OAB) and 30(BPH) days. After the cystometry the expression levels of VEGF, IGF-1 and TGF-β of the bladder and prostate were quantified by Western blotting.

Results: On cystometry, the single α1-antagonist therapy showed more improved voiding function in OAB and BPH models than combined therapy in terms of contraction pressure and time. In addition, α1-antagonists facilitated the recovery of tissues from injury caused in animals with OAB and BPH. Rats with OAB and BPH showed increased expressions in angiogenesis related factors including VEGF, IGF-1, and TGF-β. On the other hand, both single and combined α1-antagonist therapies suppressed increases of angiogenetic factors in the bladder and prostate.

Conclusion: In the present study, single therapy using tamsulosin showed the best effect in urodynamics evaluation and measurement of factors using western blot. We expected that combined therapy would be better than single therapy due to various pharmacological properties. However, there was no superiority of combined therapy for treatment of OAB and BPH in this study.
Poster #BS28
COMPARISON OF ANTERIOR VAGINAL WALL INDENTATION PARAMETERS IN AGE-MATCHED CONTROL AND PROLAPSE PATIENTS USING AN OPERATOR INDEPENDENT ARTIFICIAL FINGER

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1UTA; 2UT Southwestern Medical Center

Presented By: Connie Nan Wang

Introduction: To compare reaction forces of the anterior vaginal wall in control (C) and prolapsed (P) women in response to pressure applied at different angles of indentation through an automated artificial finger equipped with a distal sensor.

Methods: Following IRB approval, a tripod-mounted, artificial finger equipped with a calibrated, piezoresistive sensor at its tip and automated by NI LabView 2015 software for motion control via an actuator was used to create anterior vaginal wall deformations at 10, 15 and 20 degree angles. Age-matched women in the C and P groups were compared. All measurements were performed in the supine position in the operating room, with patients under general anesthesia prior to the start of the operation and after the bladder was drained. Each deformation included a 1 second upwards indentation, a 1 second maintenance “hold”, and a 1 second return of the fingertip to the baseline. Measurements were done in triplicate with a 3 second interval between each deformation sequence. Real-time voltages, equivalent to reaction forces sensed by the sensor during each indentation, were modeled as function of motion profiles and analyzed in Excel (See Figure). The motion profile of each indentation was used to calculate baseline voltage, amplitude change over the 1 second interval of upwards indentation, and slope of the upwards indentation curve in its median 0.5 second range.

Results: Five women of similar age group (mean 64, 51-73) were studied in each group. A significant difference was observed between all degrees of indentation in baseline voltage in P and C groups (p<0.05). At 10 and 20 degrees of indentation, there was a significant difference in amplitude change between P and C groups, while there was a significant difference in slope of indentation at 15 degrees between P and C groups.

Conclusion: The biomechanical properties of the human anterior vaginal wall can be objectively determined by a new device resembling the human finger. This mounted, free-standing artificial finger can apply a predictable and reproducible deformation to the anterior vaginal wall to compare the indentation properties of vaginal tissue in prolapsed and non-prolapsed conditions.
Poster #BS29
BETA-3 ADRENOCEPTOR EXPRESSION IN THE UTEROSACRAL LIGAMENT IN THE POSTMENOPAUSAL WOMEN WITH PELVIC ORGAN PROLAPSE

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Presented By: Woojin Chong, MD

Introduction: Pelvic organ prolapse (POP) affects over 50% of adult women. It is commonly associated with a variety of lower urinary tract symptoms like overactive bladder (OAB). A β3-adrenoceptor (β3-AR) agonist (mirabegron) has been used to manage OAB. It is known that β3-ARs are found in the bladder detrusor smooth muscle (SM). Stimulation of β3-AR relaxes the detrusor SM and consequently improves bladder compliance in OAB patients. If such receptors are present in the pelvic floor such as uterosacral ligaments (USLs), β3-AR agonist may also relax the SM in the pelvic floor. As a first step, this pilot/descriptive study is designed to investigate the presence of β3-AR expression in the USLs in the postmenopausal (PMP) women with POP.

Methods: Ten PMP women with known POP were recruited and consented. A piece of the distal USL was collected unilaterally at the time of the surgery; placed immediately in freshly prepared medium; and transferred to the Pathology lab for further histologic evaluation. H&E and immunohistochemistry (IHC) were performed. Positive (human female bladder) and negative (omission of primary antibody) controls were run in parallel. Imaging was captured using a digital camera (Nikon Digital sight D5-F12). Percentages of SM cells & connective tissues in the USLs and presence/percentage of β3-AR expression in SM cells were subjectively measured by an experienced pathologist. The demographic variables were expressed as means ± SEM of the number of subjects. The staining results were expressed as descriptive analysis.

Results: Under high power field, the USLs were mainly composed of SM cells (81.5% ±7.47) and connective tissues (16.5%±7.9). On IHC analysis, 6 out of 9 specimens expressed β3-AR in SM cells with different level of expression (1 specimen failed proper staining). Figure 1 presents H&E and IHC analysis.

Conclusion: The majority of the distal USLs were composed of SM cells. β3-ARs are expressed in 67% of the USLs specimens from women with POP. Considering that both POP and OAB are frequently seen in the elderly population, the effect of β3-AR agonist on the pelvic floor tissues should be investigated further.

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Poster #BS30
FEMALE PELVIC FLOOR MECHANICS: ANALYSIS OF PRESSURE DATA AND IMAGING
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Presented By: Tova Ablove, MD

Introduction: Our aim is to measure and map the force applied to the pelvic floor in the sitting, standing, and supine positions. Our hypothesis is that the force on the pelvic floor in the standing position is lower due to deflection of the downward visceral force by lumbar lordosis of the spine.

Method: A fresh female cadaver was acquired from the University at Buffalo School of Medicine. A 4x8cm pressure array (Pressure Profile Systems; Los Angeles, Ca) was placed onto the pelvic floor just above the levator ani muscles and abutting the midline structures via a retroperitoneal approach. T-DOC urodynamic catheters were placed into the hollow of the sacrum and behind the pubic symphysis in the space of Retzius. A third catheter was placed at the vaginal apex, where standard vaginal pressures are known to act as a control. The cadaver was placed in the supine, sitting and standing positions and 10 measurement sets were taken. The cadaver also had CT-scans of the abdomen and pelvis in the supine position and X-rays in the sitting and standing positions. The analysis of variance statistical test was used to compare mean pressures between groups for statistical differences.

Results: The pressure array values in cm H2O − supine 47.08±10.67, sitting 80.78±12.80, and standing 24.45±13.89 are all statistically different from each other with p-values <0.001. The UDS pubic symphysis values − supine 14.60±3.44, sitting 19.19±5.07, and standing 15.10±3.93; were not statistically different. The UDS sacrum values − supine 16.80±1.14, sitting 16.20±2.90, and standing 9.80±3.16; standing position was statistically lower than either of the other two p-value <0.001. Pressure at the vaginal apex sitting on a donut (to simulate the UDS chair) was 25.20±1.75.

Conclusion: The standing position has the lowest pressure measurements particularly at the sacrum supporting the hypothesis that lumbar lordosis shields the pelvic floor from intra-abdominal pressure. The pressures on the array were highest in the sitting position when lumbar lordosis is least prominent. Further research is needed to confirm these findings.

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<th>3D reconstruction of the pelvic floor in the supine, sitting, and standing positions with the associated radiologic image and pressure array data</th>
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Poster #BS31
FRESH HUMAN CADAVER VAGINOPLASTY SURGICAL PROSECTIONS TO GUIDE SURGICAL TECHNIQUE, POST-OPERATIVE CARE, AND THE DESIGN OF A NOVEL NEOVAGINAL DILATOR AND DOUCHING DEVICE
Maurice Garcia, MD, MAS
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Presented By: Maurice Garcia, MD

Introduction: Gender affirming vaginoplasty surgical techniques vary, and their description is often limited to "how to", but less often "why"- or "why not". Answers to the latter can be especially enriching for surgeons. We highlight here several observations about genetic male pelvic anatomy as it relates to vaginoplasty for MtF transgender women, and describe how studies using anatomic dissection and histology support specific techniques and care guidelines.

Methods: 1. We review the anatomic basis for a sharp peri-prostatic surgical approach for creation of the neovaginal cavity, compared to the traditional sub-bulbar approach; 2. We describe anatomic dissection findings using 15 fresh cadavers on which we performed vaginoplasty surgery (penile inversion), imaging, and sagittal sectioning; 3. We describe anatomic findings using fresh cadavers after vaginoplasty surgery to highlight challenges associated with common douching techniques.

Results: Anatomic dissection and immunohistochemistry results showed that the sharp dissection we describe is associated with incision through significantly fewer blood vessels and sensory-motor nerves as compared to the traditional surgical approach. Imaging studies in living trans women and fresh cadavers after vaginoplasty suggest that the shape of the neovaginal cavity is S-shaped. We describe a novel dilator-douche design we have developed (U.S. Patents Pending). Findings also suggest that it is less likely that the apex of the vaginal vault is effectively irrigated with douching using conventional douche devices and techniques.

Conclusion: Our anatomic findings suggest that a sharp surgical approach upon the apex of the prostate gains access to a surgical plane anterior to DVF as distally as possible, poses less risk to immediate or delayed injury to the rectum, and injures fewer collateral nerves (many of which are likely sensory) during direction of the neovaginal space. The neovagina in a transgender woman is S-shaped, and reflects the shape of the dilator design we introduce. Our findings also suggest that the deepest part of the neovagina is unlikely to be irrigated with douching. Poor hygiene of the vault may contribute to general poor hygiene of the neovagina, and granulation tissue The novel dilator-douche device design we describe addresses this, as it allows douching to occur through the dilator.

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Poster #BS32
NANOPARTICLE ENHANCED ADHESION OF MUSSEL INSPIRED HYDROGELS FOR TISSUE INTERFACING
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Presented By: Nikhil Pandey, MS

Introduction: Bioadhesives are synthetic or natural polymer based materials that adhere to biological tissues. Utilizing the strategy employed by mussels to stick to wet surfaces is attractive for better bioadhesiveness. Nanoparticles (NPs) can glue two liver tissues together, but the adhesive strength is low. Our goal was to combine nanoparticles to a mussel-inspired hydrogel system to enhance the tissue adhesive properties of these nanocomposites.

Methods: A mussel-inspired polymer (HA-Dopa) was synthesized by grafting dopamine onto sodium hyaluronate (HA) (MW:151-300KDa) under aqueous conditions using EDC-NHS carbodiimide chemistry. Several MINs were made from combinations of HA-Dopa polymer with poly (D,L-lactic-co-glycolic acid) (PLGA) nanoparticles (NPs), or N-hydroxysuccinimide (NHS) modified PLGA NPs (PLGA-NHS) and polydopamine (polydopa) nanoparticles using sodium metaperiodate (PI) as a cross-linker. The MINs were characterized for their wet tissue adhesiveness using a porcine skin-muscle lap interface (Figure 1). Uniaxial lap shear testing of porcine skin-muscle interface was performed using a MTS insight workstation at a cross head speed of 10mm min-1. The effect of nanoparticle concentration (0-20%w/v) and size on the tissue adhesion was also studied.

Results: The HA-Dopa had a dopamine content of 32.7 ± 1.3%. Mechanical testing of the MINs on porcine skin-muscle interfaces (Figure 1) revealed that the inclusion of nanoparticles in HA-Dopa hydrogels enhanced the tissue adhesion up to a maximum lap shear strength value of 47.1 ± 3.2 kPa in the MIN-polydopa group, compared to HA-Dopa alone (20.1 ± 2.8 kPa). The variation of nanoparticle concentrations revealed a concentration-dependent increase in adhesive strength in all groups of MINs.

Conclusion: A nanocomposite (MIN) of hyaluronate based biomimetic, mussel-inspired hydrogel and PLGA or polydopamine nanoparticles as a tissue adhesive was developed. The combination of nanoparticles with HA-Dopa hydrogels resulted in an increase of tissue adhesion strength. Nanocomposites can serve as a tissue adhesive for applications in tissue interfacing, such as tissue glues.

Financial Funding: none

![Image](A) Direction of applied load

Skin
Mussel Inspired Nanocomposite
Muscle

![Image](B) Lap shear strength of HA-Dopa hydrogel and MIN incorporated with PLGA (MIN-PLGA), NHS modified PLGA nanoparticles (MIN-PLGA-NHS), and polydopa with different HA-Dopa concentration (1-40%w/v) and fixed NP concentration (12.5%w/v).
ACCURACY OF THREE NON-INVASIVE METHODS FOR BLADDER VOID VOLUME ANALYSIS IN HEALTHY VOLUNTEERS

Naomi Vinod1, Anna S. Nagle, PhD2, Hameda A. Naimi, BS3, Derek Sheen, BS3, Hiren Kolli, BS3, Uzoma A. Anele, MD3, Adam P. Klausner, MD3,4 and John E. Speich, PhD7

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Presented By: Naomi Vinod, BS

Introduction: New ultrasound technologies are being developed which may ultimately lead to non-invasive urodynamics. Successful implementation of these technologies will likely require highly accurate non-invasive measurements of bladder volume. Available non-invasive methods for bladder volume assessment include 3D ultrasound, ultrasound-based BladderScan, and Uroflow meters. This study compared the accuracy of these methods of bladder volume measurement.

Methods: Participants determined to have low urgency through ICIq-OAB were recruited for the prospective study. Each participant consumed two liters of G2 Low Calorie Gatorade in order to fill their bladders. Once bladder capacity was reached, participants were asked to void into a Uroflow machine, which measured voided volume. Three BladderScans were recorded pre- and post-void and averaged to determine voided volume (pre-void volume minus post-void volume). Conventional transabdominal Ultrasound 3D images were taken pre- and post-void, and then traced in six planes using GE’s 4D View software to determine bladder volume and calculate voided volume. Ultrasound, BladderScan, Uroflow, and observed volumes were obtained and analyzed. The voided volume measurements were compared to the observed volume (control) collected in a 1000 mL beaker.

Results: Participants had mean age of 23±0.7 years, BMI 24±1.3 kg/m2, and bladder volume 559±34 ml. The Uroflow was the most accurate method in determining the voided volume of the bladder with an RMS error of 7% while the BladderScan and ultrasound yielded percent errors of 13% and 24%, respectively when compared to the control (Fig 1).

Conclusion: Uroflow volumes exhibited the lowest error when compared to the observed voided volume followed by the BladderScan. 3D ultrasound tended to underestimate bladder volume in this group of healthy individuals, likely because the bladders at full capacity were usually too large (>500 ml) to fully visualize. This information may be used to generate correction factors enabling more accurate ultrasound-based assessments of bladder volumes in an attempt to develop new metrics for non-invasive urodynamics.

![Volume Averages](image-url)

**FIGURE 1.** Comparisons of the analyzed volumes from the four specified methods: conventional ultrasound (US), BladderScan, (BS), Uroflow, and observed. Shown are the average voided volume for these methods. Error bars show standard error.
CHARACTERIZATION OF BLADDER SENSATION EVENT DESCRIPTIONS DURING NON-INVASIVE ORAL HYDRATION IN HEALTHY ADULTS

Hameeda Naimi1, Anna S. Nagle, PhD2, Naomi N. Vinod1, Hiren Kolli1, Derek Sheen1, Uzoma Anele, MD1, Stefan G. De Wachter, MD, PhD3, John E. Speich, PhD2 and Adam P. Klausner, MD4

1Department of Surgery/Division of Urology, Virginia Commonwealth University School of Medicine, Richmond, VA; 2Department of Mechanical & Nuclear Engineering, Virginia Commonwealth University School of Engineering, Richmond, VA; 3Department of Urology, University Hospital Antwerpen, Edegem, University of Antwerpen, Wilrijk, Belgium; 4Department of Surgery/Division of Urology Hunter Holmes McGuire Veterans Affairs Medical Center, Richmond, VA

Presented By: Hameeda A. Naimi, BS

*SUFU Clinical Essay Winner

Introduction: Aside from ICS-defined verbal sensory thresholds, there is currently no standardized method of characterizing changes in bladder sensation during filling. The purpose of this investigation was to characterize real-time bladder sensation events using bladder sensation meter during oral hydration in individuals with normal bladder function.

Methods: Participants were enrolled in an accelerated hydration study consisting of three consecutive visits, 1 week apart. Participants drank 2L Gatorade-G2® and utilized a previously developed sensation meter to record real-time bladder sensation (0-100%), verbal sensory thresholds, and newly added sensation descriptors of “tense,” “pressure,” “tingling,” “painful,” and “other” for two consecutive fill-void cycles.

Results: Data from 21 participants (12 female/9 male) was obtained and demonstrated an average of 8-9 sensation events per fill with no differences in the total number of sensation events and volume between sensation events (fill 1 vs. fill 2). An increased number of sensation events occurred at higher capacity quartiles. Event descriptors of “pressure” and “tingling” were the most commonly chosen descriptors in both fills (Figure 1).

Conclusion: Our new sensation meter, updated to include sensation event descriptors of “tense,” “tingling,” “pressure,” and “pain,” enables a more comprehensive understanding of bladder sensation as well as real-time identification, quantification, and characterization of sensation events. The study demonstrates increased events per fill compared to ICS standards, acceleration of sensation during filling, and unique sensation event descriptor patterns. This technology may be useful in the identification of novel sensation patterns associated with OAB and aging.

Figure 1. Bottom/top lines indicate min/max. Bottom/top box borders indicate 25th/75th quartiles, and middle line represents median. Mean is indicated with a “*” sign only if different from median by >10%. Descriptors and the *sensation at which they were selected (A. fill 1 and B. fill 2, n=18). Each mark (black triangle) represents one event where a specific descriptor was selected. Descriptors are classified as pink (tense), green (pressure), blue (tingling), and orange (pain). Both fills had a significant difference in the frequency of descriptor selection between tense and pressure (A. p=0.0019 and B. p=0.0055) and tense and tingling (A. p=0.0001 and B. p=0.0043).

***2018 Clinical Science Prize Essay Award Recipient:
Podium #1
5 YEAR RESULTS OF THE PROSTATIC URETHRAL LIFT (PUL) PIVOTAL STUDY
Michael Trotter, MD1, Claus Roehrborn, MD2 and Daniel Rukstalis, MD3
1Midtown Urology Associates; 2UT Southwestern Medical Center, Dallas, TX; 3Wake Forest Baptist Health Urology, Winston-Salem, NC
Presented By: Michael D. Trotter, MD

Introduction: The Prostatic Urethral Lift (PUL) is a minimally invasive treatment for symptomatic benign prostatic hyperplasia (BPH) that has been shown to provide rapid, significant, durable relief with minimal side-effects, including preservation of sexual function. Here we present the final 5 year results of the L.I.F.T. pivotal trial, the largest, prospective, randomized study of this treatment.

Methods: During the PUL procedure, small UroLift® implants are placed to mechanically retract the obstructive prostatic lobes and enlarge the urethral lumen. There is no thermal injury to the prostate tissue. In 19 centers across North America and Australia, 206 men were randomized to PUL (n=140) or sham control (n=66). Enrollment criteria included age >= 50 years, International Prostate Symptom Score (IPSS) >= 13, peak flow rate <= 12 mL/s and prostate volume 30-80cc. Both control (sham) and PUL subjects received rigid cystoscopy. Subjects and assessors were kept blinded to the treatment arm for 3 months. PUL subjects were assessed through 5 years using measurements including IPSS, quality of life (QOL), BPH Impact Index (BPHII), peak flow rate (Qmax) and sexual function questionnaires.

Results: PUL subjects experienced significant symptom improvement by 1 month (IPSS 44% and QOL 42%, p<0.001) that remained durable through 5 years (IPSS 38% and QOL 54%, p<0.001). BPHII improvement was sustained and peak urinary flow rate remained improved 41% at 5 years. Sexual function was preserved as no patient experienced de novo, sustained, erectile or ejaculatory dysfunction. Average ejaculatory function and bother scores were improved (p<0.001) and average erectile function scores were stable. Adverse events were typically mild and transient.

Conclusion: The 5 year results of the L.I.F.T. study show that this minimally invasive, mechanical approach to relieving urethral obstruction provides rapid, significant relief that is durable to 5 years. There is minimal morbidity, and sexual function is preserved. The PUL procedure is a viable option for patients seeking rapid, meaningful, lasting symptom relief with low risk, including preservation of sexual function.

Source of Funding: NeoTract, Inc.
Podium #2
COMPARATIVE EFFECTIVENESS OF BENIGN PROSTATE ENLARGEMENT PROCEDURES AT ENABLING UROLOGIC MEDICATION DISCONTINUATION
Bradley Gill, MD, MS, Navin Sabharwal BA, Elodi Deilubanza, MD, James Ulchaker, MD, Khaled Fareed, MD, MBA and Daniel Shoskes, MD
Cleveland Clinic
Presented By: Bradley C. Gill, MD, MS

Introduction: Large, comparative effectiveness analyses of transurethral prostate procedures (TUPPs) enabling discontinuation of urologic medications (Rx) are lacking. This study tested the hypothesis that tissue-eliminating procedures confer greater medication discontinuation rates than tissue-necrosing procedures.

Methods: All TUPPs in a large tertiary system from 2001-2016 were identified. Demographics, procedure type, and urologic Rx use preoperatively, 3-12 months postoperatively, and over 12 months postoperatively were collected. Tissue-eliminating procedures included transurethral resection (TURP) and laser photovaporization (PVP), tissue-necrosing procedures were microwave (TUMT) and radiofrequency needle ablation (TUNA), and simple prostatectomy (SP) was a gold-standard comparator. Rx were “discontinued” if no longer an active prescription starting 3 months postoperatively and were “resumed” if ever active following this. Rx were “initiated” if active 3 months or more postoperatively and not active preoperatively.

Results: A total 5150 TUPPs were analyzed (Table 1). Mean age ranged from 69.1-71.8 years across procedures. Preoperative Rx significantly differed across procedures, except Beta-3 agonist. Alpha blockers were the most common and Beta-3 agonist were the least common Rx preoperatively. Tissue-eliminating TUPPs had greater rates of Rx discontinuation than tissue-necrosing procedures, while the latter had the highest Rx resumption and initiation rates. Alpha blocker and 5-alpha reductase inhibitor discontinuation, resumption, and initiation rates significantly differed across procedures, whereas all but anticholinergic discontinuation rates did, too. Only Beta-3 agonist initiation differed across procedures. Rates of Rx discontinuation were greatest for SP relative to TUPPs and rates of Rx resumption and initiation were lowest for SP compared to TUPPs, as well.

Conclusion: Relative to tissue-necrosing transurethral prostate procedures, tissue-eliminating procedures achieved superior rates of urologic medication discontinuation, resumption, and de novo initiation. Simple prostatectomy outperformed all transurethral procedures in these regards.

Table 1: Rates of Urologic Medication Utilization by Procedure Type

<table>
<thead>
<tr>
<th>Medication Type</th>
<th>Medication Utilization</th>
<th>PVP (N=2549)</th>
<th>TURP (N=2304)</th>
<th>TUMT+TUNA (N=165)</th>
<th>SP (N=132)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>5ARI</td>
<td>baseline</td>
<td>44.4</td>
<td>51.8</td>
<td>37.0</td>
<td>53.8</td>
<td>&lt;0.01*</td>
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<tr>
<td></td>
<td>discontinued</td>
<td>80.1</td>
<td>78.7</td>
<td>59.0</td>
<td>98.6</td>
<td>&lt;0.01*</td>
</tr>
<tr>
<td></td>
<td>resumed</td>
<td>20.8</td>
<td>15.1</td>
<td>38.9</td>
<td>2.85</td>
<td>&lt;0.01*</td>
</tr>
<tr>
<td></td>
<td>initiated</td>
<td>15.7</td>
<td>9.5</td>
<td>37.5</td>
<td>1.64</td>
<td>&lt;0.01*</td>
</tr>
<tr>
<td>Alpha Blocker</td>
<td>baseline</td>
<td>79.7</td>
<td>79.6</td>
<td>83.6</td>
<td>68.2</td>
<td>0.01*</td>
</tr>
<tr>
<td></td>
<td>discontinued</td>
<td>80.3</td>
<td>79.2</td>
<td>60.1</td>
<td>93.3</td>
<td>&lt;0.01*</td>
</tr>
<tr>
<td></td>
<td>resumed</td>
<td>28.4</td>
<td>17.7</td>
<td>53.0</td>
<td>8.33</td>
<td>&lt;0.01*</td>
</tr>
<tr>
<td></td>
<td>initiated</td>
<td>25.5</td>
<td>17.5</td>
<td>51.9</td>
<td>0.00</td>
<td>&lt;0.01*</td>
</tr>
<tr>
<td>Anti-Cholinergic</td>
<td>baseline</td>
<td>18.4</td>
<td>21.3</td>
<td>23.6</td>
<td>18.2</td>
<td>0.947*</td>
</tr>
<tr>
<td></td>
<td>discontinued</td>
<td>70.9</td>
<td>73.3</td>
<td>79.5</td>
<td>91.7</td>
<td>0.06</td>
</tr>
<tr>
<td></td>
<td>resumed</td>
<td>15.9</td>
<td>13.1</td>
<td>32.3</td>
<td>4.55</td>
<td>0.02*</td>
</tr>
<tr>
<td></td>
<td>initiated</td>
<td>21.7</td>
<td>15.6</td>
<td>33.3</td>
<td>11.1</td>
<td>&lt;0.01*</td>
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<tr>
<td>Beta-3 Agonist</td>
<td>baseline</td>
<td>0.86</td>
<td>0.91</td>
<td>0.61</td>
<td>0.00</td>
<td>0.476</td>
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<tr>
<td></td>
<td>discontinued</td>
<td>72.7</td>
<td>95.2</td>
<td>100.0</td>
<td>-</td>
<td>0.19</td>
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<tr>
<td></td>
<td>resumed</td>
<td>12.5</td>
<td>5.00</td>
<td>0.00</td>
<td>-</td>
<td>0.61</td>
</tr>
<tr>
<td></td>
<td>initiated</td>
<td>4.55</td>
<td>2.23</td>
<td>5.49</td>
<td>1.52</td>
<td>&lt;0.01*</td>
</tr>
</tbody>
</table>

* significant at α = 0.05
Podium #3
EFFECT OF AGE ON OUTCOMES OF TRANSVAGINAL NATIVE TISSUE REPAIRS FOR APICAL VAGINAL PROLAPSE
Lindsay Kissane, MD1, Isuzu Meyer, MD1, Kimberly Martin, PhD2, Jubilee Tan, MD1, Kathryn Miller, MD3 and Holly Richter, MD1
1University of Alabama at Birmingham, Division of Urogynecology and Pelvic Reconstructive Surgery, Birmingham, AL; 2University of Alabama at Birmingham, Department of Epidemiology, Birmingham, AL; 3University of Alabama at Birmingham, Department of Obstetrics and Gynecology, Birmingham, AL
Presented By: Lindsay Martin Kissane, MD

Introduction: There is a paucity of data regarding impact of aging on surgical outcomes in women undergoing vaginal prolapse repair. The primary aim was to compare subjective treatment success in older versus younger women at least 3 years post transvaginal native tissue repair for apical prolapse. Post-operative symptom severity, quality of life (QoL), overall symptomatic improvement, surgical complications, and retreatment were also examined.

Methods: Women who underwent primary transvaginal native tissue repair for apical prolapse between 2011 and 2013 were eligible for this retrospective cohort study. Subjects were mailed the Pelvic Floor Distress Inventory (PFDI-20), Pelvic Floor Impact Questionnaire (PFIQ-7), Patient Global Impression of Improvement (PGI-I). Patients were categorized as "younger" (age<70) or "older" (age≥70). Primary outcome was treatment success defined as "no" to "do you usually have a bulge or something falling out that you can see or feel in your vaginal area" from the PFDI-20.

Results: Of 641 eligible patients, response rate was 49% for younger and 56% for older groups (p= 0.13). Median follow-up time was 58 months for each group (Interquartile range [IQR] 18 for younger and IQR 14 for older). Median age was 61 (IQR 11) for younger and 74 (IQR 5) for older subjects. No difference in concomitant procedures were noted between groups (all p>0.05). Treatment success was noted in 76% of younger versus 84% older women (p= 0.11). Post-operative PFDI-20 and PFIQ-7 total and subscale scores, and PGI-I were similar between groups (table, all p>0.05). A composite success, defined as having absence of bulge symptoms and no retreatment, was noted in 69.9% of younger and 81.1% of older subjects (p=0.04). Retreatment rate and surgical complications were similar between groups (table, both p>0.05).

Conclusion: Older and younger women had similar subjective success rates at least 3 years post transvaginal native tissue prolapse repair. Using a composite success outcome, older women had significantly higher success rates. Postoperatively, both groups reported similar symptom severity and condition-related QoL. This information may be helpful in counseling regarding surgical expectations and decision making.

<table>
<thead>
<tr>
<th></th>
<th>Younger women (≤70 years) N=237</th>
<th>Older women (≥70 years) N=90</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Symptomatic success - n (%)</td>
<td>180 (76.3)</td>
<td>76 (84.4)</td>
<td>0.11</td>
</tr>
<tr>
<td>Composite success - n (%)</td>
<td>165 (59.3)</td>
<td>73 (81.1)</td>
<td>0.04</td>
</tr>
<tr>
<td>PFDI – median (IQR)</td>
<td>47.9 (62.2)</td>
<td>63.1 (86.5)</td>
<td>0.81</td>
</tr>
<tr>
<td>POPDI</td>
<td>12.5 (33.2)</td>
<td>12.5 (25)</td>
<td>0.64</td>
</tr>
<tr>
<td>CRADI</td>
<td>15.6 (28.1)</td>
<td>19.4 (31.3)</td>
<td>0.30</td>
</tr>
<tr>
<td>UDI</td>
<td>20.8 (37.5)</td>
<td>16.7 (41.7)</td>
<td>0.43</td>
</tr>
<tr>
<td>PFIQ – median (IQR)</td>
<td>0.5 (42.9)</td>
<td>0.5 (47.6)</td>
<td>0.49</td>
</tr>
<tr>
<td>POPIQ</td>
<td>0 (4.8)</td>
<td>0 (3.5)</td>
<td>0.32</td>
</tr>
<tr>
<td>CRAIQ</td>
<td>0 (14.3)</td>
<td>2.4 (27.8)</td>
<td>0.22</td>
</tr>
<tr>
<td>UIQ</td>
<td>4.8 (23.8)</td>
<td>4.8 (47.6)</td>
<td>0.71</td>
</tr>
<tr>
<td>PGI-I – median (IQR)</td>
<td>2 (2)</td>
<td>2 (2)</td>
<td>0.48</td>
</tr>
<tr>
<td>Retreatment – n (%)</td>
<td>24 (10.1)</td>
<td>7 (7.8)</td>
<td>0.52</td>
</tr>
<tr>
<td>Surgical complications – n (%)</td>
<td>31 (13.0)</td>
<td>8 (8.9)</td>
<td>0.30</td>
</tr>
</tbody>
</table>
Podium #4
CLINICAL EXPERIENCE WITH POSTERIOR TIBIAL NERVE STIMULATION IN THE ELDERLY
Cristina Palmer, DO, Nobel Nguyen and Gamal Ghoniem, MD, FACS
University of California Irvine, Orange, CA
Presented By: Cristina J. Palmer, DO

Introduction: According to AUA/SUFU guidelines, PTNS has been recognized as a third line treatment in the management of OAB. OAB is a condition that affects up to 10-26% of adult males and 8-42% of adult females, with increasing prevalence with age. The elderly population is unique, with increased medical comorbidities and the possibility for cognitive or functional deficits. To date, there is a paucity of studies looking at this specific patient population in regard to PTNS. We aim to evaluate the use of PTNS in an elderly population and determine treatment response, concomitant therapies, and alternate treatments needed after therapy.

Methods: We performed a chart review of patients aged 65 or older undergoing PTNS a single institution over a 6 year period, with IRB approval. We examined clinicopathologic variables potentially associated with the outcomes of interest.

Results: In total, 53 patients age 65 or older underwent PTNS (12 sessions) between 2011-2017, 23 male (45.3%), 29 female (64.7%). We used a non-elderly control group of 20 patients. Mean age was 75.75 years (range 65-93), mean BMI 26.33 kg/m2 (range 17.4-43.9 kg/m2). 18 patients had 1-2 medical comorbidities, 23 patients had 3-4 comorbidities, 12 patients had > 5 comorbidities. 36 patients (69%) utilized anticholinergics prior to PTNS, 5 used a β-3 agonist, 3 had botox injections. After PTNS, 37 patients (70%) reported improvement of their symptoms. 21 (39%) used combination therapy during PTNS. 7 patients used an anticholinergic after PTNS, 6 used a β-3 agonist, 5 had botox injections, and 2 sacral neuromodulation. Average BMI of 25.078 kg/m2 with improvement with PTNS. Average BMI without improvement with PTNS was 29.23 kg/m2. When looking at demographic variables, obese BMI (30+ kg/m2) was the only variable predicting failure of response (p=0.0024), the same as our control group. We then performed a logistic regression, multivariate analysis; none of these factors were predictive of the improvement of treatment after PTNS.

Conclusion: In our elderly population undergoing PTNS for OAB, our subjective response rate of 70% was well within the established success rates of 37-82%. While 39% of the patients used a concomitant treatment during PTNS, only 13.2% required alternative treatment after. Obese BMI was the only variable predictive of failure in our cohort. Of patients who received botox injections with continued symptoms, all reported symptom improvement following PTNS.
Podium #5
IMMUNOFLUORESCENCE LOCALIZATION OF BACTERIAL BIOFILMS ON EXPLANTED TRANSVAGINAL MESH SLINGS REMOVED FOR CHRONIC PAIN
Victoria C.S. Scott, MD, A. Lenore Ackerman, MD, PhD, Guo Liu, PhD, Wenyuan Shi, PhD and Shlomo Raz, MD
Los Angeles, CA
Presented By: Victoria C. Scott, MD

Introduction: The development of delayed, severe pelvic pain after the transvaginal placement of a mesh sling has been observed in patients who lack overt pathology at the surgical site (e.g. erosion or nerve entrapment). We previously demonstrated that proinflammatory bacteria can be seen in mesh explants from these patients. In this study, we sought to evaluate the localization of these bacteria and examine their relationship to host inflammatory processes.

Methods: Mesh sling segments and the surrounding tissue removed from patients with delayed onset of pain and no evidence of vaginal mesh erosion were fixed in paraformaldehyde and analyzed using a combination of immunofluorescence and fluorescence in situ hybridization (FISH) with a bacteria-specific probe (EUB338) as well as by H&E microscopic histology. These were compared to mesh segments removed for isolated urinary retention and no pain or erosion, which served as negative controls.

Results: By histology, 86% (129/150) of patients with chronic pain exhibited histologic evidence of moderate-severe, macrophage-predominant chronic inflammation, in contrast to the fibrosis seen in patients with retention. FISH staining allowed us to localize a high concentration of bacterial communities on the surface of mesh fibers in patients with chronic pain. Isolated bacteria were noted in vaginal tissue surrounding the mesh as well as accumulating in peri-mesh macrophages. The negative control did not show any bacteria on the mesh or in the surrounding tissue.

Conclusion: These findings confirm that bacteria isolated from explanted mesh specimens using culture-independent methods originate from focal bacterial communities on the mesh fiber surface. In addition, the macrophage-predominant inflammatory infiltrate seen on classical histology appears to correlate with mesh-adjacent macrophages harboring intracellular bacteria. This proposes a novel mechanism for the development and maintenance of chronic pain after transvaginal mesh placement; bacteria inoculated onto the mesh at the time of implantation may survive at the mesh interface, interacting with the host immune system to promote a low-level, chronic inflammation manifesting as chronic pain.

Figure 1. Immunofluorescence/FISH analysis of explanted mesh specimens. Paraformaldehyde-fixed tissue specimens containing the explanted mesh and surrounding tissue were stained with fluorescent antibodies against Phalloidin, DAPI stain to visualize cellular nuclei and a broad-specificity FISH probe identifying bacteria. Bacteria could be identified coating the surface of the mesh as well as within the bodies of surrounding host cells.
Podium #6

CLINICAL STUDY UPDATE ON A NOVEL RIBOSOMAL RNA-BASED RAPID DIAGNOSTIC METHOD TO DETECT, IDENTIFY AND ASSESS ANTIBIOTIC SUSCEPTIBILITY OF UROPATHOGENS

Lauren N. Wood, MD1, Melissa A. Markowitz, BA1, Seth A. Cohen, MD2, Andrew R. Medendorp, MD1, Colin Halford1, Gabriel Monti1, Bernard M. Churchill, MD1, David A. Haake, MD1 and Ja-Hong Kim, MD1

1UCLA, Los Angeles, CA; 2City of Hope, Los Angeles, CA

Presented By: Lauren N. Wood, MD

Introduction: We previously described our initial experience in assessing the ability of a ribosomal RNA-based rapid diagnostic tool for identification and susceptibility testing of uropathogens in clinical urine specimens. Our aim was to assess the interval success of the method for rapid identification and antimicrobial susceptibility testing of Gram negative bacteria, in addition to identification of Gram positive bacteria.

Methods: We collected 106 urine specimens from a tertiary FPMRS clinic from patients presumed to have urinary tract infection based on their symptoms and point-of-care urine dipstick assessments. Using a novel ribosomal RNA-based diagnostic tool, we attempted to both detect and identify both Gram negative and Gram positive uropathogens and to determine antimicrobial susceptibility of Gram negative bacteria in less than 180 minutes.

Results: We tested 106 urine specimens for the presence of bacteria. We correctly assessed the presence (66/72) or absence (34/34) of bacteria in 100/106 (94%) specimens. The six samples in which bacteria were present but not identified with the rapid testing protocol had bacterial concentrations below 105 cfu/ml. Antimicrobial susceptibilities correlated with the clinical microbiology lab results in 96% of cases. The availability of this technology to direct patient care would have avoided unnecessary treatment in 35% (6/17), ineffective treatment in 18% (3/17), and overtreatment in 24% (4/17) of patients treated empirically. Delayed treatment would have been avoided in 64% (57/89) of patients whose therapy was withheld pending culture results.

Conclusion: This update on our initial pilot study confirms the reliability of this rapid diagnostic technology to correctly detect and identify uropathogens and to determine antibiotic susceptibilities within 180 minutes, directly from clinical urine specimens. Updates to the technology now make it possible to detect Pseudomonas and Gram positive bacteria. The approach holds great promise for transforming our current strategy of empiric antibiotic therapy by directing personalized antibiotic therapy for patients with UTI.

Financial Funding: The Ruby Winston Diagnostic Microbiology Lab at UCLA is supported by donations from benefactors supporting the group’s mission of preserving antibiotics for future generations.
Podium #7
PROSPECTIVE SINGLE CENTER INVESTIGATIONAL DEVICE EXEMPTION STUDY OF PROSTATE ARTERY EMBOLIZATION FOR LOWER URINARY TRACT SYMPTOMS
Riad Salem, MD, MBA1, Samdeep Mouli, MD2, Ahsun Riaz, MD2, Ahmed Gabr, MD2, Rehan Ali, MD2, Frank Miller, MD2, Nabeel Hamoui, MD, MBA2, Robert Lewandowski, MD2 and John Hairston, MD2
1Northwestern Memorial Hospital; 2Northwestern Chicago, IL
Presented By: John Hairston, MD

Introduction: To evaluate the safety and efficacy of prostate artery embolization (PAE) for the treatment of lower urinary tract symptoms (LUTS) attributed to benign prostatic hyperplasia (BPH).

Methods: A prospective, single-center, open-label FDA-approved study was conducted to evaluate the safety and efficacy of PAE for the treatment of LUTS secondary to BPH. Enrolled patients include men ≥45, prostate volume >40g, International Prostate Symptom Score (IPSS)>13, peak flow rate (Qmax)≤12mL/s, and voided volume ≥125mL. Arterial embolization was performed with 300-500µm particles. Patients were evaluated with questionnaires [IPSS, quality of life (QoL), International Index of Erectile Function (IIEF), and Male Sexual Health Questionnaire for Ejaculatory Dysfunction (MSHQ-EjD)] and clinical measures [post-void residual volume (PVR), Qmax, and prostate-specific antigen (PSA) at screening/baseline, 1 month, 3 months, 6 months, and 1 year. Prostate volume (PV) was measured with MRI at screening/baseline and 6 months after PAE.

Results: 42 patients (PV 38-190 g) were treated over the course of the 3 year study. At six months and 1 year after treatment, there were statistically significant improvements in IPSS (Baseline 23.1 ± 2.1, 6-month 11.9 ± 3.1, 1 year 12.7 ± 3.0), and QoL (Baseline 4.8 ± 0.3, 6-month 2.4 ± 0.6, 1 year 2.8 ± 0.7). There were significant improvements in Qmax at 3 months post-PAE (Baseline 7.6mL/s ± 2.5mL/s, 3-month 15.4 mL/s ± 4.4 mL/s). No significant changes in IIEF-EF, MSHQ-EjD, PVR, or prostate volume were observed (p=0.39, p=0.88, p=0.07, and p=0.06, respectively). Adverse events include dysuria (n=13), hematuria (n=6), hematospermia (n=2), retrograde ejaculation (n=2), urinary frequency (n=3), and urinary retention (n=2). No severe adverse events or non-target embolizations have occurred.

Conclusion: Results from this prospective clinical trial demonstrate that PAE is a safe and effective treatment for BPH, with statistically significant improvement in LUTS.
NON-PATHOGENIC AND UROPATHOGENIC ESCHERICHIA COLI HAVE DIFFERENT NUTRIENT REQUIREMENTS FOR SWARMING MOTILITY

Sushmita Sudarshan, BS, MS1, Larry Reitzer, BS, PhD1 and Philippe Zimmern, MD2
1UTD; 2UT Southwestern Medical Center

Presented By: Sushmita Sudarshan, BS, MS

Introduction: Uropathogenic E. coli (UPEC) requires some motility to reach the infection site. UPEC strains swarm well. Lab strains of E. coli require 0.5% glucose for swarming, but glucose is generally not available in urine outside of diabetes. If swarming contributes to UTIs, then some metabolite(s) must replace glucose or UPEC strains do not require glucose. Our objective was to determine what metabolites can lower or replace the glucose requirement during swarming.

Methods: Swarming motility was analyzed with Escherichia coli strains W3110 (a nonpathogenic strain) and three UPEC strains: UTI 89 (acute cystitis), RUTI 12 (chronic cystitis) and CFT073 (pyelonephritis). A single colony from a fresh LB plate was grown for 6 hours at 37°C in liquid swarm media (0.5% glucose, 1% tryptone, and 0.25% NaCl). One μL was inoculated on a plate with 30 mL swarm media (solidified with 0.45% Eiken agar) and incubated at 37°C. Outward movement from triplicate plates was measured at 36 hours. To understand which products of glucose metabolism were required for swarming, we analyzed mutants defective in many glycolytic enzymes, and also added products of glucose metabolism suggested by the genetic analysis in medium in which the concentration of glucose was too low to support swarming.

Results: All strains were unable to swarm without glucose (see figure). Genetic analysis indicated that genes of glycerol and cysteine metabolism were required for swarming. W3110 swarmed with ≥ 0.5% glucose, but could only swarm with 0.25% glucose if supplemented with 0.2% glycerol plus 2 mM cysteine or with 100 μM 2,2'-dipyridal (which chelates iron). W3110 swarmed with 0.125% glucose if supplemented with both glycerol and the iron chelator. In contrast, the UPEC strains swarmed with 0.25% glucose without supplementation, and 0.5% glycerol without cystetine could replace the glucose requirement.

Conclusion: UPEC strains differ from a nonpathogenic strain in having a low glucose swarming requirement, and in the ability to replace glucose with glycerol. We propose that, in the bladder environment, UPEC swarming and virulence is potentiated by phospholipid-derived glycerol.

Financial Funding: none
Podium #9
IMPROVEMENTS IN POST-OPERATIVE FOLEY CATHETER EDUCATION THROUGH AUDIO-VISUAL MEDIA
Michelle Kim, MD, PhD and Shahin Tabatabaei, MD
Boston, MA
Presented By: Michelle Kim, MD, PhD

Introduction: Healthcare literacy remains an important aspect of patient care. Health illiteracy itself was found to be an independent risk factor for hospital admission among elderly managed care enrollees even after adjusting for demographics, socioeconomic status, health behavior, chronic diseases and self-reported health. Current trends to improve literacy have focused on new modes of information delivery including the development of audio-visual (AV) aids. The development of audio-visual media that is easily comprehensible and readily available to patients during their hospitalization may be a more effective strategy to improve patient education. In informal surveys of urology patients, catheter care at home was found to be one of the most daunting aspects of a prostatectomy. Our goal was to develop a catheter audio-visual (AV) aid that could deliver pertinent and standardized instructions to patients and allow them to review the material in a visual format.

Introduction: To assess the effects of providing AV aids in conjunction with standard forms of written instructions about urinary catheter care in terms of satisfaction, comprehension and recall of the information provided.

Methods: AV aids were created for patients going home with a urinary catheter based on the written instructions provided. Patients were randomized to receiving the standard catheter written instructions with nursing teaching or receiving the standard instructions with nursing teaching in addition to an AV aid. Patients were given surveys prior to discharge as well as two weeks after discharge after the catheter was removed.

Results: Eighty-one patients were enrolled in the study of which 27 were enrolled in the control arm and 54 in the experimental arm. Patient characteristics were similar between the two groups. Patient satisfaction was higher in the AV aid group relative to the control group. Patient calls were also slightly lower in the AV aid group compared to the control group. Overall patient comprehension of the information, quality of life and health care utilization was similar between the two groups.

Conclusion: Audio-visual aids are a promising avenue to improve patient literacy in surgical care. Further research should be sponsored to improve access to audio-visual aids for patients, which may improve care but also decrease health care costs.

FUNDING: Partners Health Care Center of Excellence
Podium #10
BACTERIAL CULTURES AT THE TIME OF ARTIFICIAL URINARY SPHINCTER REVISION SURGERY IN CLINICALLY UNINFECTED DEVICES: A PROSPECTIVE CONTEMPORARY SERIES
Ross Avant, MD¹, Matthew Ziegelmann, MD², Brian Linder, MD² and Daniel Elliott, MD²
¹Mayo Clinic; ²Rochester, MN
Presented By: Ross A. Avant, MD

Introduction: Prior studies have identified bacteria and biofilm present on clinically uninfected urologic prosthetic devices, with positive cultures found in 70% of uninfected penile prostheses during revision. However, literature regarding clinically uninfected artificial urinary sphincters (AUS) is sparse. Here, we sought to evaluate the presence of bacterial colonization on AUS during revision surgery for urethral atrophy and mechanical failure.

Methods: We prospectively collected bacterial culture swabs from all explanted AUS components (cuff, pump, and reservoir) in patients undergoing artificial urinary sphincter revision at our institution for urethral atrophy or mechanical failure between February 2016 and September 2017. Additional culture swabs from the surgeon's sterile surgical glove prior to incision served as a control. Culture results were reviewed to identify the presence of bacterial colonization.

Results: In total, 59 patients underwent AUS revision, and culture swabs were obtained from 152 components. The etiology for revision surgery was urethral atrophy (n=22, 37%) or mechanical failure (n=37, 63%). Median patient age was 73 (IQR 67;80). Median (IQR) time from prior AUS surgery was 4 years (IQR 2;10). All components were explanted and replaced in 47 patients (80%) while a single component was replaced in the remaining 12 patients (20%). Positive cultures were identified in 26/152 components (17%), including 17/60 cuffs (28%), 6/47 pumps (13%), and 5/45 reservoirs (11%). In total, 22/59 (37%) patients had at least one positive component culture. Bacterial organisms identified included Staphylococcus species (n=17), Propionibacterium (n=4), Aerococcus (n=5), Actinomyces (n=2), Corneybacterium (n=1), Escherichia Coli (n=1), and Micrococcus (n=1). Colony counts ranged from 1- 3. Surgeon glove cultures were positive in 7/59 patients. In those patients with positive cultures, the etiology for device revision was urethral atrophy in 45% of patients, compared with 32% in those with a negative culture.

Conclusion: We identified positive AUS component bacterial swab cultures in 37% of patients undergoing AUS revision in the absence of clinical infection at a median 4 years from device placement. Colony counts were low; however, surgeons should be aware that retaining any AUS components at the time of revision surgery may increase the risk of infection of those retained components. Further study is warranted.

Podium #11
WITHDRAWN
Introduction: Radical prostatectomy impacts quality of life in urinary domains. Greater patient preparedness before neuromodulation is associated with better patient-reported outcomes. This study tested the hypothesis that greater preparedness before prostatectomy is associated with better patient-reported outcomes.

Methods: Men undergoing prostatectomy from 2015-2016 in a large tertiary system were invited to preoperative group education sessions covering the perioperative process and expected recovery. Surveys assessing preparedness were completed at session end and outcomes measured by telephone call 3 months postoperatively. Descriptive and comparative statistics (Chi Squared, Fisher Exact) were calculated.

Results: Surveys for 79 men showed most agreed the group setting was “comfortable” (93.6%) and they would “recommend the seminar” (96.1%). Ratings of 8 or higher (out of 10) showed 84.4% of men “felt prepared”, 93.6% “understood potential side effects”, and 89.7% “knew what to expect in recovery” after surgery. Most men agreed they may leak urine after prostatectomy (96.1%) and take 1 year to maximally recover this (93.5%), while understanding potential complications (82.9%) and feeling prepared overall (88.3%) for surgery. At 3 months postoperatively, ratings showed 77.2% felt the seminar was helpful. Men agreed they “felt prepared” (92.4%) and had “accurate expectations of hospitalization” (83.5%) as well as “recovery at home” (78.5%). Men were using a median 1 [25%-75%: 0-1] pad daily and 81.0% agreed urinary control was “good enough to complete activities they wished to perform”. Expectations of recovery were met or exceeded in 81.0% for degree of urinary leakage and 85.9% for overall recovery. Greater baseline understanding of “potential outcomes” (p 0.035) and “potential side effects” (p 0.037) were associated with better than expected urinary leakage 3- months post-operatively. Feeling more “prepared” at baseline was associated with overall recovery being better than expected (p 0.0078). A greater understanding of possible complications was associated with urinary control good enough to complete activities one wished to perform (p 0.0265).

Conclusion: A group-based pre-prostatectomy class was well received and associated with high levels of patient-reported pre-operative preparedness. Greater preparedness before prostatectomy was associated with better patient-reported urinary outcomes 3 months postoperatively.
Podium #13

IDEALIZED FEMALE VOIDERS: IS THERE A DIFFERENCE IN QMAX AMONGST AGE GROUPS WHEN VOIDS ARE VOLUME CORRECTED

Israel Franco, MD, Therese Gardere, PNP and Kaitlyn Murphy, PNP
Yale University, Department of Urology, New Haven, CT
Presented By: Israel Franco, MD

Introduction: The concept of an ideal voider, the person that voids perfectly; without a PVR, at a volume that is not too low or too high and is bell shaped with no evidence of obstructed voiding is critical in the development of a benchmark where all voids can be measured. The definition of norm is variable given the population one is addressing and therefore a well defined and precise definition is essential to compare patients. In an effort to quantify flow rates and eliminate ambiguity of reading shapes we have developed Idealized voider equations that predict estimated flow rates in children. We set out create an ideal voider equation from young females who were nulliparous and had normal uroflow curves without evidence of pelvic floor EMG Activity.

Methods: Utilizing our database of 4133 female uroflows we identified all who were >12 yo and all flows that were in 1st SD of the Liverpool nomograms. We then refined the criteria further to make sure that all voided at least 50 cc, had a PVR < 20 cc, and VV was ≤ 115% of EBC (398). All flows had to be continuous with a bell shaped curve and a pelvic EMG that was silent during voiding. 95 studies met these criteria, using non linear regression 2 formulas were developed. Bland Altman analysis was used to validate the accuracy of the formulas.

Results: Patients ranged from 12-27 years of age with median age of 14 (IQ 13-16). With median VV=189.2 ml (IQ=106.2-247.7) and PVR= 6.0 ml (IQ=1.5-14.0). A quadratic and a Ln based formula were developed. These were tested against our pediatric idealized voider equation and the original Liverpool equation as well as the Barapatre Qmax equation uncorrected for age utilizing Bland Altman analysis as well as paired 2 tail t-test.

Conclusion: Creation of an ideal voider flow nomogram or formula requires meticulous culling of flows to isolate truly normal voids (95/244 bell curves) when this is done it is apparent that our adolescent and young adult female formula, our pediatric formula and the Liverpool formulas produce remarkably similar findings indicating that known ideal normal females void with striking similarity regardless of age.

<table>
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<th>Actual Qmax (mL/min)</th>
<th>Quadratic formula (TBC)</th>
<th>Ln formula (TBC)</th>
<th>Liverpool formula (V)</th>
<th>Ideal Peds (TBC)</th>
<th>Barapatre (V)</th>
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<tr>
<td>6.0</td>
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<td>6.883</td>
<td>6.81</td>
<td>5.995</td>
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<td>5.61</td>
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<td>-119.7%</td>
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Quadratic formula (TBC) Qmax=1.53+0.0957TBC-0.00009697(TBC)^2 (R²=0.706)
Ln formula (TBC) Qmax=9.524*Ln(TBC)-26.47 (R²=0.701)
Liver pool (LnQmax)=9.511+0.505*Ln(VV)
Ideal Peds Qmax=10.723*0.073TBC-0.0000423TBC^2 (R²=0.952).
Barapatre Qmax=5.449*0.500TBC-0.00003453TBC^2
Podium #14

IS IT IMPORTANT TO DO PELVIC FLOOR EMG TO DEVELOP “NORMAL” NOMOGRAMS

Israel Franco, MD, Therese Gardere, PNP and Kaitlyn Murphy, PNP

Yale University, Department of Urology

Presented By: Israel Franco, MD

Introduction: The definition of normal varies dependent on the population one is examining. Therefore a well defined and precise definition is critical when trying to define the normal voider. Many nomograms have been created and the vast majority do not utilize pelvic floor EMG to determine if there is pelvic floor activity. This is common in both the adult and pediatric literature. We hypothesize that supposed normal bell voiders who void with abnormal pelvic floor activity would have discernible differences in flow rates from those with quiet pelvic floors.

Utilizing our database of 4133 female uroflows we identified all who were >12 yo and all flows that were in 1st SD of the Liverpool nomograms. We then refined the criteria further to make sure that all voided at least 50 cc, had a PVR < 20 cc, and VV was ≤ 115% of EBC (398). All flows had to be continuous with a bell shaped curve and separated those with silent and active pelvic EMG. 95 studies were quiet and 141 were active pelvic floors. Kruskal-Wallis analysis of the Qmax, the various estimated Qmax derived from different formulas and the Flow Index (Qmax act/Qmax est) were evaluated for differences.

Results: When Qmax is analyzed there is no difference noted between the quiet and active pelvic floor groups (p=0.360). Furthermore the estimated Qmax utilizing all the different formulas available did not show a difference as well. When the flows were converted to a Flow index which is a measure of voiding efficiency we found that irrespective of the method of calculating the flow index we could discern a statistical difference between the quiet and active pelvic groups.

Conclusion: By normalizing the flow rates and creating a flow index that corrects for volume we can clearly see that there is a difference in the group that has a quiet pelvic floor compared to an active pelvic floor. These differences are critical and underscore the need to consider EMG in uroflows that are used to develop nomograms. These findings also highlight the value of a flow index instead of using raw Qmax. The Flow index allows translation from study to study irrespective of the age or volumes voided.

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<th>Qmax</th>
<th>Minimum</th>
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Quadratic formula (TC) Qmax=8.516+0.05585×C−0.0000096×T^2C^2 (R^2 =0.705) 
Ln Formula (TC) Qmax=9.5244×ln(TC)-36.47 (R^2=0.701)
Liver pool (lnQmax)=4.321+0.359×ln(VV)
Ideal Peds Qmax=10.723+0.073TB−0.000442TB^2+C (R^2=0.352).
Baraparte Qmax=9.449+0.660TB-0.000843TB^2+0.001.
Podium #15
LOW RELIABILITY OF VIDEOURODYNAMICS AND DIAGNOSIS OF DETRUSOR SPHINCTER DYSSYNERGIA: THE TRUTH LIES IN THE EYE OF THE BEHOLDER
Michael Randazzo, Brandi Miller, DO, Christopher Tallman, MD, Timothy Boone, MD, PhD and Rose Khavari, MD
Houston Methodist Hospital Department of Urology, Houston Texas
Presented By: Brandi Miller, DO

Introduction: Video-Urodynamic Study (VUDS) is regarded as an objective tool commonly used to evaluate neurogenic bladder (NGB) dysfunction. Although VUDS has high inter-rater reliability (IRR) for identifying Detrusor Overactivity, the same has not been well demonstrated for other states of NGB such as Detrusor Sphincter Dyssynergia (DSD). DSD is the urodynamic description of failure of urethral relaxation during detrusor contraction in attempted voiding. We examine the less discussed human component in identification of DSD on UDS in patients with NGB. The objective is to investigate the accuracy and variability of VUDS interpretation among urology trainees and a neuro-urologist. We expect high IRR among our rater pairs.

Methods: 302 consecutive VUDS studies administered at our tertiary urology center from 2013-2017 were blinded and rated either positive or negative for evidence of DSD by 3 raters (Neuro-Urologist Expert, Neuro-Urology Fellow, and Urology Resident PGY2), in patients with known NGB who had not undergone a bladder-defunctionalizing procedure. Ratings were compared to clinical diagnoses from charts. Cohen’s Kappa (k) was used to infer quantity of agreement of rationale between raters, with an ideal value of 1.

Results: Table 1 demonstrates very low accuracy and IRR in all rater pairs in descending order of k agreement, and 92/302 VUDS were noted to be substandard (no voiding phase, catheter displaced, poor image, etc)

Conclusion: Even at a tertiary academic center with experience in VUDS, we demonstrate much lower IRR of VUDS for identifying DSD than expected. This may be due to lack of clinical context, priming of raters to look only for DSD, and/or lack of standardized VUDS during voiding phase of NGB patients. Although improved accuracy was reported with senior member evaluation, our findings support the need for clinical data, improved voiding phase capture on VUDS, and interpreter presence during VUDS for more accurate identification of DSD.

Funding: RK is supported in part by NIH Grant K12 DK0083014 and the Multidisciplinary K12 Urologic Research Career Development Program to Dolores J Lamb from the National Institute of Diabetes and Digestive and Kidney Diseases, NIH.
Podium #16
THE UTILITY OF URODYNAMIC EVALUATION IN CLINICAL PRACTICE
Rena Malik, MD, Deborah Hess, MD, Maude E Carmel, MD, Gary Lemack, MD and Philippe Zimmern, MD
UT Southwestern Medical Center, Dallas, TX
Presented By: Rena D. Malik, MD

Introduction: Urodynamic Studies (UDS) are commonly used to help elucidate lower urinary tract function during storage and voiding. They are resource-intensive and may not alter patient treatment plans. We sought to prospectively evaluate UDS and their utility in patient care.

Methods: A random selection of patients with UDS ordered during usual clinical care by 3 FPMRS board certified physicians from April 2017 to July 2017 were included. Physicians were surveyed at the time of ordering UDS and at the post-UDS clinic visit to assess indications for UDS, question to be answered by UDS, pre and post UDS diagnosis, treatment plan, confidence level, and perceived helpfulness of UDS. The nurse conducting UDS was surveyed on the reproducibility of patient symptoms and perceived difficulty of UDS.

Results: Of 137 UDS ordered, 54 (39%) were included of which 41 (30%) underwent UDS for neurogenic (27%) and non-neurogenic LUTS (73%). The majority of UDS were conducted to characterize patient incontinence (61%), and 20% of patients had a history of prior lower urinary tract surgery. UDS nurses found 95% of UDS to fully or partially reproduce patient symptoms. Nurses found 17% of UDS difficult due to catheter malfunctions, patient physical limitations, and communication abilities. Post-UDS, providers found 95% of UDS interpretable. More than half (53%) of all patients had no clear treatment plan prior to UDS. UDS resulted in a change in or new treatment plan in 83% of patients. On a 5-point Likert scale, mean confidence level to have selected best treatment plan was 2.8±1 pre-UDS and increased to 4.1±0.7 post-UDS, with 61% of evaluations having a change of at least 1 confidence point. Neurogenic bladder patients were less likely than non-neurogenic bladder patients to have a change in treatment plan (63% vs 90%, p=0.069). Providers found 73% of UDS subjectively helpful. UDS done to characterize incontinence tended to be subjectively helpful less frequently than UDS done for other indications (61% vs. 90%, p=0.055) however always resulted in a change in treatment plan (100% vs. 62%, p=0.010).

Conclusion: Urodynamics done in a tertiary referral center are nearly always interpretable and often result in a change in treatment plan. Neurogenic patients may less often have a change in treatment plan. UDS done to characterize incontinence may be subjectively less often helpful to the provider however nearly always result in a change in treatment plan.
Podium #17

HOW DOES DIABETES AFFECT VOIDING DYSFUNCTION? A MATCHED PAIRS STUDY

Dina Manasherova, BA, Candidate Biology¹, Gen Li, PhD², Carrie M. Aisen, MD³ and Doreen E. Chung, MD³
¹Columbia University, New York, NY; ²Department of Biostatistics, Mailman School of Public Health, Columbia University, New York, New York; ³New York Presbyterian Hospital / Columbia University Medical Center, New York, New York

Presented By: Dina Manasherova, BA, Candidate Biology

Introduction: Diabetes mellitus (DM) remains a major health concern in the United States with an estimate of 9.4% of the population affected in 2015. Few studies have examined the relationship between DM and voiding dysfunction. It is theorized that DM leads to diabetic cystopathy, characterized by large capacity bladder (LCB), impaired sensation (IS), poor contractility, and high post-void residual volume (PVR). Our objective was to compare urodynamics studies (UDS) between DM and non-DM patients.

Methods: We retrospectively reviewed UDS of 1144 patients. 303 (26.5%) patients had DM and 841(73.5%) did not. We performed age matching of 303 DM with 303 non-DM patients; gender proportions were not significantly different. Presenting symptoms, UDS parameters and diagnoses were compared. We used Mann-Whitney test for continuous outcomes and t-test and Chi-squared test for binary outcomes with p ≤0.05 for significance.

Results: Of the patients with DM, 91 (30%) had DM for >10 years. 100 patients (33%) had HgA1C above 6.5%. No significant difference was found in complaints, such as frequency (p=0.31), urgency (p=0.80) and stress urinary incontinence (SUI) (p=0.71) between two groups. On UDS, patients with DM did not show a significant difference in maximum flow rate (Qmax) (12.78±12.01 ml/s DM vs 11.94±9.80 ml/s non-DM, p=0.36), detrusor pressure (Pdet) at Qmax (37.86±28.55 cmH2O DM vs 37.76±31.75 cmH2O non-DM, p=0.97), and maximum Pdet (53.08±46.65 cmH2O DM vs 50.19±39.39 cmH2O non-DM, p=0.428), but patients with DM had significantly higher volume at first urge (247.48±178.60 ml DM vs 211.98±134.74ml non-DM, p=0.009). No differences were seen in SUI (p=0.96), detrusor overactivity (63% in DM and non-DM, p=0.9), and PVR (147.70±212.12 ml DM vs 123.95±185.36 ml non-DM, p=0.13). DM patients had more LCB (54% DM vs 38% non-DM, p=0.0043) and IS (46% DM vs 24% non-DM, p=0.0001) compared to non-DM patients.

Conclusion: This is one of the only studies to compare voiding dysfunction between patients with and without DM. Age-sample matching allowed to analyze the DM-specific effects on voiding dysfunction, showing that none of the complaints are significantly related to DM, yet patients with DM are diagnosed more often with LCB and IS, lending evidence for the phenomenon of diabetic cystopathy. Further studies are needed to evaluate the effect on treatment outcomes.

Source of funding: None
Podium #18
RISK FACTORS FOR POSTOPERATIVE URINARY RETENTION AFTER PELVIC ORGAN PROLAPSE REPAIR: VAGINAL VERSUS ROBOTIC APPROACH
Julie Cheng, MD, MAE, Hillary Wagner, MD, Joo Kim, MPH and Junchan Yune, MD
Loma Linda, CA
Presented By: Julie W. Cheng, MD, MAE

Introduction: Postoperative urinary tract retention has been reported in 29-62% of patients that undergo pelvic organ prolapse (POP) repair. Not only can subsequent catheterization increase the risk of urinary tract infections, but it can decrease patient satisfaction as well. The purpose of our study was to identify risk factors for postoperative urinary retention following POP repair and to compare rates of urinary retention between transvaginal and robotic approaches.

Methods: The medical records of patients that underwent surgical POP repair from October 2009 through June 2014 were reviewed. Repair surgeries included transvaginal high uterosacral ligament suspension (HUSLS) and robotic-assisted sacral colpopexy (RASCP). Patients that underwent concurrent sling placement were included. All patients underwent a retrograde fill voiding trial (RGVT) prior to catheter removal. Demographics, comorbidities, preoperative urodynamic findings, and surgical procedures were compared between women that passed their RGVT and those that did not pass. Student t-test and Mann-Whitney U test were used for continuous variables and chi-square test was used for categorical variables. A p-value of less than 0.05 was significant. Odds ratio (OR) was determined by binary logistic regression and is reported with 95% confidence interval (CI).

Results: Out of 484 patients reviewed, 333 underwent POP repair with a transvaginal HUSLS and 151 underwent RASCP. Postoperative urinary retention was identified in 128 (26.4%) patients with 113 that underwent transvaginal HUSLS and in 15 that underwent RASCP. The OR of postoperative urinary retention following transvaginal HUSLS was 4.61 (CI 1.82-11.66; p=0.001) compared to RASCP. Older age was also a risk factor for postoperative urinary retention (OR 1.07, CI 1.02-1.10; p=0.001). Protective factors included non-smoking status (OR 0.20, CI 0.045-0.91; p=0.037) and preoperative PVR < 150 (OR 0.30, CI 0.096-0.934; p=0.038). Parity, body mass index, ethnicity, diabetes mellitus, sling presence, and bladder capacity were not statistically significant risk factors.

Conclusion: Transvaginal POP repair with HUSLS demonstrates a 4.6-fold risk of postoperative urinary retention compared to the robotic approach. Older age is also a significant risk factor whereas non-smoking status and lower preoperative PVR may be protective against postoperative urinary retention.

Funding: None
Podium #19
A RANDOMIZED CONTROLLED TRIAL OF POSTOPERATIVE PELVIC FLOOR PHYSICAL THERAPY AFTER VAGINAL RECONSTRUCTIVE SURGERY
Melissa Dawson, DO, MS, Peter O’Hare, MD1, Jennifer Mann, BSN2, Karen Widdoes PT2 and Howard Goldstein, DO, MPH2
1Baltimore, MD; 2Newark, DE
Presented By: Melissa L. Dawson, DO, MS

Introduction: Pelvic organ prolapse (POP) affects 50% of parous women and of these women, 13% have a lifetime risk of requiring surgery due to bothersome symptoms. Postoperative physical therapy has been the standard of care in orthopedics to improve functionality and quality of life and may have a similar role after pelvic floor reconstructive surgery. The objective is to determine if immediate pelvic floor physical therapy (PFPT) improves postoperative quality of life following vaginal reconstructive surgery for pelvic organ prolapse.

Methods: We identified women who presented with POP and desired vaginal reconstructive surgery for resolution of their condition. Forty-six women were randomized to either standard post-operative care or PFPT. The PFPT consisted of a 6-week standardized protocol with a trained pelvic floor physical therapist. Both groups of women were given the PFIQ-7, PFDI-20, VAS for daily pain and sexual pain, FSFI, and the WHOQOL-BREF questionnaires prior to surgery. At the 6-week post-operative visit, patients were given the VAS and WHOQOL-BREF and at the 12-week visit patients were given PFIQ-7, PFDI-20, FSFI, WHOQOL-BREF and VAS. A repeated-measures ANOVA was used to assess the changes in quality of life for patients who received routine post-operative care versus patients who received post-operative physical therapy. Changes in sexual function, pain, urinary incontinence, and POP-Q were also assessed.

Results: A total of 46 women were enrolled in the study however, only 34 women completed the study; 18 in the standard post-operative group and 16 in the PFPT group. Mean age of study patients was 62.6 years and there were no significant differences in demographics among the groups. Based on results from the WHOQOL-BREF questionnaire, quality of life (QOL) parameters did not differ between both groups at 12-week follow-up. Women improved significantly in Visual Analog Scale (VAS) for daily pain and sexual pain (p=0.006), PFDI-20 (p<0.0001), PFIQ-7 (p<0.0001), and post void residual (p=0.023) overtime in both groups from baseline to 12 weeks postoperative. However, there was no significant difference between the standard post-operative care group and PFPT group.

Conclusion: Immediate PFPT does not appear to improve QOL when compared to the standard post-operative regimen. PFPT also does not appear to affect POP-Q staging. Further prospective studies are needed to understand long-term benefits of PFPT after vaginal reconstructive surgery.
Podium #20
CONCOMITANT HYSTERECTOMY LOWERS THE RATE OF RECURRENT PROLAPSE SURGERY FOR ALL COMPARTMENTS IN A COHORT OF OVER 100,000 WOMEN
Ekene Enemchukwu, MD¹, Kai Dallas, MD², Raveen Syan, MD¹, Ericka Sohlberg, MD¹, Christopher Elliott, MD¹ and Lisa Rogo-Gupta, MD¹
¹Stanford, CA; ²Stanford Urology
Presented By: Kai B. Dallas, MD

Introduction: As management of recurrent pelvic organ prolapse prolapse (POP) after index repair is challenging, there has been a great deal of interest in exploring factors associated with surgical failure. Hysterectomy is generally considered both a risk factor for POP and a POP treatment which can confuse patients during surgical counseling. We sought to explore the effect of hysterectomy at the time of index repair on risk of prolapse recurrence in a large population based sample of adult women with long-term follow up.

Methods: Data from the Office of Statewide Health Planning and Development (OSHPD) for the state of California (2005-2011) was used to identify all women who underwent an index anterior, apical and/or posterior POP repair at all non-federal hospitals in the State of California between 2005-2011. Patients with a history of hysterectomy prior to their index POP repair were excluded. Both patient and surgical characteristics were explored for associations with reoperation for recurrent POP.

Results: A total of 108,561 women were identified who underwent an index POP repair of which 48,983 underwent concomitant hysterectomy (45.1%). The mean follow up was 3.6 years. The rate of repeat surgery for anterior (1.2% versus 1.8%, p<0.01), apical (1.7% versus 2.3%, p<0.01), posterior (1.1% versus 1.8%, p<0.01) and any (2.6% vs. 3.9%, p<0.01) POP was significantly lower in patients who had concomitant hysterectomy at the time of their index repair versus those who did not (Table 1). Multivariate modeling adjusting for age, race, insurance, comorbidities, mesh use and concurrent incontinence procedure revealed that hysterectomy was protective against recurrence for anterior (OR=0.69), apical (OR=0.75), and posterior (OR=0.63) (p<0.01 for all).

Conclusion: We demonstrate in a large population based cohort that hysterectomy decreases the risk of recurrent prolapse surgery. However, though statistically significant, the absolute difference was small (1.3%), suggesting the findings may not be clinically significant and that uterine sparing prolapse repair remains an acceptable option. Treatment should be individualized based on a thorough discussion of risks and benefits.

Table 1: Univariate Association Between Repair Type, Recurrence Type, and Concomitant Hysterectomy

<table>
<thead>
<tr>
<th></th>
<th>Anterior Recurrence (n=1,499)</th>
<th>Apical Recurrence (n=2,181)</th>
<th>Posterior Recurrence (n=1,655)</th>
<th>Recurrence in at Least One Compartment (n=3,624)</th>
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<tr>
<td>Anterior Repair</td>
<td>1.210</td>
<td>1.564</td>
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<tr>
<td>(n=75,012)</td>
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<tr>
<td>Hysterectomy</td>
<td>417</td>
<td>359</td>
<td>379</td>
<td>816</td>
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<tr>
<td>(n=42,631)</td>
<td>(1.3%)</td>
<td>(1.7%)</td>
<td>(1.2%)</td>
<td>(2.7%)</td>
</tr>
<tr>
<td>No Hysterectomy</td>
<td>818</td>
<td>1,005</td>
<td>824</td>
<td>1,699</td>
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<tr>
<td>(n=32,170)</td>
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<td>(2.3%)</td>
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</tr>
<tr>
<td>p&lt;0.001</td>
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<td>p&lt;0.001</td>
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<td>p&lt;0.001</td>
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<tr>
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<td>719</td>
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<td>(1.5%)</td>
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<td>All Patients</td>
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<td>1,655</td>
<td>3,624</td>
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<td>(n=108,561)</td>
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<td>(2.0%)</td>
<td>(1.3%)</td>
<td>(3.3%)</td>
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<tr>
<td>Hysterectomy</td>
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<td>809</td>
<td>558</td>
<td>1,284</td>
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<td>(n=48,282)</td>
<td>(1.2%)</td>
<td>(1.7%)</td>
<td>(1.1%)</td>
<td>(2.6%)</td>
</tr>
<tr>
<td>No Hysterectomy</td>
<td>1,056</td>
<td>1,372</td>
<td>1,101</td>
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<tr>
<td>(n=50,279)</td>
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<td>(2.3%)</td>
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<td>(3.6%)</td>
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<td>p&lt;0.001</td>
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**Podium #21**

**SYMPTOM RESOLUTION AND RECURRENT PROLAPSE FOLLOWING VAGINAL MESH REMOVAL**

Andrew Bergersen, MD¹, Elinora Price MPH¹, Michael Callegari MBA², Evan Austin, BS¹, Odutoyosi Oduyemi MPH¹, Joel Funk, MD¹ and Christian Twiss, MD¹

¹University of Arizona College of Medicine, Tucson, AZ; ²University of Oklahoma, Oklahoma City, OK

Presented By: Andrew Bergersen, MD

**Introduction:** To evaluate overall symptom and pain resolution and recurrent prolapse following pelvic organ prolapse (POP) mesh removal.

**Methods:** This was an IRB-approved, retrospective review of our patients who underwent POP mesh removal from 2009-2016. Factors of interest included mesh type (transvaginal (TV) or sacrocolpopexy (SCC)), complete vs. partial removal, and presenting symptoms. Complete removal was defined as complete excision of all possible mesh from the anterior and posterior paravaginal space including mesh arms. Partial removal included anything less than complete removal. Postoperative pain improvement was categorized as resolved (symptoms resolved and require no further therapy), improved (symptoms less bothersome, may require further therapy), or unresolved (no/minimal improvement and require further management). Recurrent prolapse was also determined.

**Results:** 76 mesh removal patients (63 TV, 8 SCC, 5 unknown) were identified with a mean age of 60 and mean follow-up of 20 months. Overall, symptoms prompting mesh removal resolved or improved in 84%, with 54% classified as resolved, 30% improved, 11% unresolved, and 5% lost to follow-up. In the 37 complete removal patients, 54.1% were resolved, 35.1% improved, and 10.8% unresolved compared to 60% resolved, 28.6% improved, and 11.4% unresolved in the 35 partial removal patients (χ²=0.36, p=0.84). 32.4% of complete mesh removal patients developed recurrent prolapse, compared to 20.0% after partial mesh removal (p=0.2). Pain/dyspareunia was the indication for removal in 79% (60/76) of patients, and in this subset 53% were resolved, 37% improved, and 10% were unresolved. In the pain subset, there was no significant difference in pain resolution between complete (34 patients) vs partial (26 patients) removal (53% vs. 58% resolved, respectively, χ²=0.4, p=0.82). In the pain subset, 35.3% (12/34) of patients developed recurrent prolapse after complete removal, compared to 15.4%(4/26) after partial removal (χ²=2.0, p=0.15). Overall, 21 (27%) patients in the entire cohort required repeat reconstructive procedures after mesh removal.

**Conclusion:** Following removal of vaginal mesh, most patients experienced resolution or improvement in presenting symptoms, including pain. Complete mesh removal was not significantly associated with symptom improvement or recurrent prolapse. Less than one-third of patients undergoing mesh removal required repeat vaginal prolapse surgery.
IS MESH EVER APPROPRIATE FOR USE IN VAGINAL PELVIC ORGAN PROLAPSE REPAIR? A POPULATION-BASED ANALYSIS OF 110,329 WOMEN

Kai Dallas, MD¹, Līsa Rogo-Gupta, MD² and Christopher Elliott, MD³
¹Stanford Urology; ²Stanford University School of Medicine Department of Gynecology, Stanford; ³Stanford University School of Medicine, Department of Urology, Stanford CA

Presented By: Kai B. Dallas, MD

Introduction: It is not entirely clear why synthetic mesh is associated with more problems than native tissue vaginal pelvic organ prolapse (POP) surgery. Several contributing factors are hypothesized to impact the risks associated with mesh-augmented POP repair including, 1) characteristics of the material itself, 2) surgical experience, and 3) patient selection. We present a large population-based approach to describe an ideal mesh usage strategy in which the risk of reoperation for POP is weighed against the risk of reoperation for complications.

Methods: We assessed data from the Office of Statewide Health Planning and Development to identify all women undergoing POP repair in California from 2005-2011. Cases were identified utilizing ICD-9 and CPT procedure codes. Multivariate mixed effects logistic regression models were constructed to explore which patient, surgical and facility factors were associated with repeat surgery for a complication due to mesh or POP recurrence.

Results: Of the 110,329 women who underwent POP repair, mesh augmentation was performed in 16.2%. Although the overall repeat surgery rate was higher in women undergoing mesh repairs compared to non-mesh repairs (5.4% vs 4.3%, p<0.001), multivariate modeling revealed mesh was not independently associated with repeat surgery. In addition, no particular facility mesh expertise (academic, high-mesh volume or high proportion of repairs utilizing mesh) was significantly associated with outcome. Rather, the factor driving the increase was having a repair at a facility with a greater propensity to perform mesh repairs (OR=1.55 in the highest quartile proportion of mesh use, as compared to the lowest, p<0.01). Predicted probability plots revealed the lowest repeat surgery rates occur when placing mesh in approximately 5% of anterior repairs and 10% of anterior-apical repairs (Figure 1).

Conclusion: Mesh itself, nor expertise in placement does not appear to overtly affect outcomes after POP repair. Our results suggest that judicious use likely balances the risks of mesh related complications against that of recurrent POP surgery.
EFFICACY OF EARLY SURVEILLANCE URETHROSCOPY TO PREDICT CLINICAL FAILURE AFTER BULBAR URETHROPLASTY: A TRAUMA UROLOGIC RECONSTRUCTIVE NETWORK SURGEONS (TURNS) STUDY

Rachel A. Moses, MD, MPH1, Darshan Patel, MD2, Sean P. Elliott, MD, MS, FACS3, Alexander J. Erickson, MD, MS, FACS4, Brian B. Voelzke, MD, MS, FACS5, Benjamin N. Breyer, MD, MAS6, Christopher D. McClung, MD, MS7, Thomas G. Smith III, MD, FACS8, Angela P. Presson, PhD2 and Jeremy B. Myers, MD2

1University of Utah, Salt Lake City, UT; 2Salt Lake City, UT; 3Minneapolis, MN; 4Burlington, MA; 5Iowa City, IA; 6Seattle, WA; 7San Francisco, CA; 8Columbus, OH; 9Houston, TX

Presented By: Rachel A. Moses, MD

Introduction: Guidelines are lacking for post-operative urethroplasty surveillance. Often, flexible urethroscopy is used for direct repair visualization. Repeated cystourethroscopy, however, is costly and associated with significant patient burden. We hypothesized that initial post urethroplasty urethroscopy within six months of repair would reliably predict clinical outcomes.

Methods: Males >18 years old were identified within the Trauma Urologic Reconstructive Network Surgeons (TURNS) database from 2010-2016 who underwent isolated bulbar urethroplasty surveillance urethroscopy within 6mo. Patients with a history of previous urethroplasty, >10cm stricture, lichen sclerosus, pelvic radiation, failed hypospadias repair, and clinical failure prior to surveillance urethroscopy were excluded. We then identified the association of urethroscopy findings (normal caliber, >17French recurrent stricture rings, or <17French recurrent stricture rings and their association with clinical failure (strictures requiring repeat urethral procedures).

Results: A total of 590 patients had complete data, average age 43 years (+/-15.5), with a mean stricture length of 3.0 cm (+/-2). A total of 9% (54/590) required a secondary procedure for clinical failure. On multivariate analysis, clinical failure was more likely in patients with <17F strictures (16.95 (CI 8.53 – 33.7, p<0.001). The cumulative 1-year rates for failure by initial urethroscopic findings= normal :0.01 (95% CI: 0-0.03), >17F stricture: 0.06 (95% CI: 0-0.13), and <17F stricture: 0.27 (95% CI: 0.13-0.39).

Conclusion: In this cohort, <17F urethral stricture seen on initial post bulbar urethroplasty follow up urethroscopy is predictive of clinical failure. Repeated urethroscopy following normal, initial post-operative surveillance urethroscopy, however, has negligible association with clinical failure making recurrent urethroscopy in these patients unnecessary. These findings may have implications in developing guidelines for post urethroplasty surveillance.

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**Figure 1:** Kaplan-Meier Curve showing recurrence free survival (y-axis) vs. time following 1st post-operative cystoscopy in months (x-axis) stratified by 1st Post-operative cystoscopy results (Normal, >17F rings, <17 Fr rings) for all repair types.

<table>
<thead>
<tr>
<th>Number of subjects at risk at each time point</th>
<th>Prior to censoring</th>
<th>At 12 mos</th>
<th>At 20 mos</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal</td>
<td>444</td>
<td>173</td>
<td>71</td>
</tr>
<tr>
<td>&gt;17Fr</td>
<td>99</td>
<td>49</td>
<td>24</td>
</tr>
<tr>
<td>&lt;17Fr</td>
<td>75</td>
<td>22</td>
<td>13</td>
</tr>
</tbody>
</table>

Log rank test (P-value = 0.001)
Podium #24
MITOMYCIN-C AND URETHRAL DILATATION: A SAFE, EFFECTIVE AND MINIMALLY INVASIVE PROCEDURE FOR RECURRENT VESICO-URETHRAL ANASTOMOTIC STENOSES
Michael Sourial, MD1, Patrick Richard, MD, MSc, FRCSC2, Mathieu Bettez, MD, FRCSC3, Mazen Jundi, MD, FRCSC4 and Le Mai Tu, MD, MSc, FRCSC2
1The Ohio State University Wexner Medical Center; 2Centre Hospitalier Universitaire de Sherbrooke, Sherbrooke, Québec; 3Hôpital Cité-de-la-Santé de Laval, Laval, Québec; 4CSSS Trois-Rivières, Centre Hospitalier Affilié Universitaire Régional, Trois-Rivières, Québec
Presented By: Michael Sourial, MD

Introduction: To report the safety and efficacy of Mitomycin-C (MMC) injection followed by urethral dilatation for the treatment of recurrent vesico-urethral anastomotic stenosis (VUAS) post radical prostatectomy (RP), and to report the outcome for patients treated for concomitant post-prostatectomy incontinence (PPI).

Methods: 29 patients with PPI and diagnosed with recurrent VUAS were recruited between March 2009 and January 2014 in this longitudinal case series. Under sedation, MMC was injected at the 3, 6, and 9 o’clock position, followed by urethral dilatation to 26F. Cystoscopy was performed to evaluate for patency at set intervals. Patients had the possibility to receive a salvage MMC injection if recurrence was noted. Patients with resolved VUAS were offered an anti-incontinence surgery.

Results: Median (IQR) patient age was 67 years (63-72). 17 patients had ≥ 2 prior treatments for the VUAS (median 2, IQR 1-3 treatments). 23 patients (79%) had a patent bladder neck at the 12 months follow-up cystoscopy after a single MMC injection and dilatation. 3 patients opted for a salvage MMC injection for recurrence, and 2 of those were salvaged, improving the success rate to 86%. No adverse events were reported. 20 patients (69%) opted for an anti-incontinence surgery, and all were either cured or improved of their incontinence after a median (IQR) follow-up of 58 months (48–77).

Conclusion: MMC injection with urethral dilatation is a safe, effective, and minimally invasive treatment option for recurrent VUAS after RP. Favorable long-term results can be expected even after anti-incontinence procedures.
Podium #25
GLOBAL OUTCOMES OF SUBURETHRAL SYNTHETIC MIDURETHRAL SLING REMOVAL
Nabeel Shakir, MD, Connie Wang, BA, Nirmish Singla, MD, Feras Alhalabi, MD, Alana Christie, MS, Gary Lemack, MD and Philippe Zimmern, MD
UT Southwestern Medical Center
Presented By: Nabeel A. Shakir, MD

**Introduction:** Long-term follow-up is advised after synthetic mid-urethral sling (MUS) placement for female stress urinary incontinence (SUI), due to potential long-term complications. Patients seeking evaluation for sling revision may present with a multitude of symptoms, for which outcomes have been reported to date singly. The purpose of this study reports multidimensional improvement in patient reported symptoms following suburethral sling removal (SSR).

**Methods:** We reviewed a prospectively maintained, IRB approved database of women undergoing SSR at one institution and excluded patients with neurogenic bladder, urethral erosion, multiple or non-synthetic slings, prior mesh repair of pelvic organ prolapse or follow-up less than 6 months. Demographic data, type of sling, and symptoms along with Urogenital Distress Inventory Short Form (UDI-6) scores both before and after SSR were analyzed. An ideal outcome was defined as being free of pelvic pain, urinary incontinence (UI), recurrent Urinary tract infections (UTIs), and being sexually active.

**Results:** From 3/2006-2/2017, 443 women underwent SSR of which 230 met study criteria with median overall follow-up of 23 months (mean 30 months). 180/230 (78%) patients reported 3 or more symptoms at presentation. Retropubic MUS were more common than transobturator MUS (63% vs 38%), but there was no significant difference in presenting symptom frequencies between sling type. Median most recent post-SSR total UDI-6 score was 38 vs 50 at baseline ($p<0.0001$). By UDI-6, 53% of patients achieved success post-SSR. Outcomes by reported symptoms are shown in Figure 1. An ideal outcome was attained in 22/230 (10%) of patients. A modified outcome allowing for one minimally invasive anti-incontinence procedure and excluding sexual activity classified 112/230 (49%) of patients as success.

**Conclusion:** While patients with MUS present with multiple symptoms, following SSR there is sustained improvement in multiple symptom domains, including pain and urinary incontinence. Allowing for minimally-invasive anti-incontinence procedures, the rate of success is 49% and is comparable to that derived from UDI-6 scores (53%).
Podium #26
RISK FACTORS FOR STRESS URINARY INCONTINENCE SURGERY FOLLOWING SLING REVISION: A MULTIVARIATE ANALYSIS OF PATIENTS UNDERGOING TOTAL AND SUBTOTAL EXCISION OF SYNTHETIC MESH SUBURETHRAL SLINGS FOR COMPLICATIONS
Janine Oliver, MD1, Claire Burton, MD2, Lauren Wood, MD2, Zaid Chaudhry, MD3, Lorna Kwan, MD2, Christopher Tarnay, MD4, Z. Chad Baxter, MD2, Ja-Hong Kim, MD2 and Shlomo Raz, MD2
1Division of Urology, Department of Surgery, University of Colorado School of Medicine, Aurora, CO; 2Department of Urology, University of California Los Angeles David Geffen School of Medicine, Los Angeles, CA; 3Citrus Obstetrics and Gynecology West Covina, CA; 4Department of Obstetrics and Gynecology, University of California Los Angeles David Geffen School of Medicine, Los Angeles, CA
Presented By: Janine L. Oliver, MD

Introduction: Mid-urethral sling (MUS) revision successfully resolves complications related to synthetic mesh MUS for many patients, but at risk of development of recurrent or persistent stress urinary incontinence (SUI) at rates which have variably been reported at approximately 30-70%. Our objective was to identify risk factors for subsequent SUI surgery following MUS excision.

Methods: A retrospective chart review was performed to identify patients who underwent total or subtotal MUS excision from 2013-2015 for synthetic MUS-related complications. Patients were excluded if they had < 3 months follow-up, underwent a concurrent SUI procedure or only MUS incision, or had a history of pelvic radiation, neurologic disorder, vaginal prolapse mesh, urethral erosion, or prior surgery for complications of a non-MUS incontinence surgery. Patient demographic, clinical, surgical, and outcome data were recorded. The primary outcome assessed was the incidence of undergoing any subsequent procedure for SUI, including bulking agent injection, bladder neck suspension, and/or repeat sling procedure.

Results: 233 patients were identified. After a median follow-up of 23.5 months (range 3.2-51.7), 115 patients (49%) had undergone a procedure for SUI. On multivariate logistic regression analysis of all patients, increasing time to MUS excision (OR 1.16, 95% CI 1.03-1.30), total MUS excision (OR 4.14, CI 1.38-12.37), and preoperative urodynamic SUI (OR 4.66, CI 2.13-10.19) were associated with an increased likelihood of undergoing subsequent procedure for SUI. Among 51 patients with preoperative urodynamic SUI, increasing time to MUS excision (p=0.01) and total MUS excision (p=0.04) were significant on univariate, but not multivariate, analysis. Among 140 patients with negative preoperative urodynamic testing for SUI, obesity (OR 4.74, CI 1.73-13.02) and postmenopausal status (OR 3.78, CI 1.16-12.33) were associated with an increased likelihood of undergoing subsequent procedure for SUI on multivariate analysis. For all patients and subgroups examined, age, vaginal parity, prior hysterectomy, smoking status, type of MUS excised, history and type of prior MUS revision, and MUS location along the urethra were not associated with likelihood of subsequent SUI procedure.

Conclusion: This study has identified several risk factors for repeat SUI procedure following MUS excision. This knowledge is helpful in counseling and management of the patient with MUS-related complications.
Podium #27
PERCUTANEOUS STIMULATION OF THE SAPHENOUS NERVE: A NOVEL EXPERIMENTAL APPROACH TO TREATING OVERACTIVE BLADDER.
Scott MacDiarmid, MD¹, Judy Branson RN², Sasha John, PhD³ and Paul Yoo, PhD³
¹Alliance Urology Associates; ²Alliance Urology Specialists; ³Institute of Biomaterials and Biomedical Engineering, University of Toronto, Toronto, Canada
Presented By: Scott A. MacDiarmid, MD

Introduction: Although various options are available for treating overactive bladder (OAB), effective long-term treatment remains a significant clinical challenge. We present our initial experience with a new bladder neuromodulation therapy that electrically targets the saphenous nerve (SAFN).

Methods: Twelve OAB patients (female, 55 – 82 years) were treated in this pilot feasibility study with percutaneous SAFN stimulation. A 34G needle electrode was inserted immediately below the medial condyle of the tibia, and a return surface electrode was placed approximately 3 inches distal to the needle (Figure 1). Electrical stimulation (20 Hz, 200 μs pulse width) was provided for 30 minutes, and repeated weekly for 12 weeks. The patient’s perception to stimulation was used to guide electrode placement and stimulation amplitude. Clinical effects was assessed by 4-day bladder diaries and quality-of-life questionnaires.

Results: Percutaneous SAFN stimulation was successfully confirmed in all 12 patients by evoking a sensation that radiated distally from the needle electrode. In the 11 patients who completed the 3-month study, first signs of symptom improvement occurred after 2.3 ± 1.0 (range = 1 to 4) sessions. Significant improvement (i.e. >50% reduction) in one or more bladder symptoms was observed in 10 patients (92%); and 10 (92%) showed clinically relevant improvements in HRQL Total. Improvements in 4 of 5 bladder symptoms and all OAB-q subscales were significant (p<0.05). No adverse events were reported.

Conclusion: In this pilot study, we showed that percutaneous SAFN stimulation can be achieved consistently by using anatomical landmarks and patient feedback. The procedure is well tolerated, uses a clear physiological marker for setting the stimulation amplitude, and provides relatively rapid symptom improvement. This small cohort of patients show early evidence of a promising new intervention for treating OAB.

This study was financially supported by a Canadian Institutes of Health Research (CIHR) Proof of Principle Grant (34531) and a University of Toronto Connaught Innovation Award.
Podium #28
LUMBOSACRAL 1.5 TESLA MRI COMPATIBILITY WITH SACRAL NEUROMODULATION: AN IN-VIVO PROSPECTIVE STUDY
Juan M. Guzman-Negron, MD¹, Javier Pizarro-Berdichevsky, MD², Bradley Gill, MD¹ and Howard B. Goldman, MD¹
¹Cleveland Clinic, Cleveland, Ohio; ²Urogynecology Unit, Sotero del Rio Hospital, Chile/Division de Obstetricia y Ginecologia, Pontificia Universidad de Chile/Cleveland Clinic, Cleveland, Ohio
Presented By: Juan M. Guzman-Negron, MD

Introduction: Historically, the use of magnetic resonance imaging (MRI) in patients with sacral neuromodulation (SNM) devices has been limited. Currently the InterstimTM II model has only FDA approval for 1.5 Tesla (T) MRI head scans. Our institution completed an in-vitro study demonstrating insignificant heating of InterStimTM systems during 1.5 T lumbar/pelvic MRI. The goal of this study was to determine the safety of InterstimTM in patients during non-head MRI, specifically, lumbar and pelvic 1.5 T MRI.

Methods: We prospectively recruited InterstimTM II model implanted patients requiring lumbar/spine or pelvis 1.5 T MRI. Patients completed validated questionnaires and a survey regarding their usual SNM sensation pre MRI scan. The implantable pulse generator (IPG) was interrogated and impedances and battery life were assessed pre and post MRI. Patients were monitored during MRI study. An MRI-related adverse events questionnaire was completed post MRI. Validated questionnaires were completed 1 month after the MRI to assess for any changes in SNM therapeutic efficacy. Descriptive statistics were calculated.

Results: Eleven patients were enrolled in the study. All patients underwent lumbar/spine MRI. The most common indication for MRI was lower back pain 55% (6/11). Immediately after the MRI only 1 patient reported discomfort at the site of the IPG during the MRI, however, discomfort was only present during the scan and not afterwards. Two of the patients reported warmth at the site of the IPG during the MRI, again, this sensation was only present during scanning. None of the patients experienced stimulation or movement at the IPG site and no paresthesia was reported. There were no significant changes in impedances and battery life during IPG interrogation post MRI. Threshold amplitudes for sensation and localization of stimulation were unchanged post MRI. Urogenital Distress Inventory (UDI-6) and Incontinence Impact Questionnaires (IIQ-7) 1 month after MRI did not show worsening scores compared to pre MRI scores. None of the patients reported a negative Patient Global Impression of Improvement (PGI-I) score 1 month after MRI.

Conclusion: No significant adverse events occurred in patients implanted with an InterStimTM II device who underwent 1.5 T non-head MRI scan. Rare complaints reported were discomfort and warmth at the IPG site during scanning. Therapeutic efficacy of SNM was not affected 1 month after undergoing a non-head MRI scan.
Podium #29

THE CLINICAL AND COST EFFECTIVENESS OF ACUPUNCTURE FOR SYMPTOMATIC IDO

Julie Jenks, MSc, RN1, Jingo Paras, RN2, Eabhann O'Connor Much, MB BCh BAO2, Mahreen Pakzad, MD, FRCS (Urol), MB ChB2, Rizwan Hamid, MSc, FRCS (Urol), MB, ChB2, Jeremy Ockrim, MD, FRCS (Urol), MB ChB2 and Tamsin Greenwell, MD, FRCS (Urol), MB ChB2
1UCLH Urology; 2UCLH Urology, UCLH, London, UK
Presented By: Jeremy Ockrim, MD, FRCS (Urol), MB ChB

Introduction: Symptomatic idiopathic detrusor overactivity (IDO) is extremely common. Adherence to pharmacotherapy is poor, and surgical interventions are costly and invasive. We have assessed the clinical effectiveness and cost effectiveness of acupuncture in the treatment of symptomatic IDO.

Methods: 30 patients having acupuncture for symptomatic IDO were prospectively evaluated using objective (frequency/volume chart) and subjective (EQ5D, ICIQ-OAB, pain scores) measures. Outcome measures were assessed at baseline and post treatment and compared for responders and none responders.

A cost analysis was performed comparing acupuncture with mono and duel drug pharmacotherapies commonly used in OAB and conservative management methods (pelvic floor muscle exercises and bladder retraining). A cost comparison was made between all treatment options at both six weeks and six months.

Statistical analysis was by Student’s paired T-Test Mann-Whitney U test.

Results: Patients’ OAB symptoms completely resolved in 14.8%, significantly improved in 59.3% and remained unchanged in 25.9% following a 6 week course of acupuncture treatment. Responders had a significantly lower mean pre-treatment functional capacity compared with none responders, and had a significant increase in this functional capacity following treatment. No adverse events were recorded.

Acupuncture carried a significantly higher cost burden at six weeks, six months and overall (£2090) compared to pharmacotherapy (£506) and conservative methods (£724).

Conclusion: Acupuncture is a well-tolerated and effective treatment with no incidence of side effects and should be part of a Urology specialist’s armamentarium in a comprehensive continence service. It is significantly more costly than conservative and maximal medical treatment – and should remain 1 2nd line treatment for patients failing these treatments.
Podium #30
A NOVEL SACRAL NEUROMODULATION INFECTION PROTOCOL IS ASSOCIATED WITH REDUCTION IN DEVICE INFECTION
James Connor BA, BS1, Amy Long, MSN2 and Colin Goudelocke, MD3
1Lincoln Memorial University − DeBusk College of Osteopathic Medicine, Harrogate, TN; 2Erlanger Health System;
3Department of Urology, University of Tennessee - Erlanger, Chattanooga, Tennessee
Presented By: Colin Murrah Goudelocke, MD

Introduction: Multiple risk factors for Sacral Neuromodulation (SNM) device infection have been suggested. We sought to develop an infection protocol to minimize risk of device infection as well as use of nephrotoxic/ototoxic agents. Previous infections were uniformly due to S. aureus, thus we screened all patients with special efforts directed to those patients who were colonized.

Methods: The protocol was designed and data were collected prospectively from Jan 2014 to May 2017 and retrospective pre-protocol data were used as controls. All patients undergoing implant or revision of a SNM lead or implantable pulse generator (IPG) had nasal swab for presence of S. aureus. Patients with positive screening cultures were treated with 5 days of intranasal mupirocin and those who were MRSA-positive underwent preoperative prophylaxis with Vancomycin. Patients with negative screening cultures were treated preoperatively with cefazolin unless allergic. A two-agent preparation using chlorhexidine scrub and isopropyl alcohol/iodine povacrylex paint was used for all patients without applicable allergy. Patients undergoing staged-lead testing were evaluated at one week and only those not meeting implant criteria continued testing beyond one week. Only procedures resulting in permanent implant of a SNM device were included in this analysis.

Results: A total of 108 SNM procedures on 80 patients prior to the protocol and 360 procedures on 208 patients during the protocol were included. Infection rates were reduced in the protocol group with respect to total procedures (4/108, 3.7% vs 1/360, 0.3%, p=0.0028) and total patients (4/80, 5.0% vs 1/208, 0.5%, p=.0092). Nares culture data were available for 207/208 patients. Within the protocol group, 87.4% (181/207) of patients were negative for S. aureus, 8.2% (17/207) were MRSA-positive, and 4.4% (9/207) were MSSA-positive. Vancomycin was used as preoperative prophylaxis in 10.6% (22/208) of patients including 100% (17/17) of MRSA-positive patients and 2.6% (5/191) of MRSA-negative patients. No patient with MRSA-positive nares developed a device infection in the protocol group. No patient received post-procedure prophylaxis.

Conclusion: Instituting an infection protocol was associated with a significant reduction in rates of infection both as a proportion of all patients and SNM procedures. Use of Vancomycin was limited to a fraction of all patients and no post-procedure prophylaxis was used.
Podium #31
SAFETY & EFFICACY OF THE ECOIN™ IMPLANTABLE TIBIAL NERVE STIMULATION DEVICE FOR OVERACTIVE BLADDER SYNDROME
Scott MacDiarmid, MD, Sharon English, Bilal Kaaki, Vince Lucente, Matthew Clark, Peter Gilling, Patrick Meffan and Peter Sand
Alliance Urology Specialists
Presented By: Scott A. MacDiarmid, MD

Introduction: This is a preliminary report of a prospective, multicenter 12 week study of the novel implantable eCoin™ system for posterior tibial nerve stimulation that evaluated changes from baseline in overactive bladder syndrome (OAB) symptoms on voiding diaries and patient reported outcomes after 4 and 8 weeks of treatment.

Methods: 46 subjects were implanted with the eCoin™ device over the posterior tibial nerve at baseline (Figure) and then automatically treated for 30 minute sessions. Subjects completed 3-day bladder diaries to assess change in voiding symptoms at 4, 8 & 12 weeks from baseline. Quality of life was also assessed with the Incontinence Quality of Life instrument (iQOL). Safety was evaluated by reported adverse events. The eCoin™ system is implanted subcutaneously over the tibial nerve in the lower leg under local anesthesia.

Results: Sixteen of the 46 subjects have completed the 4 week follow-up to date. One woman did not meet the inclusion criteria and was excluded. At 1 month (N=15) there was a 75% reduction in urgency urinary incontinence (UUI)/day from 3.9±2.2 to 1.1 or a reduction by 2.82±1.68 UUI/day and at 2 months (N=5) there was a 85% reduction from 5±2.4 to 0.4 or a reduction of 4.6±1.83 UUI/ day. At one month, 80% of subjects (N=15) had ≥50% improvement in UUI, 53% had ≥75% improvement, and 27% had 100% improvement. At one month, 69% of subjects (N=16) reported iQoL score improvements >10 as did 80% of subjects (N=5) at two months. No serious adverse events have occurred.

Conclusion: These preliminary data, showing a dramatic improvement in UUI and quality of life at the 4 week assessment, suggest great promise for eCoin™ stimulation of the posterior tibial nerve. Data from the full sample (N=46) will provide additional information about the efficacy of the eCoin™ system.
SAFE AND EFFECTIVE TREATMENT OF OVERACTIVE BLADDER WITH A MINIATURIZED RECHARGEABLE SACRAL NEUROMODULATION SYSTEM

Stefan De Wachter1, Bertil Blok2, Philip Van Kerrebroeck3, Alain Ruffion4, Frank Van der Aa5, Marie Aimee Perrouin Verbe6, Ranjana Jairam3 and Suzy Elneil7

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Presented By: Stefan De Wachter, MD, PhD

Introduction: Sacral neuromodulation (SNM) is an established therapy for the treatment of refractory idiopathic OAB. A prospective multi-center clinical study was performed to test the safety and efficacy of a rechargeable SNM (r-SNM) system designed to provide over 15 years of therapy. This report provides the 6-month outcomes of this study of 51 subjects treated with this system.

Methods: 51 OAB patients were implanted with a r-SNM system at 7 European sites. Patients were refractory to conservative therapy. A single procedure was performed to implant the r-SNM system with a tined lead in proximity of the S3 or S4 nerve. Voiding diaries (72-hr) were completed prior to implant and follow-up visits. Therapy responders were defined as patients that received 50% reduction in voids and/or incontinence episodes compared to baseline or had less than 8 voids/day.

Results: A total of 38 females and 13 males with mean age of 51 years old (21-77 years) were implanted. At baseline patients had an average of 14.7 ± 6.1 voids/day and 9.6 ± 5.1 incontinence episodes/day. 34 of 48 patients (71%) were initial therapy responders at 1-month follow-up. Therapy response was maintained in 91%, and 94% subjects had an average reduction of 6.6 voids per day (± 5.8, p<0.001, 2-sided t-test) and 6.3 incontinence episodes per day (± 4.4, p<0.001, 2-sided t-test) compared to baseline (Figure 1). Quality of life improvement was clinically meaningful as indicated by ICIQ-OAB score increase of 27.3 and 26.2 at 3- and 6-months. At 6-months, 83% of all subjects were moderately or very satisfied with their therapy.

Conclusion: Patients experienced clinically significant improvements with the novel, rechargeable SNM system at 3- and 6-months post-implant. This miniaturized r-SNM system offers physicians and patients a promising alternative to existing non-rechargeable systems which require a replacement surgery every 3-5 years.
Podium #33
RANDOMIZED CONTROLLED TRIAL OF GROUP-ADMINISTERED BEHAVIORAL TREATMENT IN REDUCING URINARY INCONTINENCE IN ADULT WOMEN
Diane Newman, DNP, ANP-BC1, Ananias Diokno, MD2, Kathryn Burgio, PhD3, Lisa Low, PhD, RN4, Tomas Griebling, MD5, Michael Maddens, MD2, Leslee Subak, MD6, Patricia Goode, MD7, Carolyn Sampselle, PhD3, Ann Robinson, RN7, Trevillore Raghunathan, PhD4, Judy Boura, MS1, Donna McIntyre, MS7, Alesandra Magno, BS8 and Hanna Stambakio, BS8
1Division of Urology, University of Pennsylvania; 2Oakland University, Royal Oak, MI; 3University of Alabama, Birmingham, AL; 4University of Michigan, Ann Arbor, MI; 5University of Kansas, Kansas City, KS; 6Stanford Univ, Palo Alto, CA; 7Beaumont Hosp, Royal Oak, MI; 8Urology, University of Pennsylvania, Phila, PA
Presented By: Diane Newman, DNP

Introduction: This randomized controlled trial evaluated the effectiveness of Group Behavioral Treatment (GBT), vs. no treatment in treatment-naive adult women with stress, urgency, or mixed urinary incontinence (UI).

Methods: Eligible adult women were screened and randomized to: 1) GBT or 2) No treatment. Inclusion/exclusion criteria included women 55 years and older, International Consultation on Incontinence Questionnaire (ICIQ UI-SF), score of at least 3 (1 for frequency, 2 for severity), report of UI for at least 3-months duration, no prior UI treatment, no symptomatic prolapse, and no previous bladder surgery or pelvic cancer. Primary outcome: ICIQ UI-SF. Secondary outcomes: 3-day voiding diary, paper towel test, 24-hr pad weight, Brink test, Incontinence Quality of Life Questionnaire (I-QOL) and Patient Global Impression of Improvement (PGI-I). GBT received a one-time 2-hour bladder health class whereas the control group received no treatment. Both received a behavioral education brochure, were monitored every 3 months for 12-months with clinic visits at 3 & 12 months and mailed questionnaires at 6 & 9 months.

Results: Four hundred and sixty-three (463) women were either randomized to GBT (232) or to no treatment control (231). Participant characteristics included mean age of 64 +/- 7.3 years (range 55 to 91 years), mean BMI >30 in 52%, 46% African American; 13% high school education or less. Demographics were not significantly different between groups. Outcomes at 3, 6, 9 & 12 months showed significant differences in favor of GBT over control including ICIQ/UI SF (p<0.0001), average number of voids/day (p=0.0002) and leaks/day (p=0.0002) on a voiding diary, paper towel test (p=0.0008), 24-hr pad weights (p=0.0007), Medical, Epidemiologic & Social aspects of Aging questionnaire (MESA) (p<0.0001), Incontinence Quality of Life (IQOL) (p<0.0001) & PGI-I (p<0.0001) but not the Brink test for pelvic floor strength (p=0.09).

Conclusion: This bladder health learning intervention delivered in a group setting was safe and effective in reducing UI frequency, severity and bother and improving quality of life for community-dwelling older adult women with UI.

Source of Funding: NIH/NIA # RO1AG043383
ClinicalTrials.gov Identifier: NCT02001714
VIBEGRON, A NOVEL ONCE DAILY ORAL BETA-3 AGONIST, SIGNIFICANTLY REDUCES AVERAGE DAILY MICTURITIONS, URGE INCONTINENCE EPISODES AND URGENCY EPISODES IN PATIENTS WITH OVERACTIVE BLADDER

David Mitcheson, MD1, Tara Frenkl, MD2, Suvajit Samanta, PhD2, Cathy Anne Pinto, PhD2, Stuart Green, MD2, Nate Bennett, PhD3 and Paul Mudd Pharm D, MBA3

1Bay State Clinical Trials; 2Merck & Co., Inc., Kenilworth, NJ; 3Roivant Sciences, Inc. on behalf of Urovant Sciences, Inc., a wholly-owned member of the Roivant family of companies, New York, NY.

Presented By: H. David Mitcheson, MD

Introduction: Vibegron is a novel once daily oral beta-3 agonist in development to reduce urge urinary incontinence, urgency and urinary frequency in patients with Overactive bladder (OAB). The objective of this large Phase 2b dose-ranging study was to evaluate the efficacy, safety and tolerability of once-daily vibegron in patients with OAB administered alone and concomitantly with tolterodine.

Methods: This international, phase 2b, randomized, double-blind, dose-ranging, placebo- and active comparator-controlled study in patients 18-75 years old was conducted in two parts. In Part 1, patients were equally randomized to receive: once-daily vibegron (3 mg, 15 mg, 50 mg or 100 mg); tolterodine extended release 4 mg/day (Tol4); vibegron 50mg + Tol4, or placebo for 8 weeks. In Part 2, patients were randomized 2:2:2:1 to 4 weeks of once-daily vibegron 100 mg, Tol4, vibegron 100 mg + Tol4, or placebo. Patients completing Part 1 or 2 were eligible to enroll in an optional 1-year blinded safety extension, with Tol4 as an active control. Outcome measures included average daily micturitions (primary) and urge incontinence episodes and urgency episodes (secondary) at week 8, as reported by patients using a 7-day diary.

Results: Of 1395 randomized patients (Part 1, 987; Part 2, 408), 1324 patients (94.9%) completed Part 1 or Part 2 of the trial; 845 patients entered and 660 (78.1%) completed the 1-year safety extension study. The mean patient age was 58.6 years; 89.7% were women and 80.6% were OAB-wet. Key efficacy results from Part 1 are displayed in the table below.

All vibegron doses were well tolerated and no deaths or drug-related SAEs were reported. The proportion of patients with drug-related AEs was similar in vibegron and placebo groups. After one year of treatment, vibegron doses of 50 and 100 mg were well tolerated and demonstrated durable efficacy.

Conclusion: This large Phase 2b study demonstrated that once daily vibegron in the dose-range of 50 to 100 mg provides clinically and statistically significantly reductions in daily micturitions, urge incontinence and urgency episodes in OAB patients, and was well tolerated for up to 1 year of treatment.

This study was funded by Merck & Co., Inc.

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<th>Endpoint at Week 8*</th>
<th>Vibegron 50mg</th>
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*Data Listed as N, placebo adjusted change from baseline, 95% CI and p-value.
Podium #35

ASSESSMENT OF INNERVATION SYMMETRY OF EXTERNAL ANAL SPHINCTER IN YOUNG AND ELDERLY FEMALES USING HIGH-DENSITY SURFACE ELECTROMYOGRAPHY RECORDINGS

Nicholas Dias, BS1, Xuhong Li, MD, PhD2,3, Chuan Zhang, MS1, Jinbao He, PhD4 and Yingchun Zhang, PhD1
1Department of Biomedical Engineering, University of Houston, Houston, TX; 2The Third Xiangya Hospital; 3Central South University, Changsha, China; 4School of Electronic and Information Engineering, Ningbo University of Technology, Ningbo, China

Presented By: Yingchun Zhang, PhD

Introduction: Functional asymmetry of external anal sphincter (EAS) innervation has long been studied for its potential role in the prediction of fecal incontinence. Deficits of the peripheral nervous system caused by aging may lead to alterations of the EAS innervation and consequently potential anorectal dysfunction. In this study, we incorporated a non-invasive intra-rectal EMG probe and advanced high density electromyogram (HDEMG) decomposition techniques to study the effect of aging on EAS innervation zone (IZ) asymmetry.

Methods: Continent parous females, with no history of pelvic trauma or neuromuscular disorders, were recruited for this study. Subjects with identifiable scarring or EAS tears presented on transperineal ultrasound were excluded. Thirteen subjects were included, with young group (n=6, mean age=35.7±4.9) and elderly group (n=7, mean age=67.5±11.8). Surface EMG was recorded during voluntary contraction using a 64-channel intra-rectal probe. Surface interferential HD-EMG recordings were decomposed to motor unit action potential (MUAP) traces using our recently developed K-means clustering convolution kernel compensation algorithm. The IZ of each MU was determined from the bipolar MUAP profiles (Figure 1A) by locating the location of signal phase inversion. The asymmetry index (AI) was then calculated from the resulting IZ distribution.

Results: MUAPs were successfully decomposed from surface EMG recordings in all thirteen subjects. The AI values were 28.7±17.0% for the young group and 55.5±18.8% for the elderly group. Figure 1B shows the IZ barycenter location for the young and aged subjects, where each point is one subject. Figure 1C shows the linear relationship between age and AI (p<0.05). A two-tailed student's t-test demonstrated a significant increase in AI with age by comparison between two groups (p<0.05).

Conclusion: Our work shows, for the first time, that EAS innervation is significantly affected by age and that the EAS innervation tends to become increasingly asymmetrical with age.

Funding Source(s): This work was supported by NIH R00DK082644, R21DK113525, R56AG053778 and SUFU Foundation, the University of Houston and Guangdong Provincial Work Injury Rehabilitation Hospital.
Podium #36  
SURGICALLY INDUCED WEIGHT LOSS RESULTS IN A RAPID AND CONSISTENT IMPROVEMENT OF FEMALE PELVIC FLOOR SYMPTOMS  
Asnat Groutz, MD¹, Avner Leshem, MD¹, Hadar Amir, MD¹, David Gordon, MD¹ and Mordechai Shimonov, MD²  
¹Tel Aviv Medical Center, Tel Aviv, Israel; ²Wolfson Medical Center, Holon, Israel  
Presented By: Asnat Groutz, MD  

Introduction: Pelvic floor disorders affect up to 75% of women considering bariatric surgery. The aim of this prospective, nonrandomized study was to assess the short and medium term effect of significant weight loss on urinary incontinence (UI), pelvic organ prolapse (POP) and colorectal-anal (CRA) symptoms among obese women undergoing bariatric surgery.  

Methods: 160 consecutive women, who underwent bariatric surgery in a single university-affiliated medical center, were prospectively enrolled. Three validated questionnaires on UI (ICIQ-UI), lower urinary tract symptoms (BFLUTS-SF), and pelvic floor disorders (PFDI-20) were used to evaluate patient's pelvic floor symptoms before surgery (base line), at 3-6 months (short term) and 12-24 months (medium term) postoperatively. Strict criteria were used to define clinically significant UI, POP, or CRA symptoms. Statistical analyses were performed using paired, 2-sided, student's t-test for continuous data, and Fischer's exact test for categorical data.  

Results: 101 women (63%, mean age 41.6±11.8 years, mean preoperative BMI 41.6±4.6 kg/m2) completed all questionnaires. By 3-6 months after surgery, the mean percentage weight loss was 22±6.0%, with 32% of participants achieving BMI ≤ 30 kg/m2. By 12-24 months after surgery, further pronounced weight loss was demonstrated, as the mean percentage weight loss was 33.4±8.4%, with 49% of participants achieving BMI ≤ 30 kg/m2. In women who had preoperative UI (42.6%), mean ICIQ score decreased from 9.5±4.0 at baseline, to 3.0±3.6 (p<0.001) and 2.9±3.9 (p<0.001) at 3-6 and 12-24 months postoperatively. In women who had preoperative POP symptoms (17.8%), mean PFDI-20/POP score decreased from 23.8±10.9 at baseline, to 12.7±12.9 (p=0.010) and 13.7±17.1 (p=0.025) at 3-6 and 12-24 months postoperatively. In women who had preoperative CRA symptoms (35.6%), mean PFDI-20/CRA score decreased from 26.0±14.9 at baseline, to 15.4±15.1 (p=0.001) and 18.8±15.4 (p=0.045) at 3-6 and 12-24 months postoperatively. De novo postoperative UI was reported by two patients only; however, de novo POP and CRA symptoms were reported by up to 16% of the patients.  

Conclusion: Surgically induced weight loss is associated with significant improvements in UI, POP and CRA symptoms. The maximal clinical effect is achieved within 3-6 months, and remained constant throughout the second post-operative year. Nevertheless, de novo POP and CRA symptoms are expected in up to 16% of the patients.
IS PROPHYLACTIC STRESS INCONTINENCE SURGERY NECESSARY AT THE TIME OF PELVIC ORGAN PROLAPSE REPAIR? - RATES OF FUTURE SURGERY IN A LARGE POPULATION BASED COHORT IN CALIFORNIA

Raveen Syan, MD¹, Kai Dallas, MD², Ericka Sohlberg, MD¹, Lisa Rogo-Gupta, MD¹, Christopher Elliott, MD¹ and Ekene Enemchukwu, MD¹
¹Stanford, CA; ²Stanford Urology

Presented By: Raveen Syan, MD

Introduction: Data from the OPUS and CARE trials have suggested a de novo stress urinary incontinence (SUI) rate of up to 57% after antero/apical pelvic organ prolapse (POP) surgery in previously continent women. However, the rate at which women have their de novo SUI addressed with further surgical correction is substantially less (OPUS=4.7%). We present a large population based cohort with long-term follow-up to describe rates of future SUI surgery after antero/apical POP surgery in women not undergoing concomitant SUI repair and explore risk factors for subsequent SUI surgery.

Methods: Data from the Office of Statewide Health Planning and Development (OSHPD) was used to identify all women who underwent anterior and/or apical POP repair without a concomitant SUI procedure in the state of California during the years 2005-2011. All cases had at least one year follow-up. Using multivariate analysis, both patient and surgical characteristics were explored for associations with subsequent SUI procedures after index POP repair.

Results: Of the 41,689 women who had an index POP repair without concomitant SUI surgery, 1,504 (3.6%) underwent future SUI repair with a mean follow-up of 4.1 years. Multivariate analysis revealed obesity (odds 1.99, p<0.001), use of mesh at the time of POP repair (odds 2.04, p<0.001), diabetes mellitus (odds 1.19, p=0.04) and being Caucasian were all associated with an increased odds of future SUI surgery (Table 1). Although there was no difference in the odds of future SUI surgery between anterior alone and apical alone repairs (p=0.44), combination repairs carried a higher risk (odds 1.30, p<0.001).

Conclusion: Despite the previously reported high rates of de-novo SUI reported after antero/apical POP repair, only 3.6% of women underwent subsequent SUI surgery in the long-term in our series. Given these findings, the practice of prophylactic SUI surgery at the time of antero/apical POP surgery in all patients is questionable. As certain risk factors may alter a woman’s personal risk, this information can be used to better guide decisions. Further investigation of the motivation to obtain or abstain from future SUI surgery needs to be explored.

Table 1: Predictors of Subsequent Anti-Incontinence Procedures after POP Repair

<table>
<thead>
<tr>
<th>Variable</th>
<th>Odds Ratio</th>
<th>95% CI</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patient age</td>
<td>1.01</td>
<td>1.00-1.02</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Race</td>
<td></td>
<td>Reference</td>
<td>Reference</td>
</tr>
<tr>
<td>White</td>
<td>0.89</td>
<td>0.76-1.04</td>
<td>0.13</td>
</tr>
<tr>
<td>Hispanic</td>
<td>0.48</td>
<td>0.30-0.72</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Black</td>
<td>0.64</td>
<td>0.36-0.81</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Asian</td>
<td>0.55</td>
<td>0.45-0.71</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Other</td>
<td></td>
<td>Reference</td>
<td>Reference</td>
</tr>
<tr>
<td>Payer</td>
<td></td>
<td>Reference</td>
<td>Reference</td>
</tr>
<tr>
<td>Medicare</td>
<td>1.11</td>
<td>0.96-1.29</td>
<td>0.15</td>
</tr>
<tr>
<td>Private</td>
<td>1.04</td>
<td>0.79-1.46</td>
<td>0.76</td>
</tr>
<tr>
<td>Medicaid</td>
<td>1.18</td>
<td>0.75-1.78</td>
<td>0.45</td>
</tr>
<tr>
<td>Compartment of Repair</td>
<td></td>
<td>Reference</td>
<td>Reference</td>
</tr>
<tr>
<td>Anterior Only</td>
<td>0.95</td>
<td>0.82-1.09</td>
<td>0.44</td>
</tr>
<tr>
<td>Apical Only</td>
<td>1.30</td>
<td>1.14-1.48</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Concomitant Anterior and Apical</td>
<td>0.95</td>
<td>0.85-1.07</td>
<td>0.40</td>
</tr>
<tr>
<td>Mesh Augmented Repair</td>
<td>2.04</td>
<td>1.79-2.32</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Obesity</td>
<td>1.99</td>
<td>1.51-2.57</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Diabetes Mellitus</td>
<td>1.19</td>
<td>1.01-1.41</td>
<td>0.03</td>
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</tbody>
</table>
Podium #38
THE PREVALENCE OF PELVIC FLOOR DISORDERS IN ACTIVE DUTY FEMALE SOLDIERS: DATA FROM THE STANFORD MILITARY DATA REPOSITORY
Lisa Rogo-Gupta, MD, D. Alan Nelson MPAS, PhD, Nichole Young-Lin, MD, Jonathan Shaw, MD and Lianne Kurina, PhD
Stanford University, Stanford, CA
Presented By: Lisa Rogo-Gupta, MD

Introduction: Pelvic floor disorders (PFD) are important for active military members, as PFD may be exacerbated by physical activity or negatively impact work performance. Little is known, however, about PFD among active servicewomen. The primary objective was to describe PFD prevalence to define the scope of the problem in this population.

Methods: The Stanford Military Data Repository currently includes data on all medical encounters, detailed demographic and military administrative data on female soldiers who served in the US Army on active duty from 2011 to 2014. Women with at least one PFD diagnosis were identified using International Classification of Diseases, 9th revision codes which were used to categorize PFD in terms of urine, bowel, prolapse, or multiple diagnoses. Descriptive analysis was performed for demographic characteristics and a Cox proportional hazards regression model was used to examine risk factors for PFD.

Results: We identified 118,238 servicewomen, 16.8% of whom had at least one PFD diagnosis. The majority (85%) were bowel-related PFD. Preliminary analysis of PFD risk factors using the regression model indicated that women ≥36yo were at a 39.9% greater hazard of any PFD (95%CI 1.30-1.51) compared to those <23yo. Black race increased the hazard by 35.9% compared to white (CI 1.31-1.41), but no significant increase was seen among Hispanics. Hazard increased with decreasing pay grade and physical fitness and increasing service time, and decreased with increasing combat experience as part of a likely "healthy warrior" selection effect. Weight gain of ≥5 pounds in the prior year was associated with a 26% increase in PFD (CI 1.21-1.31) when controlling for current or recent pregnancy, which increased the hazard by over twofold (CI 2.15-2.41). Increases in PFD were also seen among married and multiparous women.

Conclusion: PFDs impact 16.8% of US active duty servicewomen, higher than the US population-based prevalence of 9.7% of similar aged women. Given the high prevalence of bowel-related PFDs, further research is needed to clarify the risk factors associated with PFD diagnosis subsets in this population.

Table 1. Demographic and Clinical Characteristics of the Cohort Stratified by Pelvic Floor Disorder

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>No PFD (%)</th>
<th>PFD (%)</th>
<th>p-value</th>
<th>Urinary (%)</th>
<th>Bowel (%)</th>
<th>Prolapse (%)</th>
<th>Multiple (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age ≤22</td>
<td>44,990</td>
<td>7,070</td>
<td>.00</td>
<td>610 (15)</td>
<td>6,575 (39)</td>
<td>46 (8)</td>
<td>213 (13)</td>
</tr>
<tr>
<td>23-27</td>
<td>24,635</td>
<td>4,927</td>
<td></td>
<td>861 (16)</td>
<td>4,124 (25)</td>
<td>83 (14)</td>
<td>283 (17)</td>
</tr>
<tr>
<td>≥28</td>
<td>16,441</td>
<td>3,522</td>
<td></td>
<td>927 (23)</td>
<td>3,118 (16)</td>
<td>161 (27)</td>
<td>402 (25)</td>
</tr>
<tr>
<td>BMI ≥36</td>
<td>12,364</td>
<td>4,284</td>
<td>.00</td>
<td>1,771 (45)</td>
<td>2,928 (17)</td>
<td>298 (51)</td>
<td>723 (45)</td>
</tr>
<tr>
<td>Underweight (&lt;18.5)</td>
<td>906</td>
<td>147</td>
<td></td>
<td>15 (0.4)</td>
<td>131 (0.8)</td>
<td>3 (0.5)</td>
<td>4 (0.25)</td>
</tr>
<tr>
<td>Normal weight (18.5-24.9)</td>
<td>52,314</td>
<td>9,292</td>
<td></td>
<td>1,500 (38)</td>
<td>8,135 (49)</td>
<td>219 (37)</td>
<td>615 (38)</td>
</tr>
<tr>
<td>Overweight (25-29)</td>
<td>34,229</td>
<td>8,275</td>
<td></td>
<td>1,809 (45)</td>
<td>6,901 (41)</td>
<td>285 (44.5)</td>
<td>749 (46)</td>
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<tr>
<td>Obese (≥30)</td>
<td>6,366</td>
<td>2,306</td>
<td></td>
<td>530 (15)</td>
<td>1,920 (9)</td>
<td>61 (14)</td>
<td>20 (16)</td>
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<tr>
<td>Unknown</td>
<td>4,615</td>
<td>88 (0.4)</td>
<td></td>
<td>9 (0.2)</td>
<td>48 (4.8)</td>
<td>0 (0)</td>
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</tbody>
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Tobacco Use

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>No PFD (%)</th>
<th>PFD (%)</th>
<th>p-value</th>
<th>Urinary (%)</th>
<th>Bowel (%)</th>
<th>Prolapse (%)</th>
<th>Multiple (%)</th>
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<tbody>
<tr>
<td>No</td>
<td>92,895</td>
<td>15,308</td>
<td>0.00</td>
<td>3,631 (91)</td>
<td>15,489 (93)</td>
<td>563 (94)</td>
<td>1,478 (91)</td>
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<tr>
<td>Yes</td>
<td>5,339</td>
<td>1,300</td>
<td></td>
<td>335 (9)</td>
<td>1,296 (7)</td>
<td>35 (6)</td>
<td>19 (9)</td>
</tr>
<tr>
<td>Child Dependents</td>
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</tr>
<tr>
<td>0</td>
<td>71,421</td>
<td>17,786</td>
<td>0.00</td>
<td>1,609 (41)</td>
<td>10,520 (63)</td>
<td>179 (30)</td>
<td>624 (38)</td>
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<tr>
<td>1</td>
<td>13,760</td>
<td>3,779</td>
<td></td>
<td>863 (22)</td>
<td>2,950 (16)</td>
<td>131 (22)</td>
<td>352 (22)</td>
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<tr>
<td>2</td>
<td>8,509</td>
<td>2,712</td>
<td></td>
<td>970 (22)</td>
<td>2,053 (12)</td>
<td>150 (26)</td>
<td>369 (23)</td>
</tr>
<tr>
<td>3 or more</td>
<td>4,645</td>
<td>1,532</td>
<td></td>
<td>507 (15)</td>
<td>1,192 (7)</td>
<td>128 (22)</td>
<td>284 (17)</td>
</tr>
<tr>
<td>Race</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>53,848</td>
<td>8,744</td>
<td>0.00</td>
<td>1,870 (47)</td>
<td>7,211 (43)</td>
<td>336 (51)</td>
<td>721 (45)</td>
</tr>
<tr>
<td>Black</td>
<td>33,190</td>
<td>9,005</td>
<td></td>
<td>1,522 (38)</td>
<td>7,906 (47)</td>
<td>172 (29)</td>
<td>606 (41)</td>
</tr>
<tr>
<td>Asian/Pacific Islander</td>
<td>5,730</td>
<td>742</td>
<td></td>
<td>150 (4)</td>
<td>667 (4)</td>
<td>20 (3)</td>
<td>52 (3)</td>
</tr>
<tr>
<td>Native American</td>
<td>1,155</td>
<td>163</td>
<td></td>
<td>46 (1)</td>
<td>148 (1)</td>
<td>8 (1)</td>
<td>23 (1)</td>
</tr>
<tr>
<td>Other/Unknown</td>
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<td>1,364</td>
<td></td>
<td>381 (10)</td>
<td>813 (5)</td>
<td>52 (9)</td>
<td>168 (10)</td>
</tr>
<tr>
<td>Ethnicity</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-Hispanic</td>
<td>85,875</td>
<td>11,332</td>
<td>0.00</td>
<td>3,469 (87)</td>
<td>14,641 (87)</td>
<td>520 (88)</td>
<td>1,416 (87)</td>
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<tr>
<td>Hispanic</td>
<td>12,555</td>
<td>2,478</td>
<td></td>
<td>502 (13)</td>
<td>2,104 (13)</td>
<td>88 (12)</td>
<td>213 (13)</td>
</tr>
</tbody>
</table>
Podium #39
NONINVASIVE MOTOR UNIT NUMBER ESTIMATION OF THE PUBORECTALIS MUSCLE IN FEMALES
Nicholas Dias, BS1, Charles Popeney, DO2, Jinbao He, PhD3 and Yingchun Zhang, PhD1
1Department of Biomedical Engineering, University of Houston, Houston, TX; 2Fort Bend Neurology, Sugar Land, TX; 3School of Electronic and Information Engineering, Ningbo University of Technology, Ningbo, China
Presented By: Yingchun Zhang, PhD

Introduction: Motor unit number estimation (MUNE) provides an estimate of the number of functioning motor units in a target muscle. It has been impractical to apply MUNE techniques to the pelvic floor muscles due to the need for intramuscular EMG (in spike triggered averaging MUNE) and multiple points of stimulation (in multi-point stimulation MUNE). Recent advances in EMG techniques have extended the applicability of MUNE by negating the need for intramuscular EMG and multiple point stimulation by employing advanced signal processing techniques to decompose noninvasive surface EMG signals into single motor unit potentials (SMUP). This study aims to apply a newly developed decomposition based MUNE technique to, for the first time, estimate the number of functioning motor units in the puborectalis muscle of females.

Methods: The study protocol was approved by the University of Houston Institutional Review Board. The pudendal nerve was stimulated against the ischial spine via a St Mark’s electrode mounted on the physician’s glove. High density surface EMG (HDEMG) was recorded during maximal voluntary contraction, and during supramaximal stimulation via a 64-channel intra-vaginal HDEMG probe. Contraction data was decomposed into SMUPs using our developed K-Means Clustering Convolution Kernel Compensation method. SMUPs were separated into left and right groups based on the location of their innervation zone. Mean SMUPs were derived by averaging all SMUP waveforms in each group. MUNE was calculated by taking the weighted average of the compound muscle action potential (CMAP) size to the mean SMUP size ratio for both sides.

Results: Ten subjects were recruited from the patient population of Fort Bend Neurology clinic. A bilateral CMAP response was detected via HDEMG for seven subjects. Decomposition yielded, on average, 3.28±1.6 SMUPs on the left side and 2.3±1.8 SMUPs on the right side. Average MUNE for the left and right sides was 58.45±33.3 and 47.21±27.7, respectively.

Conclusion: The results of this study suggest, for the first time, the feasibility of using noninvasive decomposition based MUNE to estimate the number of functioning motor units in the female puborectalis. Further research will focus on improving the decomposition yield of EMG signals acquired from the puborectalis.

Funding Support: This research was supported in part by SUFU Foundation, NIH DK082644 and the University of Houston.
Podium #40
DO PATIENTS DISCONTINUE OVERACTIVE BLADDERS MEDICATIONS AFTER SACRAL NEUROMODULATION?
Katherine Amin, MD, Dena Moskowitz, MD, Kathleen Kobashi, MD, Una Lee, MD and Alvaro Lucioni, MD
Virginia Mason Medical Center, Department of Urology, Seattle, WA
Presented By: Katherine Amin, MD

**Introduction:** Overactive bladder medications (OABM) are often discontinued due to poor tolerability and recent data shows long term usage of anticholinergic OABM is associated with detrimental cognitive effects in the elderly. Therefore, utilization of 3rd line treatment options, particularly sacral neuromodulation (SNM), is attractive. However, a subset of patients continue or restart OABM while on 3rd line therapy. We explore a cohort of patients at our tertiary referral center to assess the usage of concurrent OABM in patients with SNM.

**Methods:** A retrospective chart review was performed on all patients who underwent SNM from 8/2014 – 6/2016. Patients were excluded if indication was urinary retention or if underwent SNM removal. We identified clinical characteristics, urodynamic parameters, and filled prescriptions of OABM queried through our electronic medical record. Concurrent therapy was defined as consecutively filling 2 anticholinergic or beta-3 agonist OABM prescriptions after SNM. We examined Patient Global Impression of Improvement (PGI-I) and percent improvement. T-test and Fishers exact were used to compare groups.

**Results:** 78 patients were identified. Demographic and clinical characteristics are shown in Table 1. 71% (n=55) of patients stopped and never restarted OABM (SNM alone). Median follow up was 14.5 vs. 13 months between concurrent and SNM alone groups, respectively. In the concurrent group, 78.3% of patients continued to fill OABM immediately following SNM placement and 21.7% stopped and restarted OABM at least 2 months postoperatively. Patients with concurrent use were significantly older in age (73.2 vs. 64.0 years) when compared to SNM alone patients. There was no difference seen in BMI, SNM revision, and urodynamics parameters. PGI-I and percent improvement did not differ between groups.

**Conclusion:** Our data reflects that >70% of patients who progress to SNM discontinue OABM and utilize this as their sole OAB treatment modality. A small portion of patients concurrently use OABM following SNM, however patient satisfaction and percent improvement do not differ between groups. Given data on OABM cognitive effects, SNM alone is an appealing treatment modality for patients.

<table>
<thead>
<tr>
<th></th>
<th>Concurrent</th>
<th>SNM alone</th>
<th>P (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>n</td>
<td>23</td>
<td>55</td>
<td></td>
</tr>
<tr>
<td>Age at interstim, mean (SD)</td>
<td>73.2 (8.3)</td>
<td>64.0 (16.4)</td>
<td>0.0128 (2.0,10.4)</td>
</tr>
<tr>
<td>Male, n (%)</td>
<td>5 (21.7)</td>
<td>3 (5.5)</td>
<td>0.0446</td>
</tr>
<tr>
<td>BMI, mean (SD)</td>
<td>31.0 (6.5)</td>
<td>29.8 (8.1)</td>
<td>0.5306 (-2.6,5.0)</td>
</tr>
<tr>
<td>Revision, n (%)</td>
<td>2 (6.7)</td>
<td>6 (10.9)</td>
<td>1.000</td>
</tr>
<tr>
<td>UDS Capacity, mean (SD)</td>
<td>n=17</td>
<td>N=42</td>
<td>0.7970</td>
</tr>
<tr>
<td>DDO present, n (%)</td>
<td>12 (70.6)</td>
<td>18 (42.9)</td>
<td>0.0840</td>
</tr>
<tr>
<td>Follow up, months, median (range)</td>
<td>14.5 (5-25)</td>
<td>13 (1-30)</td>
<td>0.5955</td>
</tr>
<tr>
<td>PGI-I, mean (SD)</td>
<td>2.8 (1.0)</td>
<td>2.4 (1.6)</td>
<td>0.8600</td>
</tr>
<tr>
<td>Percent Improvement, mean (SD)</td>
<td>39.2 (35.5)</td>
<td>41.4 (54.9)</td>
<td></td>
</tr>
</tbody>
</table>

Table 1. Demographic and clinical factors as well as outcomes for patients who underwent SNM.
Podium #41  
ORAL ENOBOSARM SHOWS PROMISING ACTIVITY IN POST-MENOPAUSAL WOMEN WITH STRESS URINARY INCONTINENCE: RESULTS OF A PHASE 2 STUDY
Kenneth M. Peters, MD1, Diane Newman DNP2, Laurence Belkoff, DO3, Kiran Nandalur, MD1, Mary Ann Johnston PharmD4, Susan Small RPh4, Ryan Taylor, PhD4 and Larry Sirls, MD1  
1Oakland University William Beaumont School of Medicine Royal Oak, MI; 2University of Pennsylvania, Philadelphia, PA; 3Urological Consultants of SEPA, Bala Cynwyd, PA; 4GTx, Inc., Memphis, TN
Presented By: Kenneth M. Peters, MD

Introduction: There are no effective oral therapies available in the US for women with stress urinary incontinence (SUI). The pelvic floor and urinary sphincter are androgen receptor rich and can be modulated by androgenic agents. Enobosarm is a novel selective androgen receptor modulator (SARM) that has been safely studied in trials involving > 1700 subjects, for various conditions. The purpose of this pilot study is to assess the safety and efficacy of enobosarm for the management of SUI in post-menopausal women.

Methods: In this Phase 2 study, 3 mg daily enobosarm was given orally for 12–weeks (wks) to post-menopausal women with predominant SUI. Inclusion criteria include: 3–15 SUI episodes/day (averaged over 3 days), a positive bladder stress test (BST) and 24-hour pad weight greater than 3 g. The primary endpoint was the number of stress incontinence episodes per day on the 3–day voiding diary. Secondary endpoints include pad weights, BST, and quality of life (QOL) instruments (MESA, PGI−S, PGI−I, UDI−6, IIQ−7, and FSFI). Patients are followed for up to 40–wks.

Results: 17 subjects (mean age: 60.7) completed 12–wks of treatment. All patients experienced a greater than 50% decrease in the average number of reported stress leaks per day. At 12–wks, stress leaks decreased from a mean baseline of 5.08 to 0.88 leaks/day (83%), and post–treatment durability was noted in all patients who surpassed the first follow up visit at 4 wks including 6 patients who completed 40–wks of follow–up (Figure). 6/17 women had a negative BST at12–wks and pad weights decreased by >70%. All QOL scores improved at 12–wks; most notably median FSFI score increased from 15.9 to 28.05 and MESA–stress score fell from 81 to 41. There were no serious adverse events and the drug was well tolerated.

Conclusion: These results suggest that enobosarm could significantly improve symptoms observed in women with SUI. Stress leaks decreased in all women by a mean of 83% at 12–wks and the durability of the response was at least 40 wks in those patients who completed the follow up. QOL improved consistently across all instruments. A large placebo–controlled trial has been initiated to confirm safety and efficacy.

Study funded by GTx
Podium #42
THE DISTRIBUTION OF POST-VOID RESIDUAL VOLUMES (PVR) IN PEOPLE SEEKING CARE: AN ANALYSIS OF 880 PARTICIPANTS OF THE SYMPTOMS OF LOWER URINARY TRACT DYSFUNCTION NETWORK (LURN) OBSERVATIONAL COHORT STUDY
Matthew O. Fraser, PhD1, Abigail R. Smith, PhD2, Claire C. Yang, MD3, John O.L. DeLancey, MD4, Brenda W. Gillespie, PhD4, John L. Gore, MD, MS5, Pooja Talaty, MS, MHA6, Victor P. Andreev, PhD, DSc2, Anca Stefan, PhD2, Karl J. Kreder, MD, MBA6, Margaret G. Mueller, MD7, H. Henry Lai, MD8, Bradley A. Erickson, MD, MS, FACs6, Ziya Kirkali, MD9 and Andrew C. Peterson, and the LURN Study Group1
1Duke University, Durham, NC; 2Arbor Research Collaborative for Health, Ann Arbor, MI; 3University of Washington, Seattle, WA; 4University of Michigan, Ann Arbor, Mi; 5NorthShore University Health System, Chicago, IL; 6University of Iowa, Iowa City, IA; 7Northwestern University, Chicago, IL; 8Washington University School of Medicine, St. Louis, MO; 9National Institute of Diabetes and Digestive and Kidney Diseases, Bethesda, MD
Presented By: Matthew O. Fraser, PhD

Introduction: Conventional wisdom states that elevated PVR may correlate with risk of UTI, relates to severity of lower urinary tract symptoms (LUTS), and is an indication for clinical intervention. We sought to describe the distribution of PVR across patients with and without LUTS.

Methods: PVR and demographic data from care-seeking patients with LUTS were obtained from the LURN Observational Cohort study. Self-reported symptoms were collected using the AUA-SI and the LUTS Tool. PVR values from individuals without LUTS were obtained from the Renal and Lung Living Donors Evaluation Study (RELIVE), a study of outcomes in living kidney and lung donors, and continent women in the Establishing the Prevalence of Incontinence (EPI) study, a population-based study of racial differences in urinary incontinence prevalence. Comparisons were made using Wilcoxon two-sample tests, Spearman's rho, and logistic regression.

Results: Median PVR across the three studies was 26ml (LURN, n=880, range 0-932 mL), 20mL (EPI, n=166, range 0-400 mL), and 14ml (RELIVE, n=191, range 0-352 mL); differences were significant (p<0.001), but not clinically relevant. In LURN, median PVR was similar for males and females (27 mL vs. 25 mL, p=0.25, Figure), but males had 3.6 times higher odds of having PVR>200ml (95% CI=1.72-7.48). In RELIVE, median PVR was significantly higher for males (20 mL vs. 0 mL, p=0.004). PVR was not correlated with age among females in any population, but was slightly positively correlated with age in men in LURN (rho=0.11) and RELIVE (rho=0.05). In LURN, PVR was weakly positively correlated with voiding and post-micturition symptoms (rho range 0.11-0.17) and bother ratings (rho range 0.05-0.17) on the LUTS Tool. The distribution of PVR was similar for females ± recurrent UTI (median 26 mL vs 25 mL, NS) and for males with any UTIs (median 29 mL vs 27 mL, NS).

Conclusion: Care-seeking patients have PVRs similar to those in people without LUTS (RELIVE and EPI). While PVR was positively correlated with all voiding symptoms, the mean differences only explain ~2% of the variance. Our results suggest patient-reported severity and bother of voiding symptoms may not reflect elevated PVR.

Funding: NIH/NIDDK

Figure: Distribution of PVR by Study and Sex
Podium #43
NO INCREASED RISK OF CLEAN INTERMITTENT CATHETERIZATION WITH ONABOTULINUMTOXINA RETREATMENT: POOLED ANALYSIS OF RANDOMIZED CONTROLLED TRIALS
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Presented By: Gary E. Lemack, MD

Introduction: The risk for clean intermittent catheterization (CIC) is known to exist in patients with overactive bladder (OAB) who have been treated with onabotulinumtoxinA (onabotA). The risk of CIC in patients undergoing repeat injection is unknown. A post hoc analysis of pooled placebo-controlled trials was undertaken to evaluate the risk of CIC as well as efficacy and quality of life (QOL) outcomes following reinjection with onabotA 100U.

Methods: Patients with OAB who received treatment with onabotA 100U or placebo in studies NCT00910845, NCT00910520, or NCT01767519 were included (NCT01945489 will be added for the presentation). The incidence of CIC was evaluated at week 12 following treatment cycles 1 and 2. The mean change from baseline (BL) in UI episodes/day, proportions of patients with 100% reduction in UI (ie, “dry”), mean changes from BL in King’s Health Questionnaire (KHQ) Role (RL) and Social Limitations (SL) domains, and proportions of patients with improvements on the Treatment Benefit Scale (TBS) were assessed at week 12 after treatment cycle 1 and 2. Adverse events were recorded.

Results: The rates of CIC in the first 12 weeks following the first treatment were 5.6% for onabotA (n=697) and 0.2% for placebo (n=602). In the 12 weeks after the second treatment, CIC rates were 5.5% for those who received onabotA for both treatment cycles (n=382) and 3.8% for those who received their first onabotA treatment in cycle 2 (n=475); 4.5% and 3.8%, respectively, were de novo CIC use; 1% of patients who received two treatments with onabotA required CIC within 12 weeks following each treatment. At 12 weeks after the first onabotA treatment, the mean change from BL in UI episodes/day was -3.1 from a BL of 5.4, and 29.7% of patients were dry. Mean changes from BL in the KHQ RL and SL domains were -28.4 and -18.6, respectively, both exceeding the minimally important difference of -5 points. The proportion of patients with improvement/great improvement on the TBS at 12 weeks was 69.8%. No unexpected safety signals were observed.

Conclusion: In this large, pooled population of OAB patients there was no increased risk of CIC with reinjection or previous CIC. The incidence of de novo CIC was consistently low after repeat treatment. OnabotA 100U improved urinary symptoms and QOL, showed treatment benefit, and was well tolerated.

Funding: Allergan plc
Podium #44
RELATIONSHIPS BETWEEN METABOLIC FACTORS, URINARY INCONTINENCE AND OVERACTIVE BLADDER SYMPTOMS AMONG MEN AND WOMEN IN THE LURN OBSERVATIONAL COHORT STUDY
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Presented By: H. Henry Lai, MD

Introduction: We examined the relationships between metabolic factors and both urinary incontinence (UI) and overactive bladder (OAB) symptoms among men and women seeking treatment for lower urinary tract symptoms (LUTS).

Methods: Data were obtained from the Symptoms of Lower Urinary Tract Dysfunction Research Network (LURN) Observational Cohort Study. This cross-sectional analysis of baseline data from men and women used the LUTS Tool to identify participants with and without UI, with and without OAB symptoms, and among those with OAB, those with urgency incontinence ("OAB with UUI") versus without urgency incontinence ("OAB without UUI"). Metabolic factors assessed included: central obesity (age and race adjusted), body mass index (BMI), hypertension, dyslipidemia, and diabetes mellitus. Multivariable logistic regression was used to explore associations between metabolic factors and LUTS.

Results: The 920 patients (456 men, 464 women) had a mean age of 59±14 years; 82% were White, 60% had central obesity, 43% had BMI ≥30, 65% had hypertension, 32% had dyslipidemia, and 17% had diabetes. Additionally, 67% reported UI, and 65% reported OAB. Central obesity was associated with the presence of any UI (odds ratio [OR]=1.41, p=0.044) and the presence of OAB (OR=1.48, p=0.014). There was no significant association between other metabolic factors examined and the presence of UI or OAB. Among patients with OAB (n=595), there was no difference between those reporting OAB with UUI compared to OAB without UUI in any of the metabolic factors. Hypertension was associated with the presence of urinary frequency (OR=1.46, p=0.022). Dyslipidemia was associated with nocturia, defined as waking to urinate at least twice a night (OR=1.57, p=0.004).

Conclusion: We observed associations between both UI and OAB and central obesity, but not with other metabolic factors (hypertension, dyslipidemia, or diabetes) among men and women seeking treatment for LUTS. Central obesity was not associated with frequency or nocturia. Future studies are needed to further investigate the mechanistic links between OAB/UI and central obesity.

Source of Funding: LURN is supported by grants from the NIDDK
Podium #45
SUPRASPINAL CONTROL VARIATIONS IN MULTIPLE SCLEROSIS PATIENTS WHO VOID SPONTANEOUSLY VERUS PATIENTS WITH VOIDING DYSFUNCTION
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Houston, TX
Presented By: Rose Khavari, MD

Introduction: In this study, we seek to compare brain activity processes at the time of initiation of voiding in Multiple Sclerosis (MS) patients who are voiders versus patients with voiding dysfunction. We hypothesize that female MS patients with voiding dysfunction have a distinct Blood Oxygen Level Dependant (BOLD) pattern activation in specific a priori regions of interest (ROIs) at the time of initiation of voiding when compared to patients who void spontaneously.

Methods: Twenty seven ambulatory female MS patients with lower urinary tract dysfunction were recruited for this IRB approved study: Group 1; voiders (n=15) and group 2; voiding dysfunction (n=12) which was defined as patients with postvoid residual urine of ≥ 40% of their maximum cystometric capacity or patients who performed self-catheterization. We recorded brain activity via fMRI with simultaneous urodynamic testing (UDS). From the transformed datasets, average fMRI activation maps (student t-test) for both groups were created, and areas of significant activation were identified (p<0.05). A priori ROIs identified by a prior meta-analysis to be involved in voiding were selected.

Results: Group-averaged BOLD activation maps indicated distinct differences in activation patterns between groups (figure 1a). A reversed (negative) BOLD effect was noted in the PMC, PAG, left cingulate, left thalamus and the reticular formation.

Earlier positron emission topography studies have identified right dorsomedial pontine tegmentum and the right inferior frontal gyrus to be associated with significantly increased blood flow in healthy women at the time of voiding. Our results are consistent with these preliminary data in the literature where PMC, PAG, left cingulate, left thalamus and the reticular formation seem to have different pattern of activation between female MS voiders and the ones with voiding dysfunction.

Conclusion: Our preliminary group and network analyses demonstrate that distinct supraspinal patterns of activation and deactivation exists between MS patients who are voiders and who have voiding dysfunction.
Podium #46  
**CHANGES IN BRAIN ACTIVITY FOLLOWING INTRADERMUSOR INJECTION OF ONABOTULINUMTOXINA IN PATIENTS WITH MULTIPLE SCLEROSIS: AN FMRI STUDY**

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Houston, TX  
Presented By: Rose Khavari, MD

**Introduction:** OnabotulinumtoxinA (BTX-A) is a well-described treatment for Neurogenic Detrusor Overactivity (NDO) and while its motor effects on detrusor muscle is extensively studied, its sensory effects are not. Prior functional neuroimaging studies have suggested that women with overactive bladder have increased brain activity in the cingulate cortex, insula, and frontal cortex in response to bladder filling. The aim of this study was to evaluate the impact of intradetrusor BTX-A on brain activity in female multiple sclerosis (MS) patients with NDO using concurrent functional magnetic resonance imaging (fMRI) and UDS in a priori regions of interest.

**Methods:** We conducted a prospective study of 12 women with stable MS and NDO undergoing fMRI with simultaneous UDS prior to and 6-weeks following BTX-A. During the filling phase patients signalled the strong urgency. From individual fMRI activation maps at strong urgency average fMRI activation map in MNI (Montreal Neuroimaging Institute) space were created for pre and post BTX-A from which areas of significant activation were identified (p<0.05).

**Results:** fMRI activation increased post BTX-A in the right cingulate body (x (right positive),y (posterior positive),z (inferior positive) coordinates = 17,4,39, p=0.0012), the left posterior cingulate (-7,-37,22,p=0.02), the left anterior cingulate (-3,24,8,p=0.0015), the right prefrontal cortex (3,51,46,p=0.0015), the insula (32,12,14,p=0.0138) and the pons micturition center (3,-29,-28,p=0.05). Areas that showed decreased activity were sparse and included the left cerebellum (-31,-63,-62,p=0.001), the left fusiform gyrus (-40,-3,-28,p=0.065) and the bilateral lentiform nucleus (-17,6,-9 and 18,2,-9, p=0.026).

**Conclusion:** Intradetrusor injection of BTX-A appears to increase the activity of the brain regions known to be involved in sensation and process of urinary urgency in female MS patients with NDO. This is the first study of its kind to evaluate the possible sensory effects of BTX-A at the human brain level where sensory awareness is located. This pattern of activation may be used to phenotype patients further to optimize therapy or to uncover sensory effects of onabotulinumtoxinA beyond the bladder.
Podium #47
THE EFFECTS OF AUGMENTATION CYSTOPLASTY AND BOTULINUM TOXIN USE ON PATIENT REPORTED BLADDER FUNCTION AND SATISFACTION AMONG INDIVIDUALS WITH SPINAL CORD INJURY PERFORMING INTERMITTENT CATHETERIZATION
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Presented By: Jeremy B Myers, MD, FACS

Introduction: Clean intermittent catheterization (CIC) is the bladder management strategy recommended by clinicians after spinal cord injury (SCI) because it is safer than indwelling catheters. However, patient dissatisfaction with CIC is evident by high rates of switching to other forms of bladder management over time. We hypothesize that interventions such as bladder botulinum toxin injection, or augmentation cystoplasty can improve satisfaction with CIC, which may then lower the rates of CIC discontinuation. Thus, in a cohort of SCI individuals on CIC, we sought to compare bladder function and satisfaction between these interventions.

Methods: SCI individuals performing CIC as their primary management, > 1 year from injury, were identified from the NBRG registry, which is a multicenter prospective observational study of SCI patients. Individuals were categorized into 3 groups: 1) CIC-alone, 2) CIC with bladder augmentation cystoplasty (AUG), and 3) CIC with botulinum toxin use (BTX). Multivariate linear regression was used controlling for multiple factors to establish differences in the Neurogenic Bladder Symptom Score (NBSS), sub-domains of the NBSS (Incontinence, Storage & Voiding, Consequences), and the final question of the NBSS (satisfaction with urinary function) between the three managements.

Results: 845 participants met inclusion criteria; mean age was 43 ± 13 years and the mean time from SCI was 14 ± 11 years. There were 273 (32%) tetraplegic patients; 39% of the cohort were female. Current bladder management was: CIC-alone in 562 (67%), AUG in 125 (14%), and BTX in 158 (19%). Total NBSS, compared to CIC-alone, showed AUG had improved urinary function (+12%, p<0.001) and no difference in the BTX group. The overall change in the AUG group was driven by improvements in the Incontinence sub-domain where AUG was much better than CIC-alone (+20%, p<0.001). There were no differences between groups in the other NBSS subdomains. Assessing satisfaction with urinary function, compared to CIC-alone, AUG also had better satisfaction (+29%, p<0.001); there was no difference in satisfaction with BTX.

Conclusion: Among individuals performing CIC, augmentation cystoplasty had the best urinary function, driven by improvements in incontinence. Satisfaction with urinary function was also highest in individuals with augmentation cystoplasty.

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Podium #48
VOLITIONAL VOIDING OF THE BLADDER AFTER SPINAL CORD INJURY: VALIDATION OF BILATERAL LOWER EXTREMITY MOTOR FUNCTION AS A KEY PREDICTOR
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Presented By: Christopher S. Elliott, MD, PhD

Introduction: For many persons with spinal cord injury (SCI), a return of volitional bladder voiding is considered more important than regaining motor function. Recently a predictive model using only composite bilateral lower extremity motor (LEM) scores for levels L2-S1 (range 0-50) was put forth by the European Multicenter Spinal Cord Injury (EMSCI) study group that showed excellent predictive power with an area under the curve (AUC) of 0.912. However appropriate validation of this model is lacking. We sought to further validate the EMSCI model using a national SCI cohort.

Methods: We created models of volitional voiding using the United States National SCI Database for the years 2007-2016. In addition to testing LEM scores, we evaluated other patient variables that we hypothesized might affect volitional voiding including age, gender, rectal motor/sensory preservation, AIS classification and sensory level. Logistic regression modeling and receiver operator characteristic (ROC) curves were created.

Results: In the cohort of 4327 individuals, volitional voiding was present in 1333 (30.8%) at 1-year follow-up. While younger age, female gender, improved AIS classification and more caudal sensory level were all predictors of volitional voiding, LEM scores were the most predictive (AUC=.919). Addition of the other patient characteristics did little to improve the predictive power of LEM scores (AUC=.932 for the full model). Further analysis of the predictive power of LEM scores suggests that the negative predictive value is better than the positive predictive value as LEM AUC decreases in groups more likely to volitionally void (AIS C=.724 and AIS D=.644).

Conclusion: Our study verifies the validity of the EMSCI predictive model of volitional voiding after SCI. The differing ability of LEM scores to predict voiding based on neurologic class of injury should be noted.

LEM Score to Predict Volitional Void at 1 Year

![Graph showing LEM scores with AUC values for different AIS classifications](image-url)
Podium #49
INTERACTIVE TELEMEDICINE PLATFORM FOR MANAGEMENT OF NEUROGENIC BLADDER AND URINARY TRACT INFECTION PREVENTION FOR INDIVIDUALS WITH TRAUMATIC AND NON-TRAUMATIC SPINAL CORD INJURY

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Presented By: M. Lynn Stothers, MD

Introduction: Urinary tract infection (UTI) is the most frequent secondary health complication after spinal cord injury (SCI) associated with septicemia, resistant organisms, autonomic dysreflexia, and reduced quality of life. The SCI community identified UTI as a priority in healthcare improvement. The objective is to determine if telemedicine with patient home monitoring of physiologic parameters can reduce UTI and UTI hospitalizations in SCI persons.

Methods: Prospective cohort study of SCI subjects at a specialty center with symptomatic UTI history. Subjects served as own controls for 6-month run in, then instituted telemedicine for 6-months. Telemedicine platform was built for ease of persons with SCI with features allowing high injury levels using second blow technology to participate independently. Subjects given blood pressure cuff, thermometer and urine dipsticks for home monitoring of bladder symptoms. Standardized telemedicine visits were conducted monthly for 6-months, subjects reported home monitoring measurements and bladder issues. At study initiation and completion validated symptom scores were performed; The Neurogenic Bladder Symptom Score, SF-36 and Qualiveen-30. Feasibility of telemedicine included: compliance, satisfaction (Likert-6) and software function (Likert-6). Urine cultures obtained at pre-run in, intervention onset, completion and symptomatic UTI. Bacteria were frozen for genetic analysis to determine patterns of persistent vs recurrent infection.

Results: N=55, 41 male, 23-70yrs. Cause of neurogenic bladder due to SCI(47), multiple sclerosis(4), spina bifida(4). Two subjects used adaptive mouth technology to operate telemedicine independently. Of 30 subjects at study completion, 16 demonstrated reduction in UTI occurrence from run in vs telemedicine, yielding significant reduction in UTI/month (P=0.047 Wilcoxon signed rank test). 120 urine cultures had identified isolates; 17 bacteria strains, 9 resistant. 300 visits demonstrated 90% compliance and 79% operational software. On satisfaction survey users agreed/strongly agreed: UTI discussion helpful(72%), increased motivation to monitor health(87%), consider it for future health services(97%), overall satisfied with telemedicine home monitoring(100%).

Conclusion: Regarding compliance, software function and user satisfaction, telemedicine is successful, even for high tetraplegics. Telemedicine can be used to improve neurogenic bladder management and increase healthcare access.
Podium #50
PATIENT REPORTED BLADDER FUNCTION AND SATISFACTION AMONG TETRAPLEGIC PATIENTS WITH DIFFERENT BLADDER MANAGEMENT STRATEGIES
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Presented By: Jeremy B Myers, MD, FACS

Introduction: Bladder management has a significant quality of life (QoL) impact on individuals after spinal cord injury (SCI). We describe patient reported bladder function and satisfaction with four common bladder management strategies in tetraplegic individuals.

Methods: The NBRG registry is a multicenter prospective observational study asking SCI patients about their bladder related QoL. We excluded participants < 1 year from injury. Bladder management included: clean intermittent catheterization (CIC), indwelling catheter (IC, [Foley or suprapubic tube]), surgical (bladder augmentation, catheterizable channel, urinary diversion), and voiding (condom catheter, involuntary leaking, volitional). Multivariate linear regression was used controlling for multiple factors to establish differences in the Neurogenic Bladder Symptom Score (NBSS), sub-domains of the NBSS (Incontinence, Storage & Voiding, and Consequences), and the final question of the NBSS (satisfaction with urinary function) between the four managements.

Results: 611 participants had a mean age of 44 ± 13 years, a mean time of 16 ± 12 years since SCI, and 33% were female. Bladder management was CIC in 217 (36%), IC in 179 (29%), surgical in 94 (15%), and voiding in 121 (20%). The total NBSS, compared to CIC, was better for IC (+31%, p<0.001) and surgery (+12%, p=0.015) and worse for voiding (-13%, p=0.003). NBSS Incontinence and Storage & Voiding had a similar pattern; significantly better in IC and surgery compared to CIC and worse in voiding patients. NBSS Consequences was better in voiding patients (+19%, p=0.001). Compared to CIC, there was higher satisfaction with urinary function in surgery (+26%, p<0.001) and no difference in IC and voiding patients. Total NBSS was also improved by male gender (+19%, p<0.001), and worsened by urinary tract infections (1-3 per year (-13%, p<0.001) or 4+ per year (-22%, p<0.001).

Conclusion: In tetraplegic individuals, compared to CIC, bladder function was improved in those using IC and undergoing surgery, and worse in voiding patients. Surgical management had the highest satisfaction over CIC, IC, and voiding patients.

Source of Funding: PCORI CER14092138

Figure: Satisfaction with urinary system in tetraplegic patients. As compared to CIC, surgical patients had better satisfaction and indwelling and voiding patients had no difference in satisfaction. (CIC) clean intermittent catheterization.
Poster #M1
HIGH ATTRITION RATE AND LOW PROGRESSION TO ADVANCED THERAPY FOR PATIENTS WITH OVERACTIVE BLADDER: A HOSPITAL SYSTEM WIDE STUDY
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Presented By: Siobhan M. Hartigan, MD

Introduction: Overactive bladder (OAB) is a chronic disorder predicted to affect 20% of the world population by 2018. Following conservative management and behavioral modifications, patients with persistent symptoms or continued bother are offered pharmacotherapy. However, multiple studies show that tolerance and long-term adherence to these medications are exceedingly poor with a mere 12-39% of patients continuing them at 12 months. The next step in treatment is advanced therapy with posterior tibial nerve stimulation (PTNS), sacral neuromodulation (SNM), or chemodenervation. We hypothesized that a large number of OAB patients who have discontinued pharmacotherapy or are unsatisfied with treatment have been lost to follow up and not offered advanced therapies. Our objective was to investigate the attrition rate for OAB patients and determine the rate of progression to advanced therapies.

Methods: A retrospective review was performed across a single academic hospital system to find all new outpatient encounters between August 1, 2014 and August 1, 2015 with a diagnosis of OAB, wet or dry. An electronic medical record search was used to determine the number of subsequent visits for OAB for each patient and any advanced therapy received during the study period. A subgroup analysis was performed for patients seen and cared for only by urologists. The attrition rate for patients with OAB was determined and percentages calculated for those receiving PTNS, SNM, or chemodenervation.

Results: A total of 17,041 unique patients had an encounter for OAB, 67.33% of whom did not have a second visit. Urology providers saw a total of 4,735 unique patients for OAB and only 1,473 (31.11%) had a second visit. There was an 87.18% dropout rate by the third visit. Among all urology patients with OAB, there were 128 patients (2.7%) that underwent any advanced therapy within the study period; 33 patients had PTNS, 49 had SNM, and 49 had chemodenervation. There were 3 patients that underwent ≥2 of these.

Conclusion: OAB is a widely prevalent disorder with the majority of patients discontinuing pharmacotherapy long-term despite chronic symptoms. Advanced therapy is part of the clinical care pathway for refractory OAB however the retention rate, even in a urology clinic, is exceedingly low, with only a small percentage of patients undergoing advanced therapies. There are likely a large number of OAB patients appropriate for but not receiving advanced therapy.
Poster #M2
A RANDOMIZED, CONTROLLED TRIAL OF ACTIVE VS. PASSIVE VOIDING TRIALS
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Presented By: James T. Mills, MD, MS

Introduction: Voiding trials are essential to monitor for urinary retention (UR) after catheterization, but the optimal method is unknown in the general inpatient population. We sought to determine the effect of active vs. passive voiding trials on time to hospital discharge and the rates of urinary tract infection (UTI) and urinary retention. We also sought to describe risk factors for UTI and UR.

Methods: An assessor-blind, randomized, clinical trial enrolling 274 inpatients requiring catheter removal. Participants were randomized to an active voiding trial (AVT; bladder filled with saline before catheter removal) or passive voiding trial (PVT; urine filled the bladder naturally). Primary outcome was time to hospital discharge after catheter removal. Secondary outcomes were UTI (National Surgical Quality Improvement Program criteria) and UR (requiring repeat catheterization) within 2 weeks of catheter removal. Risk factors for UTI and UR were determined with logistic regression.

Results: Median time to discharge was 28.4 hours (IQR 13.6-69.3 hours) in the active group and 30.0 hours (IQR 10.4-75.6 hours) in the passive group (p=0.93). Median time to void was 18.0 minutes (IQR 5-115 minutes) in the active group and 236 minutes (IQR 136-360 minutes) in the passive group (p<0.0001). Six of 125 (4.8%) patients in the active group and 13 of 101 (12.9%) in the passive group developed UTI (OR 0.333 [0.122, 0.909]; p=0.0258). Eleven of 125 (8.8%) in the active group and 12 of 101 (11.9%) in the passive group developed UR (OR 0.671 [0.283, 1.59]; p=0.362).

Conclusion: Although patients voided over 3 hours sooner in the AVT group compared to the PVT group, there was no difference in time to hospital discharge. Patients in the AVT group had 63% fewer UTIs compared to the PVT group. Thus, increase in use of AVTs may result in decreased CAUTI. There was no difference in the rate of UR between the groups. Pelvic surgery increased the odds of UTI. BPH, neurological disease, and admission to a neurosurgical unit increased the odds of UR.

FUNDING: None
Poster #M3
ASSOCIATION BETWEEN OVERACTIVE BLADDER SEVERITY AND BOLD FMRI BRAIN ACTIVITY
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Presented By: Steven Jonathan Weissbart, MD

Introduction: Prior studies using functional magnetic resonance imaging (fMRI) have demonstrated altered patterns of brain activity in women with overactive bladder (OAB) compared to healthy controls. We aim to investigate if brain activity is associated with severity of OAB symptoms. We hypothesize that OAB severity will be associated with greater increases in activity in the anterior cingulate, insula, and frontal cortices.

Methods: Women with refractory overactive bladder who elected sacral neuromodulation therapy were invited to participate in the study. At baseline, subjects completed the ICIQ-FLUTS questionnaire and underwent blood-oxygen-level dependent (BOLD) fMRI brain imaging. During fMRI acquisition, subjects experienced multiple cycles of bladder filling via an infusion pump and were asked to signal their experience of urinary urgency by pressing a response button. Brain activity during urgency was compared to brain activity without urgency and was measured in brain regions known to be involved in the micturition cycle (ACC, PCC, insula, thalamus, frontal cortex, and pons). Spearman's correlation was used to investigate the relationship between reported overactive bladder symptoms (ICIQ-FLUTS) and BOLD signal activity.

Results: Twelve women with refractory idiopathic OAB were included in the study (median age 63.5 years, IQR 11). Median ICIQ-FLUTS storage, voiding, and incontinence subscale scores were 8.5 (IQR 4), 5 (IQR 3.5), and 10.5 (IQR 8), respectively, and the median bladder volume during urinary urgency was 112mL (IQR 85). Women with more severe baseline storage symptoms on the ICIQ-FLUTS had greater increases in brain activity during urgency in the right ACC (Rs=0.70; p=0.02) and left ACC (Rs=0.65; p=0.02) as well as the right insula (Rs=0.6; p=0.04). Women with more severe baseline incontinence had less brain activity during urgency in the left ACC (Rs=-0.06; p=0.04).

Conclusion: Greater increases in brain activity in the ACC and right insula during urinary urgency appear to be associated with the severity of OAB symptoms. Patients with more severe OAB may experience an even greater increase in afferent signaling. Future research is needed to investigate if women with OAB and urgency incontinence have different brain activity patterns than women OAB who do not experience incontinence.

Funding: SUFU neuromodulation grant
Poster #M4

EARLY AND CONSISTENT IMPROVEMENTS IN QUALITY OF LIFE AND URINARY SYMPTOMS WITH ONABOTULINUMTOXINA IN OVERACTIVE BLADDER PATIENTS WITH URINARY INCONTINENCE IN A RANDOMIZED, PLACEBO-CONTROLLED TRIAL

Kurt McCammon¹, Angelo Gousse ², Jennifer Gruenenfelder ³, Douglass Hale ⁴, Amelia Orejudos ⁵, Tamer Aboushwareb ⁶ and Alfred Kohan ⁶

¹Eastern Virginia Medical School, Norfolk, VA, USA; ²Memorial Hospital Miramar, Miramar, FL, USA; ³Orange County Urology Associates, Laguna Hills, CA, USA; ⁴Urogynecology Associates, PC, Indianapolis, IN, USA; ⁵Allergan plc, Irvine, CA, USA; ⁶Advanced Urology Centers of New York, Bethpage, NY, USA

Presented By: Kurt Anthony McCammon, MD

Introduction: OnabotulinumtoxinA (onabotA) 100U significantly improved quality of life (QOL) and reduced urinary incontinence (UI) at week 12 in patients with overactive bladder (OAB) in two large, randomized, placebo (pbo)-controlled, phase 3 trials, but the earliest time to treatment response was not assessed. Here we present the final analysis of a randomized, multicenter, pbo-controlled, postmarketing study of QOL outcomes and treatment response as early as week 1 after onabotA treatment in OAB patients with UI.

Methods: Patients were randomized 1:1 to receive onabotA 100U or pbo. Postinjection assessments at weeks 1, 2, 6, and 12 (primary time point) were mean change from baseline (BL) in Incontinence-QOL (i-QOL), King’s Health Questionnaire (KHQ), and International Consultation on Incontinence Questionnaire-UI (ICIQ-UI), UI episodes/day (co-primary endpoint), proportions of patients who achieved UI reductions of 100% (co-primary endpoint) and ≥50%, and mean changes from BL in OAB symptoms. Adverse events (AEs) were recorded.

Results: Improvements in total i-QOL score with onabotA (n=129) were consistently higher than the minimal important difference (10 points) and significantly greater than pbo (n=125) at weeks 1-12 (P<.001 for all). Similar results were observed for the KHQ domains and ICIQ-UI. By week 12, 46.7% of onabotA-treated patients used no incontinence pads vs 31.9% with pbo (BL, 23.4 and 19.2%). Reductions from BL in UI episodes/day (OnabotA, 5.4 and pbo, 5.9 episodes/day) were significantly greater in the onabotA group vs pbo as early as week 1 (-2.9 vs -2.0; P=.005), which continued through week 12 (-3.5 vs -1.6; P<.001). Significantly higher proportions of onabotA-treated patients achieved 100% UI reduction vs pbo at weeks 1 (24.2 vs 4.8%) through 12 (32.0 vs 7.2%; P<.001 vs pbo for all). Similarly, a significantly higher proportion of onabotA-treated patients achieved ≥50% UI reduction at week 1 (59.4 vs 36.0%), sustained through week 12 (67.2 vs 37.6%; P<.001 for all). At week 1, decreases in other OAB symptoms were seen for onabotA vs pbo continuing through week 12. There were no unexpected safety signals. Urinary tract infection was the most common AE over 12 weeks (21.1 vs 6.4%).

Conclusion: Improvements in QOL with onabotA vs pbo were seen as early as week 1 postinjection with significant reductions in UI episodes that continued through week 12. OnabotA was well tolerated.

Funding: Allergan plc
Poster #M5
RELATIONSHIP BETWEEN FLUID INTAKE VOLUME AND URINARY SYMPTOMS IN PATIENTS WITH MULTIPLE SCLEROSIS
Daniel Grajower BA, Justina Tam, MD, Wai Lee, MD, Patricia Melville NP, Jason Kim, MD and Steven Weissbart, MD
Stony Brook University School of Medicine, Stony Brook, NY
Presented By: Justina Tam, MD

Introduction: Lower urinary tract symptoms (LUTS) considerably vary in individuals with multiple sclerosis (MS). While central nervous system plaque volume and location may primarily determine the type and severity of LUTS, behavioral factors, such as fluid intake, may also potentially contribute to urinary symptoms in these patients. The aim of our study is to investigate if high fluid intake is associated with worse urinary symptoms in patients with MS.

Methods: We conducted a prospective cross-sectional study of individuals with MS being evaluated in the outpatient neurology office. Individuals who participated in the study were administered the following questionnaires: AUA symptom score (AUA-SS), Medical, Epidemiological, and Social Aspects of Aging (MESA), and questionnaire based voiding diary (QVD). Wilcoxon rank tests were used to investigate if individuals with severe LUTS (i.e. AUA-SS>20) consumed larger volumes of fluid intake. Spearman’s rank correlation was then used to investigate the relationship between fluid intake volume and specific urinary symptoms.

Results: There were 100 participants in the study, and mean age was 47 years (SD 11.4), 74% were female, and 33% had severe urinary symptoms as measured on the AUA-SS. Median fluid intake was 2130 ml (IQR 1538 ml). Individuals with severe LUTS did not have higher fluid intake (1893 ml IQR 1420 ml versus 2130 ml IQR 1538 ml; p=0.44) or total caffeine intake (355 ml IQR 828 ml versus 355 ml IQR 473 p=0.45) compared to individuals with mild/moderate urinary symptoms. While there were weak relationships between nocturia and caffeinated coffee intake (SR=-0.28; p=0.006) as well as nocturia and decaffeinated coffee intake (SR=0.27; p=0.008), there were no other statistically significant relationships between fluid intake and urinary symptoms (Table 1).

Conclusion: Our data do not suggest a relationship between fluid intake and urinary symptoms in individuals with MS. As our study is cross-sectional, a longitudinal study would be needed to investigate if fluid normalization reduces urinary symptoms in these patients.

Source of Funding: None

<table>
<thead>
<tr>
<th>Fluid Intake Type</th>
<th>Correlation Coefficient</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water</td>
<td>-0.03</td>
<td>0.78</td>
</tr>
<tr>
<td>Caffeinated Coffee</td>
<td>-0.08</td>
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</tr>
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<td>Decaffeinated Coffee</td>
<td>0.1</td>
<td>0.32</td>
</tr>
<tr>
<td>Caffeinated Tea</td>
<td>0.01</td>
<td>0.96</td>
</tr>
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<td>Decaffeinated Tea</td>
<td>-0.06</td>
<td>0.59</td>
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<td>Caffeinated Soda</td>
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<td>Decaffeinated Soda</td>
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<td>Milk</td>
<td>-0.14</td>
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<td>Fruit Juice</td>
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<td>0.92</td>
</tr>
<tr>
<td>Alcoholic Beverages</td>
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<td>0.16</td>
</tr>
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</table>
Poster #M6

MID-TERM RISK OF RENAL DETERIORATION AND ASSOCIATED RISK FACTORS IN PATIENTS WITH NEUROGENIC BLADDER DUE TO MULTIPLE SCLEROSIS: AN ANALYSIS WITH MEDIAN FOLLOW-UP OF 81 MONTHS

Arthi Satyanarayan, MD, Nabeel Shakir, MD, Jessica Eastman, BS and Gary Lemack, MD
Department of Urology, University of Texas Southwestern Medical Center, Dallas, Texas
Presented By: Arthi Satyanarayan, MD

Introduction AND OBJECTIVES

Chronic kidney disease (CKD) in patients with multiple sclerosis (MS) may occur via upper urinary tract damage due to neurogenic bladder (NGB), but its natural history and risk factors in this population are not well elucidated. This study sought to assess urodynamic study (UDS) predictors of renal deterioration in patients with MS at a tertiary referral center.

Methods: Adult patients with MS presenting for evaluation of NGB were queried from a prospectively maintained database. Patients with either baseline serum creatinine (SCr) or renal ultrasound (US) were included. We excluded patients with baseline abnormal renal function. Renal deterioration was defined as doubling of SCr, new onset hydronephrosis, or renal atrophy on follow-up US. Demographic and UDS parameters were evaluated in multivariable models of deterioration.

Results: From 1999-2016, 660 patients were evaluated, of whom 475 met inclusion criteria with a median follow-up of 81 months. SCr doubled in 8 patients, 4 had decline by US, and 1 by both (3%). 53 patients met a less strict criterion of decrease in estimated glomerular filtration rate (eGFR) by ≥30%. 355 patients had UDS at initial visit and 120 did not; these groups were comparable except for anticholinergic use and history of hypertension (Table 1). 46/355 patients with initial UDS, and 11/120 patients without UDS had renal deterioration by imaging or eGFR (p=0.3). Using the less rigid criterion, hypertension, urolithiasis and detrusor overactivity (DO) were associated with deterioration, with DO remaining associated on multivariable analysis. 11/355 patients had deterioration by either doubled Cr or imaging, with which only history of hypertension and urolithiasis were associated.

Conclusion: By strict criteria, the rate of renal deterioration in patients referred with NGB due to MS was low (3%) at intermediate-term follow-up, was similar whether or not patients underwent UDS, and was associated with medical comorbidities but not UDS parameters. Using more liberal criteria, DO was associated with deterioration, suggesting that study of the impact of more aggressive control of DO in this population may be warranted.

<table>
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<th>Yes baseline UDS</th>
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</thead>
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<td>Body-mass index, kg/m² (n=120)</td>
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<td>25 (22-30)</td>
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<td>Gender, no. (%)</td>
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</tr>
<tr>
<td>Female</td>
<td>94 (78%)</td>
<td>271 (76%)</td>
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</tr>
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<td>Male</td>
<td>26 (22%)</td>
<td>84 (24%)</td>
<td></td>
</tr>
<tr>
<td>Race, no. (%)</td>
<td></td>
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<tr>
<td>Black</td>
<td>5 (4%)</td>
<td>17 (5%)</td>
<td></td>
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<tr>
<td>Hispanic</td>
<td>4 (3%)</td>
<td>10 (3%)</td>
<td></td>
</tr>
<tr>
<td>Other or unknown</td>
<td>21 (18%)</td>
<td>48 (14%)</td>
<td>0.7</td>
</tr>
<tr>
<td>White</td>
<td>90 (75%)</td>
<td>280 (79%)</td>
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</tr>
<tr>
<td>Taking anticholinergics at baseline, no. (%)</td>
<td>24 (20%)</td>
<td>148 (42%)</td>
<td>&lt;0.0001</td>
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<td>Type of multiple sclerosis, no. (%)</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Primary progressive</td>
<td>8 (7%)</td>
<td>36 (10%)</td>
<td></td>
</tr>
<tr>
<td>Relapsing-remitting</td>
<td>59 (49%)</td>
<td>191 (54%)</td>
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</tr>
<tr>
<td>Secondary progressive</td>
<td>48 (40%)</td>
<td>123 (35%)</td>
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<td></td>
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<td>History of urolithiasis, no. (%)</td>
<td>12 (10%)</td>
<td>35 (10%)</td>
<td>0.9</td>
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<tr>
<td>Hypertension, no. (%)</td>
<td>21 (18%)</td>
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<td>Type 2 diabetes, no. (%)</td>
<td>6 (5%)</td>
<td>19 (5%)</td>
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Poster #M7
OUTCOMES OF ONABOTULINUMTOXINA USE IN ADULTS WITH CONGENITAL SPINAL DYSRAPHYSIM IN TERTIARY TRANSITIONAL UROLOGY CLINIC
Rose Khavari, MD, Aaron Kaviani, MD, Rashmi Pande, MS and Timothy Boone, MD, PhD
Houston, TX
Presented By: Rose Khavari, MD

Introduction: We retrospectively investigated the outcomes of intradetrusor OnabotA use in adults with congenital spinal dysraphism where the data is lacking.

Methods: Billing codes were used to identify 149 patients who underwent OnabotA injection between 2012–2016 by four neurourologists. Comparison between clinical and urodynamic (UDS) findings before and after OnabotA was performed in this cohort.

Results: 18 (8 males and 10 females) patients with history of congenital spinal dysraphism were identified. 14 patients had myelomeningocele, 2 sacral agenesis, 1 tethered cord, and 1 occult spina bifida. All patients reported refractory urinary incontinence (UI) from native urethra or continent cutaneous channel. All patients completed UDS prior to OnabotA injection. Mean age at 1st injection was 20.76 years. A total of 57 OnabotA injections were performed with a mean of 3.2 times per patient.

UI improved in 81.25% of patients and 63.66% of them became completely dry (p= 0.023). Mean creatinine before and after treatment was 0.63 and 0.77 mg/dL. Degree of hydronephrosis improved in 3 of 4 patients. The patient who did not have an improvement in hydronephrosis had a baseline compliance of 10.8 ml/cmH2O. Repeat UDS after injection was done in 11 patients (those who did not clinically improve or who had loss of bladder compliance at baseline). In the high risk patients, mean maximum cystometric capacity (MCC) before and after injection was 310.18 mL and 380.27mL (p=.045). Mean bladder compliance before and after treatment was 29.26 ml/cmH2O and 28.76 ml/cmH2O respectively (p=0.48). Neurogenic detrusor overactivity (NDO) was observed in 62.5% and 50% of patients before and after treatment (p=0.5).

Our study showed improvement in refractory UI following OnabotA use in adult patients and 63.66% of them became dry. Our short term follow-up data shows mean creatinine was stable and hydronephrosis improved in most patients who had hydronephrosis at baseline. Compliance did not improve with OnabotA injection in the high risk group.

Conclusion: Intradetrusor OnabotA may improve refractory UI in selected group of adults with congenital spinal dysraphism. However, despite improvement in MCC, bladder compliance does not seem to improve following therapy in patients who had loss of compliance at baseline. Intervention at a younger age, prior to bladder remodeling and fibrosis may be more beneficial in this specific patient population.
Poster #M8
RISK OF RENAL DETERIORATION IS LOW AMONG SPINAL CORD INJURED PATIENTS FOLLOWED AT A TERTIARY CENTER: RESULTS OF DEMOGRAPHIC AND URODYNAMICS RISK ANALYSIS AT MID-TERM FOLLOW-UP
Nabeel Shakir, MD, Jessica Eastman, BS, Arthi Satyanarayan, MD and Gary Lemack, MD
Department of Urology, University of Texas Southwestern Medical Center, Dallas, TX
Presented By: Nabeel A. Shakir, MD

Introduction: Mortality due to renal insufficiency in patients with spinal cord injury (SCI) has decreased over the past several decades. However, the risk of upper urinary tract damage due to neurogenic bladder dysfunction in this particular population remains poorly defined. The purpose of this study was to assess for predictors of renal deterioration in a tertiary referral population of patients with SCI.

Methods: Using a prospectively maintained, IRB-approved database, we reviewed all adult SCI patients from August 2001-May 2015 referred for evaluation following recovery from spinal shock. Patients who had baseline renal ultrasound and/or serum creatinine (SCr), followed by urodynamic study (UDS) were included. We excluded patients with baseline abnormal renal function or without subsequent followup visits. Renal deterioration was defined as doubling of SCr or increase of ≥30% in the estimated glomerular filtration rate (eGFR), or any degree of new hydronephrosis or renal atrophy on surveillance imaging. Demographic and UDS parameters were assessed in univariate and multivariable logistic regression models to determine association with renal deterioration with statistical significance defined as p<0.05.

Results: Of 153 patients total, 98 met study criteria with median overall follow-up of 43 months. Of the 98, 87 had follow-up SCr and 64 had surveillance imaging. 13/98 (13%) patients experienced renal deterioration: 9 by eGFR, 3 by imaging and 1 by both. Demographic factors and UDS parameters were not associated with renal deterioration (Table 1). Altered compliance was seen in 15 patients, who were managed by indwelling catheter (3), CIC (11), or were voiding spontaneously (1). Patients with renal loss were not more likely to have altered compliance compared to those without (1/13 vs 14/87, p=0.7).

Conclusion: In SCI patients followed closely at a tertiary neurourology clinic, the rate of renal deterioration is modest, without associated demographic or urodynamic predictors. Though untreated intravesical pressure elevation may predict renal deterioration in SCI, our series suggests patients can continue to have normal renal function even with initial elevation, given appropriate bladder management.

<table>
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<th>Parameter</th>
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</tr>
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<tr>
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<tr>
<td>Body-mass index, kg/m²</td>
<td>26 (22-31)</td>
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<tr>
<td></td>
<td>27 (22-30)</td>
</tr>
<tr>
<td>Gender, no. (%)</td>
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</tr>
<tr>
<td></td>
<td>27 (32%)</td>
</tr>
<tr>
<td></td>
<td>Male</td>
</tr>
<tr>
<td></td>
<td>58 (65%)</td>
</tr>
<tr>
<td>Race, no. (%)</td>
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</tr>
<tr>
<td></td>
<td>8 (6%)</td>
</tr>
<tr>
<td></td>
<td>Hispanic</td>
</tr>
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<td></td>
<td>8 (8%)</td>
</tr>
<tr>
<td></td>
<td>Other</td>
</tr>
<tr>
<td></td>
<td>4 (4%)</td>
</tr>
<tr>
<td>White</td>
<td>68 (80%)</td>
</tr>
<tr>
<td></td>
<td>p=0.04</td>
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<tr>
<td>Time since injury, years</td>
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<td>History of UTI, no. (%)</td>
</tr>
<tr>
<td></td>
<td>Hypertension, no. (%)</td>
</tr>
<tr>
<td></td>
<td>Type 2 diabetes, no. (%)</td>
</tr>
<tr>
<td></td>
<td>Spinal cord level of injury, no. (%)</td>
</tr>
<tr>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td></td>
<td>Declared bladder compliance</td>
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<td></td>
<td>DEUS, no. (%)</td>
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<td>Detrusor overactivity, no. (%)</td>
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<td>Amplitude of DO, cm H2O</td>
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<td>Edo-fill bladder pressure, cm H2O</td>
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<td></td>
<td>Maximum cystometric capacity, mL</td>
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<td></td>
<td>Detrusor leak point pressure, cm H2O</td>
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<td></td>
<td>Voiding gape, no. (%)</td>
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<td></td>
<td>Maximum flow, ml/sec</td>
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<td></td>
<td>Detrusor pressure at maximal flow, cm H2O</td>
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Poster #M9
SAFETY AND EFFICACY OF ONABOTULINUMTOXINA INJECTIONS IN OCTO AND NONAGENARIANS
Patricia M. Zahner, Laura L. Giusto, MD, Jessica C. Lloyd, MD, Juan M. Guzman-Negron, MD, Shree Agrawal, BS, Courtenay K. Moore, MD, Raymond R. Rackley, MD, Sandip P. Vasavada, MD and Howard B. Goldman, MD
Cleveland, Ohio
Presented By: Patricia Zahner, MD

Introduction: OnabotulinumtoxinA (BTX-A) injections are commonly used third-line therapies for treatment of overactive bladder (OAB). The most common side effects, urinary retention and urinary tract infections (UTIs), may deter some providers from performing this treatment in the elderly, even though rate of OAB increases with age with associated increased morbidity and decreased quality of life. We examine the rate of complications and efficacy in patients 80 years or greater versus patients between the ages of 50-70 years receiving intradetrusor BTX-A for the treatment of OAB.

Methods: A retrospective case series of patients who underwent BTX-A injection at a tertiary care center from January 2007 through September 2017 was conducted. Patients were stratified into an “elderly” cohort, greater than 80 years old (EC), and a comparator “younger” cohort (YC) 50-70 years. Demographics, clinical characteristics, post-BTX-A complications and patient-reported satisfaction following treatment were collected. Statistical analyses included chi-square and t-tests for patient characteristics and univariable and multivariable logistic regression models for outcomes.

Results: The EC consisted of 62 patients (48%) with a mean age of 84 years, ranging from 80-94 years, versus the YC of 68 patients (52%) with a mean age of 59 years, ranging from 50-70 years. Among EC patients, 76% had comorbid conditions (47% moderate to severe), and in the YC, 65% had comorbidities (31% moderate to severe) (p = 0.24). Complication rates between both groups were 23% for the EC and 16% for the YC (p = 0.36). Among the EC, 11% experienced urinary retention versus 4% in the YC (p = 0.14). UTI was seen in 6% of the EC and 7% of the YC (p = 0.84). The most common complication for the elderly cohort was retention (54%) and UTI (56%) for the younger cohort. With respect to efficacy, 47% of the EC reported satisfaction after their final treatment, versus 53% of the YC (p = 0.31). Regardless of age group, patients with severe comorbid conditions compared to those with none were associated with a higher likelihood of re-hospitalization (OR:16.1, p = 0.03).

Conclusion: The number of patients aged 80 years or more seeking care in urology offices for OAB continues to grow. Our data suggest that intradetrusor BTX-A injections are safe and effective in the elderly population, with no significant difference in UTIs or urinary retention versus younger patients.
Poster #M10
COMPARISON OF ANTI-INCONTINENCE DEVICES DURING CROSSFIT EXERCISE
Laura Gephart, MD MBA1, Rachel High, MD2, Anthony Lewis, MD2, Michelle Reyes, BS MBA2, Karen Doersch, BS3, Thomas Kuehl, PhD2 and Jill Danford, MD2
1University of Texas, Rio Grande Valley, Edinburg, TX; 2Baylor Scott & White Health, Temple, TX; 3Texas A&M Health Science Center College of Medicine
Presented By: Rachel High, DO

Introduction: Stress urinary incontinence (SUI) plagues female athletes participating in high intensity CrossFit workouts. There are currently no data to guide women or providers as to which non-surgical intervention is most effective and appealing to athletes. The objective of this study is to compare efficacy and patient satisfaction with three common anti-incontinence devices during CrossFit.

Methods: This prospective cohort study funded by Baylor Scott & White Health (BSWH) Foundation endowments was approved by the BSWH Institutional Review Board. 18 women with SUI during exercise were included. Women with known pelvic organ prolapse as well as those pregnant, <6 months postpartum or breastfeeding were excluded. Participants performed sets of Crossfit exercises three times with a different intervention during each set. No intervention was used during the fourth set. The order of interventions—tampon, disposable vaginal insert and anti-incontinence ring pessary with support—was randomized using a random number generator. Pad weights and patient satisfaction ratings on 1-10 scales were assessed after each intervention. Results were compared using ANOVA and Duncan’s post-hoc test.

Results: Participants were 41 ± 11 years old with BMI 29.0 ± 4.8 kg/m2. 78% of participants were premenopausal; 89% were parous. Jumping exercises were reported to cause the most leakage. Mean urinary loss as measured by pad weight was 7.0g, 4.9g, 3.4g, 1.4g during use of no intervention, pessary, tampon, and vaginal insert respectively (p=0.006). Compared to no intervention all interventions decreased participant bother (6 ± 1 vs 3 ± 1, P<0.001). Order of device use did not affect leakage. The highest reported confidence (7 ± 1) and satisfaction (6 ± 1) were with use of vaginal insert and pessary (p<0.001). Comfort was similar across devices. The vaginal insert was most likely to be used in the future (7 ± 1), compared to pessary (5 ± 1) and tampon (3 ± 1) (p=0.017).

Conclusion: Anti-incontinence devices significantly decrease urinary leakage and bother during exercise. Confidence and satisfaction are increased with vaginal inserts and pessaries. Women are most likely to use vaginal inserts in the future.

Table 1. Comparison of anti-incontinence devices

<table>
<thead>
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<th>Device</th>
<th>P-value#</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Nothing</td>
<td>Tampon</td>
</tr>
<tr>
<td>Change in pad weight (g)</td>
<td>7.0 ± 1</td>
<td>3.4 ± 1.2</td>
</tr>
<tr>
<td>Subjective leak*</td>
<td>6 ± 1A</td>
<td>3 ± 0.4C</td>
</tr>
<tr>
<td>Leak bother*</td>
<td>6 ± 1A</td>
<td>3 ± 1B</td>
</tr>
<tr>
<td>Confidence*</td>
<td>4 ± 1A</td>
<td>6 ± 1B</td>
</tr>
<tr>
<td>Comfort*</td>
<td>5 ± 1A</td>
<td>7 ± 1B</td>
</tr>
<tr>
<td>Satisfaction*</td>
<td>1A</td>
<td>5 ± 1A</td>
</tr>
<tr>
<td>Likely to use in the future*</td>
<td>5 ± 1A</td>
<td>3 ± 1B</td>
</tr>
</tbody>
</table>

*Responses given on 1-10 scale with 1 being the lowest, and 10 being the highest

ANOVA for within-subject comparisons with Duncan’s post-hoc test (measures with different letters differ by p<0.05)
Poster #M11
LONG-TERM EFFICACY AND SAFETY OF SINGLE-INCISION MINI-SLINGS EXCEPT TVT-SECUR VERSUS STANDARD MIDURETHRAL SLINGS IN SURGICAL MANAGEMENT OF FEMALE STRESS URINARY INCONTINENCE: AN UPDATED SYSTEMIC REVIEW AND META-ANALYSIS
Aram Kim, MD, Hyeong Gon Kim, MD1, Ji-Yeon Han, MD2 and Myung-Soo Choo, MD3
1Department of Urology, Konkuk University Hospital, Konkuk University School of Medicine, Seoul, Korea; 2Department of Urology, Pusan National University YangSan Hospital, Pusan National University School of Medicine, Seoul, Korea; 3Department of Urology, Asan Medical Center, Ulsan College of Medicine
Presented By: Aram Kim, MD, PhD

Introduction: An updated systemic review and meta-analysis of randomized controlled trial (RCTs) comparing single-incision mini-slings (SIMS) except TVT-Secur versus standard midurethral sling (SMUS) in the surgical management of female stress urinary incontinence (SUI). The objective is to assess and compare the long-term efficacy and safety of SIMS except TVT-Secur versus SMUS for SUI.

Methods: A literature review was performed for all randomized clinical trials (RCTs) comparing SIMS except TVT-Secur (Miniarc Contrasure-needless, Ophira, TFS and Ajust) with either SMUS (transobturator tension free vaginal tape: TOT and TVT). The review included Medline, Embase, Scopus, Web of Science database and the Cochrane Controlled Trial Register.

Results: A total of 29 RCTs involving 3500 patients were retrieved to compare SIMS except TVT-Secur with SMUS. The meta-analysis of long-term results show no significant difference in the patients-reported cure rate (risk ratio [RR]: 0.94; 95% confidence interval [CI], 0.88-1.00), however we found SMUS had significantly superior efficacy at a mean follow-up of 40 months (RR: 0.9; 95% CI 0.94-1.01, p=0.04). These results pertained on comparing SIMS versus TOT and TVT separately. SIMS had significantly shorter operation time (weighted means difference [WMD]: -2.98; 95% CI, -4.00 to -0.56), lower immediate postoperative pain score (WMD: -7.20; 95% CI, -5.40 to -0.99), lower intraoperative blood loss (WMD: -7.20; 95% CI, -5.40 to -0.99) and lower postoperative voiding dysfunction (WMD: -7.20; 95% CI, -5.40 to -0.99).

Conclusion: The meta-analysis indicated that there was clear evidence of significant difference in objective cure rate between SIMS except TVT-Secur and SMUS at long-term follow-up. However SIMS had superiority of immediate postoperative pain, intraoperative blood loss and postoperative voiding dysfunction.
**Poster #M12**

**OPIOID PRESCRIBING PRACTICES AND MEDICATION USE AFTER UROGYNECOLOGICAL SURGERY**

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¹Einstein, Bronx, NY; ²Montefiore, Bronx, NY

Presented By: Shirly Solouki, MD

**Introduction:** Opioid abuse is a growing epidemic in the United States, with opioid overdose becoming a leading cause of death. There is wide variation in prescription practices for post-operative opioids due to absence of guidelines. The purpose of this study is to examine postoperative opioid prescribing patterns after urogynecologic surgery and determine opioid usage patients.

**Methods:** This is a prospective observational study of female patients who underwent urogynecologic surgery from June to August 2017 by four physicians. Patients were called 30 days following their surgery and were questioned regarding pain medication usage. Questions included preoperative opioid use, number used, and refill need. Information regarding patient demographics and surgery type performed was obtained from patients’ charts. T-test was used for comparison of continuous variables and chi-squared test used for comparison of categorical variables.

**Results:** Sixty patients were contacted, 43 patients responded. Median age was 60 (IQR 53-71), median BMI was 28 (IQR 25-31) and race breakdown was 58% Hispanic, 20.9% Black, 7% Caucasian. There was no statistically significant difference in age, BMI and race between responders and non responders. 70% of responders had vaginal surgery, 25.6% robotic or laparoscopic surgery, and 4% underwent other procedures (e.g. sacral neuromodulation). Postoperatively, 18% (n=11) of patients were not prescribed any opioids. The median number of opioid tablets prescribed was 12. 16.2% used no opioids, 39.5% of patients used 1-49% of their prescribed opioids, 9.3% used 50-99% of their opioids, and 34.9% of patients used all of their prescribed opioids. There was no difference in opioid prescription or usage patterns between those who underwent vaginal vs. robotic/laparoscopic surgery. See Table. 92% (n=25) of patients kept their remaining tablets.

**Conclusion:** Opioids are overprescribed post-operatively with 55% of patients using less than half of the opioids prescribed to them. The data from this ongoing study will be used to create postoperative opioid prescribing guidelines to minimize overprescribing opioids while still adequately controlling postoperative pain.

<table>
<thead>
<tr>
<th>Table 1. Opioid Use by Type of Surgery</th>
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<tr>
<td>Total</td>
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<tr>
<td>Taking pain medication pre-op (%)</td>
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<tr>
<td>Post-operative Opioid (%)</td>
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<tr>
<td>Acetaminophen/Hydrocodone</td>
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<tr>
<td>Oxycodeone</td>
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<tr>
<td>Acetaminophen/Codeine</td>
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<tr>
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<td>% Pills Used (%) (n=43)</td>
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<tr>
<td>1-49% of pills</td>
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<td>Remaining Pills (%) (n=43)</td>
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Chi-squared test used for comparison of vaginal surgery vs. Robotic/Lap +/- vaginal surgery.
Poster #M13
TRENDS IN THIRD LINE THERAPY UTILIZATION FOR OVERACTIVE BLADDER AMONGST GENERAL UROLOGISTS, ADVANCED PRACTICE PROVIDERS, AND FPMRS SUBSPECIALISTS
Jessica Lloyd, MD, Juan Guzman, MD, Laura Giusto, MD, Patricia Zahner, MD, Courtenay Moore, MD, Howard Goldman, MD, Raymond Rackley, MD and Sandip Vasavada, MD
Cleveland, OH
Presented By: Laura Giusto, MD

Introduction: Treatment of OAB proceeds in an algorithmic manner, from first-line behavior modification and pelvic floor muscle training, to second-line interventions including medications, and finally to third-line therapies including posterior tibial nerve stimulation, intradetrusor botulinum toxin injection, and sacral neuromodulation. However, without adequate counseling, this extended time course can cause patients to become discouraged and ultimately lost to follow up. Moreover, it is unclear how often third line therapies are utilized and whether usage patterns vary between general urologists and those with specialty expertise in Female Pelvic Medicine and Reconstructive Surgery who routinely perform third-line interventions.

Methods: A retrospective review of all patients who were treated for a new diagnosis of overactive bladder based on associated CPT codes from 1/2016 to 3/2017 was performed. The number of follow up appointments attended was tracked, as was the rate of referral to a third-line OAB therapy, as evidenced by billing codes. Demographics and clinical characteristics were collected for both patients who underwent third line therapies and those who did not. Descriptive statistics were calculated and presented as mean (standard deviation) or median [interquartile range] as appropriate.

Results: Ultimately, 11,516 patients met inclusion criteria, with a median age of 62 years. Men comprised 54% of the initial cohort. Of all providers, retention to a second appointment was 40% (39% for general urologists, 29% allied practice providers (APPs), and 48% for FPMRS-trained urologists), retention to a third appointment was 18% (17% general, 9% APP, 26% FPMRS), and retention to a fourth appointment was 9% (8% general, 3% APPs, 16% FPMRS). Overall utilization of third line therapies was 3.9% (0.7% general, 0% APP, 15.4% FPMRS). Patients referred for third line therapies were more likely to be female than those maintained on medications or lost to follow up (p<0.05).

Conclusion: At our institution, utilization of third-line OAB therapies was only 4% for all urologists. General urologists were less likely to utilize third-line interventions than those with additional FPMRS training. Loss to follow up was common in this patient population as well, and suggests the need for wider deployment of carepaths and up-front patient education early in the patient-clinician relationship.
Poster #M14
RISK FACTORS ASSOCIATED WITH FECAL INCONTINENCE IN PATIENTS WITH OVERACTIVE BLADDER
Caitlin Lim, DO1, Joshua Cohn, MD1, Casey Kowalik, MD2, Melissa Kaufman, MD2, Roger Dmochowski, MD2 and Stuart Reynolds, MD2
1Albert Einstein Medical Center, Philadelphia, PA; 2Vanderbilt University, Nashville, TN
Presented By: Caitlin Lim, DO, MS

Introduction: Overactive bladder (OAB) and bowel conditions often occur together, and both can have profound effects on a woman’s quality of life. Treatment of OAB can impact bowel function as well, either negatively (e.g. constipation and antimuscarinics), or positively (e.g. reduced fecal incontinence, FI, with sacral neuromodulation). We sought to identify factors associated with FI in a community-based sample of women with OAB.

Methods: Adult women with symptoms of OAB were identified via clinical practice and email-based advertisements. In all subjects, OAB was confirmed by a score of 4 on the OABv3 screening questionnaire. Standardized questionnaires assessed clinical characteristics, OAB severity (OAB-q8), quality of life (OAB-q SF HRQoL), and FI (Fecal Incontinence Severity Index, FISI). These data were compared between subjects with and without FI, defined as any leakage of mucus, liquid or solid stool at least monthly, and the association between OAB and FI severity assessed.

Results: 101 (53%) participants reported having FI and 91 (47%) did not. Mean FISI scores were 27.9 ± 8.6 in those reporting FI and 5.5 ± 5.2 in those reporting no FI (p<0.001). Women reporting FI had more severe OAB (mean OABq8 SS: 47.5 ± 25.6 vs. 39.3 ± 21.2, p=0.017) and worse OAB-HRQL (59.6 ± 29.5 vs 69.3 ± 23.0, p=0.012). OAB severity (OABq8) (0.29, 95% CI 0.04-0.55) and OAB-related quality of life (OABq-SF HRQL) (-0.33, 95% CI -0.61, -0.05) were significantly correlated with FISI scores. In addition to suffering from more severe OAB, women reporting any FI were older (mean age 46.8 ± 15.2 vs. 41.6 ± 14.0 years, p=0.015) and more likely to report suffering from neuropathy (p=0.013), spine or degenerative disc disease (p=0.003), irritable bowel syndrome (p=0.013), fibromyalgia (p=0.035), and chronic fatigue syndrome (p=0.044).

Conclusion: Over half of women with OAB reported at least monthly FI, which was associated with increased age and the presence of neuropathy, degenerative spinal disease, irritable bowel syndrome, and chronic pain syndromes. Furthermore, FI was associated with increased OAB symptom severity and decreased OAB condition-specific quality of life. In many patients, FI and OAB may be unique symptoms resulting from common pathophysiology, either due to pelvic organ or more global dysfunction.

Funding:
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Poster #M15

MIDURETHRAL SLING REMOVAL: JUST THE FIRST STEP?

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Nashville, TN
Presented By: Casey Kowalik, MD

Introduction: A subset of women undergoing synthetic midurethral sling (MUS) for stress urinary incontinence (SUI) require subsequent revision due to pain, urinary storage symptoms, or obstructive voiding symptoms. This analysis examines post-MUS excision pain and urinary incontinence outcomes, as well as subsequent surgical treatment for urinary incontinence.

Methods: This was an IRB approved retrospective review of MUS explants between January 2011 and March 2016. Inclusion criteria included complete sub-urethral synthetic sling removal, and at least 90 days of follow-up. Exclusion criteria included vaginal mesh exposure, mesh erosion into urinary tract, and concomitant surgery at mesh excision. Demographics, symptoms at presentation and last follow-up, and secondary procedures for incontinence were collected. SUI, urgency/urge urinary incontinence (UUI), and pelvic pain at last follow-up were stratified as resolved, persistent, or de novo based on symptoms at presentation. Pelvic pain was defined as suprapubic, vaginal, groin pain, or dyspareunia.

Results: Eighty women were identified for analysis. Presenting symptoms included SUI in 28 (35%) and urgency/UUI in 57 (71%). Table 1 shows outcomes. At an average follow-up of 24.4 months (range: 3-68), 36 (45%) women had undergone 45 secondary procedures for incontinence. Twenty women (25%) underwent secondary surgery for SUI including injection of bulking agents (n=7), pubovaginal sling (PVS) with autologous fascia (n=13), or PVS with biologic graft (n=1). Secondary procedures for urgency/UUI in 21 women included sacral neuromodulation (n=14), at least a single onabotulinum injection (n=9), and augmentation cystoplasty (n=1). One woman underwent cystectomy and ileal conduit for end-stage bladder dysfunction.

Conclusion: Women undergoing MUS explant can experience resolution of urinary incontinence, but more commonly have persistent or de novo symptoms. Nearly half of women underwent secondary procedures for either SUI or UUI. The majority of women experienced resolution of pelvic pain, but 11% developed de novo pain. Patient counselling regarding urinary incontinence and pain outcomes is imperative in managing patient expectations prior to sling explant.

| Table 1. Incontinence and pain outcomes after midurethral sling removal |
|---------------------|-----|-----|-----|
| At presentation, no. (%) | SUI | UUI | Pain |
| Resolved, no. | 13 (46.4) | 17 (29.8) | 36 (57.1) |
| Persistent, no. | 15 (53.6) | 40 (70.2) | 27 (42.9) |
| De novo, no. (%) | 21 (40.4) | 14 (60.9) | 2 (11.8) |
| Secondary procedures, no. | 21 | 24 |
Poster #M16
COST IMPACT OF ELECTIVE CESAREAN DELIVERY ON FUTURE PELVIC FLOOR DISORDERS
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1Cedars Sinai Medical Center; 2Los Angeles, CA
Presented By: Devin Patel, MD

Introduction: We sought to analyze the cost impact of Cesarean versus spontaneous vaginal delivery on two common forms of pelvic floor disorders (PFDs): stress urinary incontinence (SUI) and pelvic organ prolapse (POP).

Methods: We compared average cost of delivery method to the lifetime risk and cost of PFD in women <65 years of age. In this analysis, direct costs were defined based on reimbursements. Initial cost of maternal care included those incurred at delivery and three months post-partum. Future costs of PFD included those incurred after delivery up to 65 years of age. Costs of maternal care were obtained from MarketScan® databases of reimbursement. A previously reported incremental cost of illness model was used to estimate direct (inpatient and outpatient reimbursement and prescription drugs) and indirect (disability claims and imputed wages for work absence) costs for SUI. Personal costs for SUI (supplies, laundry, dry cleaning) were assumed for one year and estimated based on previous data. The cost of POP was determined by multiplying the number of POP operations by the direct costs per surgery. Previously reported data on incidence of POP and SUI in women following Cesarean and vaginal delivery was used to calculate attributable risk.

Results: The average estimated cost for vaginal delivery was $7,089 and for Cesarean delivery was $9,905. For SUI, the average direct cost was estimated as $5,642, the average indirect cost as $4,208 and the average personal cost as $750. The average direct cost of POP surgery was $4,658. Following Cesarean delivery, the absolute risk for SUI and POP was estimated as 7% and 5%, respectively. Following vaginal delivery, the absolute risk for SUI and POP was estimated as 13% and 14%, respectively. The average woman undergoing Cesarean delivery would undergo an initial excess cost of $2,816. The potential savings for SUI and POP in women <65 years of age undergoing Cesarean delivery would be $636 and $419, respectively, for a total of $1,055.

Conclusion: Although associated with reduced incidence of PFDs, the increased initial cost of Cesarean delivery does not offset future cost savings. However, further research into the incremental cost of POP is warranted.
Poster #M17
EVALUATION OF SMARTPHONE APPLICATIONS FOR PELVIC FLOOR EXERCISES USING THE PELVIC FLOOR-4 (PF-4) SCORING SYSTEM
Erica Lai, MD, MPH and Pierre Lespinasse, MD
Rutgers-NJMS, Newark, NJ
Presented By: Erica Lai

Introduction: The purpose of this study was to determine the quality and clinical accuracy of smartphone applications (apps) for pelvic floor muscle training by comparing their exercise regimens to current recommendations.

Methods: A content analysis of pelvic floor muscle training apps was performed using the Pelvic Floor-4 (PF-4) Scoring System to determine their overall quality. The PF-4 scoring system was developed to assess four domains—clinical accuracy, functionality, accountability, and user-friendliness—with a maximum score of 21 points. Applications were identified from Apple iTunes and Google Play Store by searching “pelvic floor”, “pelvic floor exercise”, “pelvic floor muscle training”, “pelvic floor physiotherapy”, “pelvic floor physical therapy”, and “kegel”. All paid, duplicate, unrelated, non-English, reference, and subscription-based apps were excluded. Apps which required external devices were also excluded.

Results: Thirty-three apps were evaluated. The average quality score was 7.72 ± 3.38 out of a maximum of 21 points. The scores ranged from 2 to 17 points, with only one app scoring 17 and the next highest at 13. The average clinical accuracy score was 3.33 ± 1.71 out of a maximum of 6 points with 46% of apps scoring more than 3.

Conclusions/Implications: There is significant heterogeneity in the quality of pelvic floor muscle training mobile apps. As health-related apps become more numerous and mainstream with users, clinicians should have a systematic approach to evaluating potential apps. The PF-4 scoring system is such a method that can be implemented to evaluate the quality of pelvic floor muscle training apps.
Poster #M18
OPIOID PRESCRIPTION AND USAGE IN SACRAL NEUROMODULATION, SLING, AND PROLAPSE SURGERY: ARE WE CONTRIBUTING TO THE OPIOID EPIDEMIC?
Dena Moskowitz, MD, Katherine Amin, MD, Alvaro Lucioni, MD, Kathleen Kobashi, MD and Una Lee, MD
Virginia Mason Medical Center, Seattle, WA
Presented By: Dena Moskowitz, MD

Introduction: The opioid problem in the United States has reached epidemic proportions and prescription of opioids after surgery can lead to long-term, chronic use. There is limited data on the appropriate amount of opioids to prescribe after urologic surgery. We explore prescribing patterns for opioids as well as opioid use after three common outpatient surgeries: sacral neuromodulation (SNM), prolapse repair, and sling.

Methods: A retrospective chart review at our institution was performed on all patients who underwent SNM, prolapse repair, and sling from June 2016 to May 2017. Patients were excluded if they were on chronic opioid therapy, or had a surgical complication causing increased pain. Patient characteristics as well as the amount of opioid prescribed to each patient after surgery were examined. A telephone survey was performed to identify the number of opioid pills used after surgery, patient satisfaction with pain control, and opioid disposal method. A multiple regression model was used to identify factors associated with variability in opioid usage.

Results: 123 patients met inclusion criteria: 64 SNM, 8 autologous sling, 15 midurethral sling, and 44 prolapse (vaginal and robotic). Patients were prescribed 20%, 135%, 150%, and 165% more morphine milligram equivalents (MME) than were used for autologous slings, prolapse, SNM, and midurethral slings respectively. The majority of patients were satisfied with their pain control. Of 75 patients with surplus pills, 22 (29%) disposed of them, and 5 (7%) did so properly. Disabled or unemployed patients used less MMEs (p=0.019), while those with diabetes (p=0.01), prior pelvic floor surgery (p=0.047), history of substance abuse (p=0.036), and rectocele repair (p=0.003) used more.

Conclusion: Our data demonstrate over-prescription of opioids after SNM, prolapse repair, and sling and identifies potential factors associated with increased use of opioids. Current prescribing patterns are not evidence-based and can contribute to the epidemic of opioid abuse, diversion, and overdose. With this knowledge we can guide physicians on appropriate opioid prescribing and decrease the contribution that urologists make to this growing public health problem.
Poster #M19
OUTCOMES OF PERIURETHRAL BULKING AGENT INJECTION FOR TREATMENT OF POSTPROSTATECTOMY INCONTINENCE AFTER SLING PLACEMENT: A MULTINATIONAL EXPERIENCE.
Amanda Chung MBBS, MS, FRACS, William Lynch MBBS, FRACS, Melanie Aube, MD and Kurt McCammon, MD
1The University of Sydney, Sydney Medical School, Department of Urology, Concord Repatriation General Hospital, Concord NSW, Australia; 2Macquarie University Hospital, Sydney NSW, Australia; 3Eastern Virginia Medical School, Norfolk VA, United States of America
Presented By: Amanda S.J. Chung, BSc, MBBS, MS, FRACS

Introduction: Although outcomes of minimally-invasive transobturator sling placement for the treatment of postprostatectomy incontinence (PPI) are satisfactory, a proportion of patients experience further incontinence. The objective of this study is to evaluate the safety and efficacy of treating refractory and recurrent PPI with injection of a urethral bulking agent in men with previous sling placement.

Methods: A review of all men with history of transobturator sling who were treated with urethral bulking agents for refractory or recurrent PPI at two multinational sites (Australia and the United States of America), from 1st May 2011 to 1st October 2016, was performed. Peri operative continence and complication outcomes were assessed. Success was defined as at least 50% reduction in pads used per day. Statistical analyses including Student’s t test was performed.

Results: Eighty-three men with transobturator sling and refractory or recurrent PPI were treated with injection of a urethral bulking agent during the study period. 57% (47/83) of men received Macroplastique (Cogentix, Minnetonka MN, United States of America); 43% (36/83) received Opsys (Promedon, Cordoba, Argentina). Mean patient age was 67 years (range 52-83). Mean duration of follow up was 26 months. Continence success occurred in 70% of men, and continence improvement in 90%. There was significant reduction in mean number of pads per day from 2.4 pre-procedure to 1.2 post-procedure (p<0.05). 80% of men required no further treatment for PPI, 12% had subsequent bulking agent, 7% proceeded to repeat transobturator sling and 1% proceeded to AUS. 8 men experienced a complication (excluding incontinence): 7 complications were low Clavien grade 1-2 and 1 man had a postoperative acute myocardial infarction.

Conclusion: Injection of a urethral bulking agent appears to be a safe and efficacious treatment for refractory and recurrent PPI in patients who have had transobturator sling placement. Continence success rate was 70%; continence improvement rate was 90%. 80% of men required no further treatment for PPI. 8 men experienced a complication (excluding incontinence).
Poster #M20
FACTORS PREDICTIVE OF PROLONGED LENGTH OF STAY AND UNPLANNED READMISSION FOLLOWING ARTIFICIAL URINARY SPHINCTER SURGERY
Siobhan Hartigan, MD, Leilei Xia, William Jaffe, MD, Thomas Guzzo, MD and Robert C. Kovell, MD
Division of Urology, Department of Surgery, University of Pennsylvania Health System, Philadelphia, PA
Presented By: Siobhan M. Hartigan, MD

Introduction: Artificial urinary sphincter (AUS) placement continues to be an important part of the urologist's armamentarium for treating urinary incontinence (UI). The majority of these procedures are performed as outpatient surgery or overnight hospital admission. Little data exists regarding prolonged length of stay (PLOS) and unplanned readmission (UR) for patients undergoing these procedures. The objective of our study was to identify preoperative and intraoperative factors that were independently associated with PLOS and UR in patients undergoing primary AUS and revision surgery for UI.

Methods: The American College of Surgeons National Surgical Quality Improvement Program (ACS-NSQIP) database (2012-2015) was used to perform a retrospective cohort study of patients with UI who underwent primary or revision AUS placement. Multivariable logistic regression was performed to explore the factors associated with PLOS (≥2 days) and UR within 30 days of surgery.

Results: A total of 1085 patients were identified and included in analysis of which 836 (77.1%) underwent primary AUS and 249 (23%) underwent AUS revision. Most patients (894, 82.4%) had no concurrent procedures however cystoscopy was performed in 127 patients (11.7%), IPP in 36 (3.3%), and another procedure in 28 (2.6%) of patients. The median age of patients was 71 years (interquartile range [IQR] 65-76) and median operative time was 86 minutes (IQR 68-112). Patient LOS was 0 days in 216 (19.9%), 1 day in 797 (73.5%), and ≥2 days in 72 (6.6%). Preoperative predictors of PLOS were current smoker within one year, known bleeding disorder, and steroid use. Longer operative times and concurrent primary or revision AUS placement with an inflatable penile prosthesis (IPP) was also found to be associated with PLOS but not with UR. Of all variables, bleeding disorder was the only predictor of UR.

Conclusion: Smoking status, steroid use, longer operative time, and concurrent IPP placement are associated with PLOS however not associated with readmission following either primary or revision AUS surgery. Patients with bleeding disorders were associated with both PLOS and UR. Preoperative identification of these patient factors may be useful for optimizing patient care.
Poster #M21
URINARY RETENTION AFTER ADVANCE® SLING: A MULTI-INSTITUTIONAL RETROSPECTIVE STUDY
Jennifer Rolef, MD1, Goran Rac, MD1, Lauren Rittenberg, MD1, Lindsey Cox, MD1, Arthur Mourtzinos, MD2, Leaney Westney, MD3, Mike Metro, MD4 and Eric Rovner, MD1
1Medical University of South Carolina, Charleston, SC; 2Lahey Clinic, Burlington, MA; 3MD Anderson, Houston, TX; 4Temple University, Philadelphia, PA
Presented By: Jennifer Rolef, MD

Introduction: To better characterize the management of and factors associated with urinary retention after male Advance® transobturator sling placement for urinary incontinence.

Methods: The medical records of patients who underwent AdVance® sling insertion across four institutions over a ten-year period from 2007-2017 were reviewed. 255 patients who had at least one post-operative visit were included in the study. Post-operative urinary retention was defined as either a complete inability to urinate or an elevated post-void residual (PVR) of greater than 350cc.

Results: Of the 255 patients included in the study 27 patients (10.6%) had urinary retention at the time of their first post-operative visit, and an additional 3 patients had new urinary retention at the time of their second post-operative visit for an overall initial postoperative urinary retention rate of 11.8% (30/255). These patients either underwent placement of Foley catheter (18/27, 66.7%) or were initiated on clean intermittent catheterization (CIC) (9/27, 33.3%). The majority (16/27, 59.2%) of patients experienced resolution of retention by their second post-operative visit. No patients required surgical intervention such as placement of suprapubic tube, sling manipulation or incision. At last follow-up, only 16.7% (5/30) of the patients who experienced post-operative urinary retention had persistent urinary retention at a mean follow-up of 430 days (Range 5 to 2,235) for an overall long term retention rate of 1.96% (5/255). 2 of these patients had known pre-existing neurogenic bladder. Patients who experienced post-operative retention were significantly more likely to have a pre-operative PVR ≥ 165 mL (5/19, 26.3%) compared to those who did not have urinary retention (10/169, 5.9%) (p= 0.0018). Additionally, patients that experienced urinary retention were more likely to experience other complications (p=0.0014). Post-operative UTI had a significant association with urinary retention after AdVance sling (p=0.0022).

Conclusion: The results of our study show that urinary retention after AdVance sling placement is an uncommon event, is generally self-limited and can safely be managed with either foley catheter or CIC. In addition, patients with urinary retention are more likely to have an elevated pre-operative PVR and to experience other complications post-operatively. This is the largest study to date looking at urinary retention following male transobturator sling placement.
Poster #M22
DOES THE TIMING OF RADIOTHERAPY FOR TREATMENT OF PROSTATE CANCER AFFECT OUTCOMES OF TRANSOBTURATOR SLING PLACEMENT FOR MALE STRESS URINARY INCONTINENCE?
Clinton Yeaman¹, Amanda Chung, BSc/MBBS² and Kurt McCammon, MD¹
¹Eastern Virginia Medical School, Norfolk, VA; ²The University of Sydney, Sydney Medical School, Concord NSW, Australia
Presented By: Clinton Yeaman

Introduction: Although transobturator sling placement in men with history of pelvic radiotherapy is less effective than in men without such history, it is not known whether timing of radiation in relation to sling placement affects outcomes. This study aims to evaluate whether timing of radiotherapy affects outcomes of transobturator sling placement for male stress urinary incontinence (SUI).

Method: A review of all men who received a transobturator sling for SUI at a single institution from January 1, 2006 through August 1, 2016 was performed. History of pelvic radiotherapy and its timing in relation to sling placement was recorded. Perioperative, continence and complication outcomes were assessed. Outcomes of men who received a sling before pelvic radiotherapy were compared to outcomes of men who received sling placement post pelvic radiotherapy. Continence success was defined as at least 50% reduction in pads used per day; cure defined as 0.5 pads or less per day. Statistical analyses included Chi square test.

Results: 257 men (mean age 68 years) underwent insertion of a transobturator sling for treatment of SUI during the study period. Mean follow-up was 25 months. Overall continence success rate was 75%; 81% in non-radiated men and 59% in radiated men (P<0.05). There was no significant difference in continence success between men who received sling pre-radiotherapy versus sling post-radiotherapy (P=0.72). Furthermore, duration of time between radiation and sling placement did not appear to correlate with continence outcome. The reoperation rate among the group of men who underwent sling placement pre-radiotherapy was 31% compared with 23% among men who underwent sling placement post-radiotherapy, but this difference did not reach statistical significance (P=0.17).

Conclusion: Men with transobturator sling and history of pelvic radiation have worse continence outcomes than men with no history of pelvic radiation, despite whether the sling was placed after radiotherapy or radiotherapy applied after sling placement. Length of time between radiation and sling treatment does not appear to correlate with continence outcome. Although the reoperation rate was higher in men who underwent sling placement pre-radiotherapy compared with post-radiotherapy, this difference was not statistically significant.
**Poster #M23**  
**CAN THE PENILE CUFF TEST PREDICT THE OUTCOME OF HOLMIUM LASER ENUCLEATION OF THE PROSTATE FOR BENIGN PROSTATIC OBSTRUCTION?**  
Kwang Jin Ko, Hyeong-gon Kim, MD, PhD and Kyu-Sung Lee, MD, PhD  
1Department of Urology, Samsung Medical Center, Sungkyunkwan University, School of Medicine, Seoul, Korea; 2KonKuk University Hospital, Seoul, Korea; 3Samsung Medical Center, Seoul, Korea  
Presented By: Kyu-Sung Lee, MD, PhD

**Introduction:** The penile cuff test (PCT) was introduced as a non-invasive alternative to pressure-flow study to diagnose bladder outlet obstruction (BOO). However, studies have not evaluated if the PCT can predict surgical outcomes of benign prostatic obstruction (BPO). The aim of study was to determine whether the PCT can predict surgical outcomes prior to Holmium laser enucleation of the prostate (HoLEP) for benign prostatic obstruction.

**Methods:** Men scheduled to undergo HoLEP were enrolled, and all patients underwent the PCT prior to and 3 months after surgery. Patients were categorized as obstructed, non-obstructed, or uncertain by nomogram. Surgical outcomes were assessed by change in international prostate symptom score (IPSS), quality of life (QoL) index, and maximum flow rate (Qmax) for functional efficacy pre-operatively and 3 months post-operatively. The proportion of patients with good outcome was compared among PCT nomogram-classified groups, and postoperative changes in position on the PCT nomogram were assessed. Secondary outcomes were positional change in the PCT nomogram, change in Pcuff.int from baseline to 3 months, and change in Qmax.cuff from baseline to 3 months.

**Results:** A total of 125 patients were analyzed. After HoLEP, overall efficacy and symptom efficacy were not different between obstructed and non-obstructed patients. However, functional efficacy was significantly higher in obstructed patients (75.7% [95% CI; 65.7-85.8]) than in non-obstructed patients (53.6% [95% CI; 33.7-75.4]). The percentage of good responders in the QoL category was significantly higher in the obstructed group than in the non-obstructed group (p=0.012). After HoLEP, 75.7% of patients with BOO and 63.6% of patients categorized as uncertain were moved to the non-obstructed category, while 77.3% of non-obstructed patients remained in the non-obstructed category.

**Conclusion:** A PCT nomogram can be used in patients with BOO to predict good functional outcome and QoL. The majority of patients were classified as non-obstructed after HoLEP.

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**Proportions of good-responders for all subjects and according to category of patients classified based on PCT results.**

<table>
<thead>
<tr>
<th></th>
<th>All subjects</th>
<th>Preop PCT classification</th>
<th></th>
<th></th>
<th></th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Obstructed</td>
<td>Non-obstructed</td>
<td>Uncertain</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Good responders</td>
<td>Good responders</td>
<td>Good responders</td>
<td>Good responders</td>
<td>Good responders</td>
<td>p</td>
</tr>
<tr>
<td></td>
<td>(%)</td>
<td>(95% CI)</td>
<td>(95% CI)</td>
<td>(95% CI)</td>
<td>(95% CI)</td>
<td></td>
</tr>
<tr>
<td>Overall</td>
<td>71.2</td>
<td>(70.9-82.0)</td>
<td>0.966</td>
<td>63.6 %</td>
<td>0.433</td>
<td>0.563</td>
</tr>
<tr>
<td>Symptoms</td>
<td>76.0</td>
<td>(65.7-85.8)</td>
<td>0.955</td>
<td>68.2</td>
<td>0.391</td>
<td>0.434</td>
</tr>
<tr>
<td>Function*</td>
<td>69.6</td>
<td>(65.7-85.8)</td>
<td>0.266</td>
<td>54.6</td>
<td>0.125</td>
<td>0.734</td>
</tr>
<tr>
<td>QoL*</td>
<td>52.8</td>
<td>(44.1-67.4)</td>
<td>0.625</td>
<td>40.1</td>
<td>0.264</td>
<td>0.841</td>
</tr>
</tbody>
</table>

*Obstructed vs. Non-obstructed: p<0.05
Poster #M24
PREDICTORS OF IDIOPATHIC DETRUSOR OVERACTIVITY ON URODYNAMICS: SYMPTOMS OF OVERACTIVE BLADDER AND DEGREE OF CORRELATION
Elisabeth M. Sebesta, MD, Gen Li, PhD, Carrie M. Aisen, MD, Marissa Theofanides, MD and Doreen E. Chung, MD
1Department of Urology, NewYork-Presbyterian/Columbia University Medical Center, New York, NY; 2Department of Biostatistics, Mailman School of Public Health, Columbia University, New York, NY
Presented By: Elisabeth Sebesta, MD

Introduction: Urinary urgency is a hallmark symptom of idiopathic overactive bladder (OAB) syndrome (urinary urgency, usually accompanied by frequency and nocturia, with or without urge urinary incontinence [UUI]). Similarly, urodynamic detrusor overactivity (DO) is the hallmark urodynamic (UDS) finding of OAB and often is part of inclusion criteria for subjects in OAB treatment studies. Although many patients present with complaints of urgency with or without other OAB symptoms, the corresponding incidence of DO on UDS is not completely known. The objective of our study is to examine the incidence of idiopathic DO on UDS in patients with symptoms of OAB syndrome, and secondarily, to look at predictors of DO.

Methods: We retrospectively reviewed all adult patients who underwent UDS from 2010-2017. Patients with a pre-procedure diagnosis of neurogenic bladder (NGB) were excluded. Presenting symptoms and indications for UDS, demographic information, and UDS findings were evaluated. Logistic regression was used to determine factors predicting presence of DO on UDS.

Results: A total of 966 patients were included for analysis. 337 (35%) patients were found to have DO on UDS, of whom 203 (60%) were female with a mean age of 60.9 +/- 15 years. 218 (65%) and 235 (70%) of the patients with DO on UDS presented with urgency and UUI respectively. Looking at the incidence of DO on UDS based on presenting symptoms, 39% of patients who presented with UUI, 37% with urgency, 34% with nocturia, and 31% with frequency were found to have DO on UDS. On regression analysis, older age (OR 1.02, p<0.01) and female gender (OR 0.25, p<0.01) were predictors of DO; as were history of recurrent UTIs (OR 1.58, p=0.03) and pelvic organ prolapse (OR 0.61, p<0.01). The only urinary complaint significantly associated with DO was UUI (OR 3.31, p<0.01). Urgency (OR 1.09, p=0.65), frequency (OR 0.93, p=0.66), and nocturia (OR 0.84, p=0.30) were not predictive of DO in this cohort.

Conclusion: Although the definition of OAB includes symptoms of urgency, frequency and nocturia, the majority of patients presenting with these symptoms were not found to have DO on UDS. The only urinary symptom significantly associated with idiopathic DO was UUI. This suggests the patient population suffering with OAB syndrome may be comprised of patients with varying bladder pathophysiology, and that patients who have both OAB symptoms and DO on UDS represent only a specific subset of patients with OAB syndrome.
**Poster #M25**

**IMPACT OF AUA PRACTICE GUIDELINES ON URODYNAMIC PRACTICE PATTERNS**

Elizabeth Rourke, DO, MPH¹, William Meeks ², Daniel Pichardo ² and Stephen Kraus, MD, FACS¹  
¹Department of Urology, University of Texas Health Science Center at San Antonio, Texas; ²Department of Data Management and Statistical Services, American Urological Association, Linthicum, Maryland

Presented By: Elizabeth Rourke, DO, MPH

**Introduction:** The 2012 release of American Urological Association (AUA)/Society of Urodynamics, Female Pelvic Medicine and Urogenital Reconstruction (SUFU) Urodynamics (UDS) guidelines was intended to optimize use of UDS, however the impact of the guidelines remains unclear. We compared use of UDS before and after release of the 2012 AUA/SUFU UDS guidelines in the following female groups: overactive bladder (OAB), stress urinary incontinence (SUI), those undergoing surgery for SUI and mixed urinary incontinence (MUI).

**Methods:** We performed a retrospective review on a 5% sampling of the Centers for Medicare and Medicaid Services (CMS) database from 2010-2014. Five specific female groups were defined with the following CPT and ICD-9 codes:
1) OAB with codes 596.51 (bladder hypertonicity/OAB), 788.41 (urinary frequency), 788.63 (urinary urgency) 788.31 (urge incontinence), and 788.43 (nocturia)
2) SUI with code 625.6 (female SUI)
3) MUI with code 788.33
4) SUI who underwent SUI surgery with codes 625.6 and CPT 57288 (sling for SUI)
5) MUI who underwent SUI surgery with codes 788.33 and CPT 57288

UDS was defined as having any of the following CPT codes: 51741 complex uroflowmetry, 51726 complex cystometrogram, 51727 complex cystometrogram with urethral pressure profile studies, 51728 complex cystometrogram with voiding pressure studies, and 51729 complex cystometrogram with voiding and urethral pressure studies. We compared the proportion of UDS in each group before and after the 2012 release of the guidelines using Chi-square testing.

**Results:** The proportion of patients receiving UDS was significantly lower in the OAB, SUI and MUI groups after guidelines release. No significant differences were noted in the surgery groups (both SUI and MUI) after the guidelines release (Figure 1&2). These changes remained consistent when limiting provider type to urologists only (p=0.041, p=0.021, p=0.003, respectively)

**Conclusion:** After the release of the AUA/SUFU UDS guidelines, the use of UDS decreased for women with OAB, SUI and MUI. No difference was seen in those women undergoing sling surgery for SUI and MUI.
Poster #M26
PRODUCT PERFORMANCE EVENTS IN SACRAL NEUROMODULATION PATIENTS: RESULTS FROM THE PRODUCT SURVEILLANCE REGISTRY
Karl Kreder, MD, MBA¹, Kevin Benson, MD², Keisha Sandberg MPH³, Brian Van Dorn, MS³ and Todd Weaver, PhD, MPH³
¹University of Iowa; ²Sanford Health; ³Medtronic
Presented By: Karl Joseph Kreder Jr., MD, MBA

Introduction: InterStim therapy utilizes sacral neuromodulation for the treatment of urgency incontinence, urgency-frequency, non-obstructive urinary retention, and fecal incontinence. To better characterize product performance events in a large, prospective study, information was analyzed from the Product Surveillance Registry (PSR). The PSR tracks data in real-world clinical environments to provide insights in how the InterStim therapy (model 3023 and 3058) is utilized while collecting long-term product and safety information.

Methods: Data were analyzed on 910 InterStim patients prospectively enrolled between April 2010-July 2017 from 20 centers in the US and Colombia. The average age was 61 years and 84% were female. The primary indications were urinary urge incontinence (41%), urgency-frequency (33%) and urinary retention (12%). Adverse events were reported by the investigative sites, and product performance events (PPEs) were characterized.

Results: There were 471 events reported between April 2010-July 2017 in patients with sacral neuromodulation systems. Of these events, 18% (87/471) were characterized as product performance related. The top PPEs are presented graphically in Table 1. A total of 68 (78%) of the 87 PPEs were related to the lead, 9 (10%) related to the neurostimulator, 3 (3%) related to the extension, and 7 related to multiple (device and non-device) or other etiologies (9%). Less than 8% of patients experienced a PPE. InterStim device survival (freedom from a PPE) is 98.8% at two years for the InterStim device and 98.3% at two years for the InterStim II device. Lead survival during the same time period is 90.6% for model 3889 and 93.9% for model 3093.

Conclusion: Results from this large, prospective registry demonstrated 7.9% of patients experience an event related to a product performance issue. The most commonly reported device-related complications were high impedance (3.4%) and lead migration (1.5%). This data helps inform patients and providers of the acceptable safety profile of InterStim therapy.

Table 1: Sacral Neuromodulation Product Performance Events

<table>
<thead>
<tr>
<th>Reason</th>
<th>Number of Events</th>
<th>% of Patients with Event (n=910)</th>
</tr>
</thead>
<tbody>
<tr>
<td>High impedance</td>
<td>37</td>
<td>3.4%</td>
</tr>
<tr>
<td>Lead migration/dislodgement</td>
<td>16</td>
<td>1.5%</td>
</tr>
<tr>
<td>Lead fracture</td>
<td>12</td>
<td>1.2%</td>
</tr>
<tr>
<td>Low impedance</td>
<td>7</td>
<td>0.8%</td>
</tr>
<tr>
<td>Other*</td>
<td>15</td>
<td>1.0%</td>
</tr>
<tr>
<td>Total</td>
<td>87</td>
<td>7.9%</td>
</tr>
</tbody>
</table>

*Event categories with 4 or less events reported
Poster #M27
OUTCOMES OF SACRAL NEUROMODULATION FOR TREATMENT OF REFRACTORY OVERACTIVE BLADDER AMONGST OCTOGENARIANS
Nichole Young-Lin, MD, Raveen Syan, MD, Michele Torosis, MD, Craig Comiter, MD and Ekene Enenchukwu, MD
Stanford, CA
Presented By: Raveen Syan, MD

Introduction: Approximately 40% of people over 80 years of age have overactive bladder (OAB). Sacral neuromodulation (SNS) is an efficacious treatment modality for refractory overactive bladder (OAB), however advanced age is often a reason why patients may not undergo SNS. We sought to determine the efficacy and safety of SNS in our octogenarian population.

Methods: A retrospective review from a single institution was performed on all SNS lead placements from 1998 to 2017 for overactive bladder (urinary urgency, frequency and/or incontinence). Octogenarians were characterized as age 80 or above at time of stage 1 SNS. Efficacy was determined using rates of progression to stage 2 SNS, explantation rate, and need for subsequent therapy.

Results: Of 374 patients, 40 (11%) were octogenarians. Compared to non-octogenarians, there was no difference in gender, race, or smoking history. However, octogenarians had lower body mass index (BMI) and higher rates of cardiovascular disease and myocardial infarction (Table 1). There was no statistical difference in pre-treatment regimens between the groups. Subjects in the octogenarian group did not differ with respect to SNS efficacy, need for revision surgery, explantation rate or subsequent treatment rate (Table 1), compared to the non-octogenarian group. Indications for explantation and types of subsequent therapies were also similar between the two groups.

Conclusion: In contrast to several previous studies, efficacy of SNS did not differ between the non-octogenarian and octogenarian groups, suggesting that SNS is a safe and efficacious treatment for patients of advanced age and should be offered to octogenarians with refractory overactive bladder.

Table 1: Demographic, pre-treatment and post-treatment comparisons

<table>
<thead>
<tr>
<th>Preoperative Characteristics</th>
<th>Non-Octogenarian (%) n=334</th>
<th>Octogenarian (%) n=40</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age at Stage 1</td>
<td>74.2 (range 19-79)</td>
<td>77.6 (range 69-91)</td>
<td>0.36</td>
</tr>
<tr>
<td>Female</td>
<td>212 (63)</td>
<td>22 (55)</td>
<td>0.30</td>
</tr>
<tr>
<td>BMI</td>
<td>28.9</td>
<td>26.2</td>
<td>0.05</td>
</tr>
<tr>
<td>Race (n=222)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>African American</td>
<td>12 (4)</td>
<td>2 (5)</td>
<td>0.51</td>
</tr>
<tr>
<td>Asian</td>
<td>14 (4)</td>
<td>0 (0)</td>
<td></td>
</tr>
<tr>
<td>Native American</td>
<td>2 (1)</td>
<td>0 (0)</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>34 (10)</td>
<td>0 (0)</td>
<td></td>
</tr>
<tr>
<td>Unknown</td>
<td>25 (7)</td>
<td>1 (2.5)</td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>247 (74)</td>
<td>35 (87.5)</td>
<td></td>
</tr>
<tr>
<td>Comorbidities</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diabetes</td>
<td>45 (14)</td>
<td>8 (16%)</td>
<td>0.07</td>
</tr>
<tr>
<td>Stroke</td>
<td>25 (8)</td>
<td>3 (8)</td>
<td>0.05</td>
</tr>
<tr>
<td>Cardiovascular disease</td>
<td>65 (19)</td>
<td>18 (45)</td>
<td>0.05</td>
</tr>
<tr>
<td>Myocardial Infarction</td>
<td>11 (3)</td>
<td>7 (16)</td>
<td>0.05</td>
</tr>
<tr>
<td>Neurologic Disorder</td>
<td>127 (38)</td>
<td>13 (32)</td>
<td>0.05</td>
</tr>
<tr>
<td>Smoking History</td>
<td>26 (8)</td>
<td>1 (3)</td>
<td>0.46</td>
</tr>
<tr>
<td>Prior Therapy</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oral OAB Meds</td>
<td>331 (99)</td>
<td>39 (98)</td>
<td>0.20</td>
</tr>
<tr>
<td>Botox</td>
<td>39 (12)</td>
<td>5 (13)</td>
<td>0.06</td>
</tr>
<tr>
<td>PTNS</td>
<td>12 (4)</td>
<td>1 (3)</td>
<td>0.15</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Postoperative Outcomes</th>
<th>Non-Octogenarian (%) n=334</th>
<th>Octogenarian (%) n=40</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Progression to Stage 2 Rate</td>
<td>202 (60)</td>
<td>22 (55)</td>
<td>0.87</td>
</tr>
<tr>
<td>Revision Surgery</td>
<td>15 (4)</td>
<td>3 (8)</td>
<td>0.44</td>
</tr>
<tr>
<td>Explantation Rate</td>
<td>145 (41)</td>
<td>6 (15)</td>
<td>0.80</td>
</tr>
<tr>
<td>Explantation Indication</td>
<td></td>
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<tr>
<td>OTHER</td>
<td>26 (9)</td>
<td>4 (10)</td>
<td>0.28</td>
</tr>
<tr>
<td>Infection</td>
<td>7 (2)</td>
<td>0 (0)</td>
<td></td>
</tr>
<tr>
<td>Magnetic resonance imaging</td>
<td>4 (1)</td>
<td>0 (0)</td>
<td></td>
</tr>
<tr>
<td>Extention/Incontinence</td>
<td>3 (1)</td>
<td>2 (5)</td>
<td></td>
</tr>
<tr>
<td>Pain</td>
<td>3 (1)</td>
<td>0 (0)</td>
<td></td>
</tr>
<tr>
<td>Subsequent Therapies</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Any subsequent therapies</td>
<td>101 (30)</td>
<td>14 (35)</td>
<td>0.54</td>
</tr>
<tr>
<td>Oral OAB Medication</td>
<td>66 (20)</td>
<td>10 (25)</td>
<td>0.44</td>
</tr>
<tr>
<td>Botox</td>
<td>50 (15)</td>
<td>8 (20)</td>
<td>0.47</td>
</tr>
<tr>
<td>PTNS</td>
<td>2 (11)</td>
<td>0 (0)</td>
<td>0.62</td>
</tr>
</tbody>
</table>
Introduction: We report early results of a randomized trial of percutaneous implanted chronic tibial nerve stimulation (CTNS) device compared to standard posterior tibial nerve stimulation (PTNS).

Methods: Women with overactive bladder (OAB) were randomized to office based implantation of a newly developed CTNS device or 12 weekly PTNS treatments. The implanted CTNS device is activated while sleeping for 8 hours/day by a wireless antenna worn in a lower leg sock. The primary efficacy outcome is defined as a ≥ 50% reduction in number of urgency related incontinence episodes at 3 months. Adverse events, incontinence episodes / day (IED), validated questionnaires were completed. Descriptive statistics were performed.

Results: 3 women randomized to CTNS and 4 women to PTNS have completed 6 months and 13 weeks follow up, respectively. As shown in the Table, the CTNS group mean IED decreased more than 50% (from 3.47 to 1.11) at one week and remained stable through 6 months. The mean IED for PTNS improved more slowly and met the primary endpoint at 12 weeks. Questionnaire scores also appeared to improve. At 6 months in this small CTNS group, one patient had ankle pain after insertion that resolved and one patient had a prolene suture removed that was securing the distal lead to the dermis.

Conclusion: Although more data are needed to confirm these findings, preliminary results suggest that CTNS can improve OAB symptoms quickly and safely. Continued enrollment will allow for comparing outcomes between groups.
Poster #M29
TITLE: PSYCHOLOGICAL TRAUMA IN INTERSTITIAL CYSTITIS/BLADDER PAIN SYNDROME (IC/BPS): AN ANALYSIS AND CONSIDERATIONS FOR CLINICAL PRACTICE
Lindsey C. McKernan, PhD¹, William S. Reynolds, MD, MPH², Roger R. Dmochowski, MD, MMHC² and Leslie J. Crofford, MD³
¹Department of Psychiatry & Behavioral Sciences, Vanderbilt University School of Medicine, Nashville, TN; ²Department of Urologic Surgery, Vanderbilt University School of Medicine, Nashville, TN; ³Department of Medicine, Vanderbilt University School of Medicine, Nashville, TN
Presented By: Lindsey C. McKernan, PhD

Introduction: Interstitial cystitis/bladder pain syndrome (IC/BPS) has been associated with elevated exposure to trauma throughout the lifespan, with prevalence of abuse ranging from 25-49%. 1 The presence of abuse has been associated with altered symptom presentation and poor prognosis.2-4 To date, studies have failed to distinguish between exposure to trauma and active symptoms of post-traumatic stress disorder (PTSD). How these relationships compare to other chronic pain conditions has yet to be investigated. We sought to compare trauma exposure and PTSD symptoms in a sample of chronic pain patients with and without IC/BPS. We hypothesized that IC/BPS would be associated with increased exposure to trauma and PTSD symptomology.

Methods: We sampled 200 individuals with a chronic pain diagnosis in an outpatient urology or integrative medicine setting in a large academic medical institution. Individuals completed self-report assessments detailing exposure to trauma in childhood, in adulthood, and active PTSD symptomology using validated self-report measures. Those who met RICE sensitivity criteria5 for IC/BPS (N = 63) were compared against those with non-IC/BPS chronic pain (N = 137) using Wilcoxon Rank Sum Tests.

Results: Results are presented in Table 1. Individuals who met sensitivity criteria for IC/BPS did not differ from non-IC/BPS chronic pain in exposure to trauma in childhood (p=0.062) or adulthood (p=0.63). However, those with IC/BPS were significantly more likely to experience symptoms of PTSD (p = 0.009).

Conclusion: In a chronic pain sample, individuals screening positive for IC/BPS displayed significantly greater symptoms of PTSD. The clinical implications of treating individuals with PTSD in a urology setting are largely unexplored. Individuals with chronic pain and concurrent PTSD may require careful consideration at various stages of intervention. Based on these results, we offer suggestions for screening and trauma-informed care in assessment, examination, and intervention with these patients to increase a sense of safety and control.

Table 1: Trauma Exposure and Traumatic Stress in IC/BPS (N=63) and non-IC/BPS Chronic Pain (N=137) patients, comparison of median scores (with standard deviation) using a Wilcoxon Rank Sum Test

<table>
<thead>
<tr>
<th></th>
<th>Chronic Pain (N = 137)</th>
<th>Chronic Pain &amp; likely IC/BPS (N = 63)</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Childhood Abuse and Trauma Scale (CATS)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Childhood Punishment</td>
<td>8.9 (4.8)</td>
<td>10.1 (5.0)</td>
<td>0.13</td>
</tr>
<tr>
<td>Childhood Neglected Hostile Home</td>
<td>16.6 (13.8)</td>
<td>19.7 (14.2)</td>
<td>0.13</td>
</tr>
<tr>
<td>Childhood Sexual Abuse</td>
<td>1.5 (28)</td>
<td>2.0 (3.2)</td>
<td>0.38</td>
</tr>
<tr>
<td><strong>Trauma History Questionnaire (THQ)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adulthood Crime-Related Events</td>
<td>0.78 (0.97)</td>
<td>0.85 (0.95)</td>
<td>0.56</td>
</tr>
<tr>
<td>Generalized traumatic experience</td>
<td>3.7 (2.5)</td>
<td>3.2 (2.6)</td>
<td>0.16</td>
</tr>
<tr>
<td>Adulthood Physical/Sexual Abuse</td>
<td>1.0 (1.4)</td>
<td>1.1 (1.1)</td>
<td>0.32</td>
</tr>
<tr>
<td><strong>Post-Traumatic Stress Disorder Checklist for DSM-5</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PTSD Assessment</td>
<td>20.1 (15.4)</td>
<td>28.9 (20.9)</td>
<td>0.009**</td>
</tr>
</tbody>
</table>

**p<0.05

Poster #M30
IS THERE A ROLE FOR CYSTOSCOPY WITH FULGURATION IN THE MANAGEMENT OF RECURRENT URINARY TRACT INFECTIONS IN WOMEN?
Joseph Crivelli, Feras Alhalabi, MD and Philippe Zimmer, MD
UT Southwestern Medical Center
Presented By: Joseph J. Crivelli, MD

Introduction: We report on the long-term efficacy of cystoscopy with fulguration (CF) for women with recurrent urinary tract infections (RUTI) and cystoscopic infectious/inflammatory findings.

Methods: Following institutional review board approval, a retrospective study of non-neurogenic women who underwent CF without a concomitant urologic procedure was performed. All patients had RUTIs defined as ≥3 UTIs/year with positive urine culture. Clinical data were collected from EPIC by neutral investigators. All patients had a preoperative office flexible cystoscopy demonstrating infectious/inflammatory lesions, categorized by location: urethra, bladder neck, trigone, and beyond trigone. All lesions were cauterized during outpatient CF under anesthesia. On 6-month postoperative office cystoscopy, endoscopic success was defined as resolution of all lesions previously seen and no new lesions (i.e. normal cystoscopy). The primary outcome was UTIs/year; UTI was defined as antibiotic treatment for UTI-like symptoms and/or for positive urine culture. Clinical success or cure was defined as no further UTIs, improvement as <3 UTIs/year, and failure as ≥3 UTIs/year.

Results: Of 95 women who met study criteria between 2004-2016, 62 (65%) were successful and 33 (35%) failed based on postoperative cystoscopy. Over a median follow-up of 4.9 years, the median UTIs/year was 0.8 (interquartile range 0.3-1.9). Endoscopically successful patients had fewer UTIs/year compared to endoscopic failures (0.6 vs. 0.9, p=0.03). Regarding clinical UTI status, 14 (15%) patients were cured, 69 (73%) were improved, and 12 (13%) failed. Compared to clinically improved patients, clinical failures were more likely to have infections with multiple organisms (92% vs. 35%, p<0.001) and highly resistant (>3 antibiotic resistances) organisms (92% vs. 23%, p<0.001). Suppressive antibiotics were more commonly prescribed to patients with endoscopic failure compared to endoscopic success (77% vs. 40%, p=0.001).

Conclusion: Among women who underwent CF, the majority were endoscopically successful and experienced cure of or improvement in UTIs. While endoscopic failures had significantly more UTIs/year, most also benefitted clinically.
COST-UTILITY ANALYSIS OF UPFRONT PHARMACOTHERAPY COMPARED TO AN UPFRONT SURGICAL INTERVENTION FOR PATIENTS WITH BENIGN PROSTATE HYPERPLASIA

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Presented By: Dean S. Elterman, MD, MSc, FRCSC

Introduction: Benign prostate hyperplasia (BPH) may lead to lower urinary tract symptoms. Patients with moderate-to-severe symptoms usually start upfront pharmacotherapy (e.g., alpha-blockers, 5-alpha reductase inhibitors, or combination). Pharmacotherapy doesn’t necessarily cure BPH & patients may require subsequent surgical interventions such as transurethral resection of the prostate (TURP). An alternative to TURP & pharmacotherapy, Greenlight laser photoselective vaporization of the prostate (GL-PVP), has lower costs compared to TURP & faster symptomatic improvement compared to pharmacotherapy. The purpose of this study was to evaluate the cost-utility of upfront pharmacotherapy (i.e., alpha-blockers or 5-ARI or combination) followed by delayed surgical intervention (i.e., TURP, GL-PVP) for those who fail, compared to receiving an upfront surgical intervention.

Methods: The target population were men with moderate-to-severe symptoms & no contraindications for BPH surgery. Microsimulation was used to model the progression of BPH symptoms, cost projection & quality-adjusted life-years (QALYs). Pharmacotherapy costs were obtained from the Ontario Drug Benefit Formulary. BPH surgeries costs were collected retrospectively. All other outcomes were obtained from the literature. Cost-utility analysis used a Canadian public payer perspective, a life-time time horizon, a discount rate of 1.5% & a willingness-to-pay threshold of $50,000 per QALY. Probabilistic sensitivity analysis (PSA) was performed to estimate parameter uncertainty.

Results: Compared to the upfront pharmacotherapy options, upfront surgical interventions were, on average, more costly & more effective with the incremental cost per QALY gained ranging by drug type from $2,138 to $2,911 for upfront GL-PVP & $5,473 to $6,646 for upfront TURP options. Compared to upfront TURP, upfront GL-PVP was associated with lower costs ($9,468 vs. $11,562) & a marginally lower effectiveness (15.20 vs. 15.24 QALYs) translating to an incremental cost per QALY of $53,417 more gained. PSA indicated that upfront GL-PVP would be cost-effective 47% of the time at a threshold of $50,000/QALY.

Conclusion: In general, upfront BPH surgery is cost-effective option relative to pharmacotherapy. Given the lower costs, relative effectiveness & better safety, GL-PVP may be considered as an upfront intervention for certain patients with moderate-to-severe BPH.

The speaker has received a research grant from Boston Scientific.
VALUE OF ENucleATION-Morcellation EFFICACY TO PREDICT THE LEARNING CURVE OF HOLMIUM LASER ENucleATION OF THE PROSTATE FOR TREATMENT OF BENIGN PROSTATIC HYPERPLASIA

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Presented By: Sung Tae Cho, MD, PhD

Introduction: Holmium laser enucleation of the prostate (HoLEP) is a minimally invasive therapy for benign prostatic hyperplasia (BPH). However, the main limitation of HoLEP is the prolonged learning curve. The enucleation efficacy was known as one of the parameters for estimating the learning curve. But this parameter is only focused on time of enucleation not considering morcellation. In this study, we report on the initial experience of a single surgeon during 2 years and evaluate a various method to assess the learning curve of HoLEP.

Methods: One hundred and thirty consecutive patients with BPH underwent HoLEP combined with mechanical morcellation at our institution. Intraoperative measures, including enucleation time, enucleation ratio, enucleation efficacy, consumed energy, morcellation time, morcellation efficacy and enucleation-morcellation efficacy were analyzed. Perioperative morbidity, length of hospital stay and length of urinary drainage were also investigated.

Results: The mean age of the patients was 68.5 years (32-92) with a mean prostate volume of 56.5cc (34-180). Mean total operative time was 88.6 minutes (45-260 minutes) with a mean enucleated weight of 37.7g (18-120g). Mean enucleation time, consumed energy, morcellation time and enucleation ratio were 47.0 ± 25.8 min, 64.2 ± 18.4 kJ, 18.3 ± 5.6 min and 0.68 ± 0.16 g/mL, respectively. In terms of efficiency, enucleation efficacy, morcellation efficacy and enucleation-morcellation efficacy were 0.97 ± 0.51 g/min, 2.26 ± 1.02 g/min and 0.64 ± 0.27 g/min, respectively. Considering the learning curve, the plateau of enucleation efficacy was reached after 38 cases. However, considering enucleation-morcellation time simultaneously, enucleation-morcellation efficacy has an increasing trend even after 38 cases and has remained constant after 55 cases. Divided into two groups, enucleation efficiency was significantly higher after 38 cases. Morcellation efficiency was also higher in the second group, however, the difference was not significant. Enucleation-morcellation efficiency was significantly higher after 55 cases.

Conclusion: Our results demonstrated that even after 38 cases, surgical skill advances are still needed. Of these factors, morcellation time is as important as enucleation time in the whole surgical procedure. Enucleation-morcellation efficacy might be considered a better parameter for estimating the operative learning curve of HoLEP rather than enucleation efficacy alone.
Poster #M33
EFFICACY OF TRANSCUTANEOUS POSTERIOR TIBIAL NERVE STIMULATION IN OLDER PATIENTS WITH OVERACTIVE BLADDER SYNDROME
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Presented By: Rebecca Haddad, MD

Introduction: Overactive bladder syndrome (OAB) is frequent in older patients. Antimuscarinics are frequently prescribed in case of failure of the first line non-pharmacological treatment, but may lead to increase of anticholinergic load which is related to serious side effects (delirium, falls, etc.). Transcutaneous posterior tibial nerve stimulation (TPTNS) is a non-pharmacological and non-surgical home-based treatment, with little or no side effects. The objectives of this study are to determine efficacy of TPTNS on OAB syndrome in older patients and to look for predictive factors of efficacy.

Methods: All patients aged over 65 years with OAB syndrome for which TPTNS was introduced between 2010 and 2016 in 2 neuro-urology outpatient clinics were included. The TPTNS utilization was learned by patients during a visit with a continence nurse. They used the device at home for 20 minutes each day. We defined efficacy of TPTNS as the purchase of the device between 3 and 6 months. The association between patient characteristics and efficacy was examined in logistic regression models.

Results: A total of 271 patients were included, with a mean age of 74.2 years and 63.8% of women. Among these patients, 50.8% had neurogenic OAB, 75.6% urinary incontinence and 53.5% detrusor overactivity. The overall efficacy was 45.8%. None of the factors tested were significantly predictive of efficacy, especially age (≥75 years, p=0.54) and detrusor overactivity (p=0.39), whether neurogenic or not, except a center effect (p=0.03). This was not sustained after adjustment for age and detrusor overactivity. Failure of a first-line treatment was not a predictive factor of failure in our study.

Conclusion: In this retrospective study, TPTNS was found to be an effective treatment for almost 46% of patients treated. Unfortunately, due to the retrospective characteristic of this study, it was not determined whether efficacy was complete or not and other factors that could influence efficacy were not considered (i.e. other treatments, functional status, comorbidities, etc.). Despite these limitations, efficacy of TPTNS in this study was similar to these of antimuscarinics used in OAB syndrome(1).

WHERE DO WOMEN GO FOR REPEAT PELVIC ORGAN PROLAPSE SURGERY? GEOGRAPHIC MIGRATION PATTERNS IN CALIFORNIA AFTER NATIVE TISSUE AND MESH AUGMENTED REPAIRS

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¹Stanford Urology; ²Stanford, Palo Alto, CA
Presented By: Kai B. Dallas, MD

Introduction: There is a limited understanding of care seeking patterns in women undergoing repeat surgery after pelvic organ prolapse (POP) repair. We hypothesize that care seeking patterns are impacted by prior surgical approach, indication for surgery, and geography. Specifically, we hypothesize that women are more likely to seek care at a new facility for repeat surgery in cases of: 1) same compartment recurrence after native tissue repair; 2) complication after mesh-augmented repair; and 3) index surgery at a low-volume center.

Methods: Using data from the Office of Statewide Health Planning and Development (OSHPD) for the state of California (2005-2011), all females who underwent an index POP repair procedure at non-federal facilities and subsequently underwent a repeat surgery were identified. The locations of index repair and repeat surgery were identified and factors associated with migration were explored.

Results: Of the 110,329 women who underwent index POP repair, 3,930 (3.6%) women eventually underwent repeat surgery for either POP recurrence or a mesh complication and had location data available. Of these, 1,331 (33.9%) had surgery at a new facility. Multivariate analysis revealed that index surgery at a non-high volume facility in a county with multiple competing facilities (odds 1.33, p<0.001), a mesh complication (odds 1.28, p=0.004) and same compartment recurrence (odds 1.19, p=0.02) were all associated with increased odds of seeking a new facility for further care. The effects of mesh complication and same compartment recurrence were not significantly different (p=0.69). Mesh augmentation (0.74, p=0.001) and having surgery at a high-volume facility in a county with multiple competing facilities were associated with a decreased odds of seeking a new facility (odds 0.32, p<0.001). Women with either mesh complications (Figure 1) or native tissue repair failures both tended to migrate towards select centers in urban areas.

Conclusion: The majority of repeat surgery after POP repair (66%) occurs at the same facility as the first repair. Similar increased rates of migration are seen in women with native tissue failures and with mesh specific complications.
Poster #M35
DOES SURGERY IMPROVE BOWEL FUNCTION IN PELVIC ORGAN PROLAPSE?
Esther Han, DO, Laura Nguyen, MD, Jason Gilleran, MD, Jamie Bartley, DO, Kim Killinger, MSN, Judith Boura, MS and Larry Sirls, MD
Beaumont Health, Royal Oak, MI
Presented By: Esther Han, DO

Introduction: To evaluate the effect of different surgical procedures on bowel function in women with pelvic organ prolapse (POP).

Methods: Adult women enrolled in a prospective POP database between 2008 and 2014 were reviewed. Baseline (BL) data and outcomes at one year (1y) after enrollment were collected including the Colorectal-Anal Distress Inventory-8 (CRADI). Patients were grouped by having surgery (SGY) within the first year or no surgery (N-SGY) and compared. Sub-analyses of the SGY group were then performed by surgical approach (vaginal (Va) or abdominal (Ab)), concurrent hysterectomy (HYS), placement of mesh, and concurrent posterior repair. Data were analyzed with descriptive statistics, Chi-square tests, Fisher’s exact tests, paired t-tests, and Wilcoxon rank sum tests.

Results: There were 233 SGY and 60 N-SGY of 293 prolapse patients. The N-SGY group was significantly older (67 ± 12 yrs. vs. 63 ± 11 yrs., p = 0.009). 24.4% (57/233) of total surgery patients underwent a concurrent posterior repair (POS); all were done vaginally.

In the SGY vs. N-SGY groups, CRADI scores were similar at BL but at 1y, SGY scores improved significantly (table). When comparing Va vs. Ab approach and mesh use vs. no mesh, there were no differences in BL nor 1y scores (table). When comparing HYS to no HYS (N-HYS), BL was significantly lower for HYS but there was no difference at 1yr. All treatment groups had significant CRADI improvement, within group, from BL (table).

40.1% (57/142) of the vaginal group had a concurrent rectocele repair (POS). When comparing POS to no POS (N-POS), baseline CRADI was significantly different; CRADI at 1y was not (table). Both groups had significant improvement in CRADI scores from BL to 1y (table). All differences met the minimum important difference established for the CRADI.

Conclusion: Women who underwent surgical repair for prolapse had significantly improved CRADI scores regardless of abdominal or vaginal approach, concurrent hysterectomy or mesh use. Vaginal prolapse surgery improves bowel symptoms even in patients who do not have posterior compartment repair.

Funding:
Ministrelli Program for Urology Research and Education

<table>
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<th></th>
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<th>Ab (n)</th>
<th>Va (n)</th>
<th>HYS (n)</th>
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<th>Mesh (n)</th>
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<td>21.9 (233)</td>
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<td>23 (142)</td>
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<td>1 year</td>
<td>9.4 (177)</td>
<td>6.3 (48)</td>
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Table: Median (Med.) CRADI scores at baseline (BL) and 1 year (1y) for surgery (SGY) vs no surgery (N-SGY), abdominal (Ab) vs vaginal (Va), with or without concurrent hysterectomy (HYS vs N-HYS), mesh vs no mesh use, and with or without concurrent posterior repair (POS vs N-POS).

Poster #M36
WITHDRAWN
Poster #M37
QUALITY OF LIFE OUTCOMES AFTER ROBOTIC SACROCOLOPEXY FOR THE MANAGEMENT OF PELVIC ORGAN PROLAPSE
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1Dartmouth-Hitchcock Medical Center; 2University of Michigan, Ann Arbor, MI; 3Department of Data Management & Statistical Analysis, American Urological Association, Linthicum, MD; 4Concord Hospital Center for Urologic Care, Concord, NH; 5Clinical Associate Professor of Surgery, Geisel School of Medicine at Dartmouth, Lebanon, NH
Presented By: Annah Vollstedt, MD

Introduction: Robotic-assisted laparoscopic sacrocolpopexy (RALS) is a widely-used surgical treatment for pelvic organ prolapse (POP). Our aim was to investigate the longer-term surgical and quality of life (QOL) outcomes in our updated cohort.

Methods: A retrospective cohort study of women undergoing RALS with and without concomitant robotic-assisted laparoscopic hysterectomy, urethral sling, and rectocele repair was performed. Scores from the Pelvic Floor Distress Inventory (PFDI) and Pelvic Floor Impact Questionnaire (PFIQ) surveys were used to evaluate QOL outcomes. Clinical improvement was defined by a decrease in a patient’s PFDI and PFIQ-7 post-operative score by 70%.

Results: A total of 205 patients from November 2010 to June 2015 were included in our review with a mean follow-up time of 23 months. Complete pre- and post-operative survey data were available in 180 patients. Clinical improvement was seen in 62.6% by the PFIQ and in 64% by the PFDI survey. We analyzed patient demographics, history, and pre-operative physical exam in those that reached clinical improvement. Younger patient age (OR 0.92, p=0.011) and a higher pre-operative AUA Quality of Life score (OR 1.42, p=0.46) were associated with clinical improvement. Within the PFQI, 35.6% of patients saw clinical improvement within the bowel category, compared to the bladder category (45.6%, p<0.001) and the pelvis category (45.6%, p=0.053). Similarly, within the PFDI, 45.5% of patients saw clinical improvement within the CRADI-8, compared to the UDI-6 (56.7%, p=0.035) and the POPDI-6 (62.6%, p<0.001). Of the patients who had a concomitant rectocele repair, 46.3% reached clinical improvement in their CRADI-8 score and 51% saw clinical improvement in the bowel portion of the PFDI.

Conclusion: This is the largest series to analyze pre- and post-operative PFIQ and PFDI scores. Most patients undergoing RALS saw clinical improvement based on the PFDI and PFIQ following RALS. However, there were significantly fewer patients reached our clinical improvement definition within the portions of the surveys that focus on bowel symptoms and functions compared to the portions of the surveys that ask about symptoms related to urination and POP. Of those that had a concomitant rectocele repair, approximately half reached clinical improvement their bowel symptoms. This information can be helpful when counseling patients pre-operatively regarding expectations of improving pre-existing bowel symptoms after RALS.
Poster #M38
MESHING AROUND: LONG-TERM OUTCOMES FOLLOWING VAGINAL RECONSTRUCTIVE SURGERY WITH SYNTHETIC MESH AUGMENTATION
Margaret Knoedler, MD, Hayley Barnes, MD, Elizabeth Meller, BS, Caroline Kieserman-Shmokler, MD, Dobie Giles, MD, MS, Christine Heisler, MD, MS, Heidi Brown, MD, MAS and Sarah McAchran, MD
Madison, WI
Presented By: Margaret Knoedler, MD

Introduction: To characterize outcomes 5-30 years following vaginal reconstructive surgery with synthetic mesh augmentation.

Methods: Retrospective chart review of patients who underwent vaginal prolapse surgery with synthetic mesh between May 1991 and October 2010 at a single academic institution. Data were collected from medical records and eligible patients were invited to complete a written survey and focused pelvic exam. Details regarding past medical and surgical history, index surgery performed, perioperative complications, and relevant subsequent operations were abstracted; current symptoms, signs and patient satisfaction were ascertained from written surveys and pelvic exams when available. Descriptive analyses were performed to characterize the sample. The primary outcome was reoperation for mesh-related complication. Factors associated with mesh-related reoperation on univariate analysis with p-value<.2 were included in a backward linear regression model. Secondary outcomes included rates of mesh-related complications, overall reoperation rate, and current symptoms and satisfaction.

Results: Among 804 potential patients identified, 158 patients were eligible for inclusion. Overall, 33/158 (21%) women underwent mesh-related reoperation; associated factors are outlined in Table 1. The rate of mesh-related complication was 34%(n=54); 30%(48) had mesh extrusion into the vagina and 1% had mesh erosion into the bladder(1) or rectum(1). Among 43 questionnaires received, 74%(32) report symptoms are better, 9%(4) are the same, and 16%(7) are worse. Regarding surgical satisfaction, 42% (18) are very satisfied, 28%(12) somewhat satisfied, 14%(6) somewhat unsatisfied, and 16%(7) very unsatisfied.

Conclusion: When followed for up to 25 years, almost one third of patients who had a mesh augmented transvaginal repair of prolapse required a subsequent operation. Over 20% of patients required reoperation for a mesh related complication. Younger women, women with apical mesh placed, and women who experienced intraoperative urinary tract injury were more likely to require reoperation.

Funding provided by Departmental Grants from Urology and Ob-Gyn and a Multidisciplinary K12 Urologic Research Grant (NIH K12DK100022-2)

| Table 1. Factors Associated with Reoperation for Mesh-Related Complication |
|--------------------|----------------|----------------|-----------------|-----------------|
| Reoperation | No Reoperation | p-value | Adjusted Odds Ratio |
| Age mean (50) | 54 (10.8) | 62 (11.4) | .001 | -.25 (-.014, .003, p=.002) |
| BMI mean (50) | 27.5 (5.6) | 29.2 (5.5) | .117 | -.14 (-.022, .001, p=.069) |
| Prior prolapse repair | 17 (52) | 73 (57) | .587 | |
| Prior hysterectomy | 23 (79) | 101 (81) | .167 | -.15 (-.315, .008, p=.063) |

| Surgical Characteristics |
|--------------------------|----------------|----------------|
| Anterior mesh | 19 (54) | 63 (50) | .463 |
| Posterior mesh | 24 (73) | 82 (66) | .438 |
| Apical mesh | 25 (75) | 71 (57) | .047 | .22 (.046, .316, p=.009) |
| Concomitant hysterectomy | 6 (16) | 14 (11) | .283 |
| Wound complication | 3 (9) | 8 (6) | .589 |
| Perioperative infection | 10 (33) | 36 (29) | .866 |
| Urinary tract injury | 3 (9) | 11 (1) | .007 | .16 (.018, .80, p=.940) |
Poster #M39
THE OUTCOMES OF URETHROVAGINAL FISTULA REPAIR
Rachel Barratt MB ChB, Stephanie Kotes, MD FEBU, Mahreen Pakzad, MD, FRCS, MB ChB, Rizwan Hamid, MSc, FRCS, MB ChB, Jeremy Ockrim, MD, FRCS, MB ChB and Tamsin Greenwell, MD, FRCS, MB ChB
UCLH Urology, UCLH, London, UK
Presented By: Rachel Barratt, BMBS, MRCS

Introduction: Urethrovaginal fistulae (UVF) are very rare in the developed world – with less than 15 repairs annually in England. We report our experience with UVF to determine optimum treatment and outcomes.

Methods: We have retrospectively reviewed our prospectively acquired genitourinary tract fistula database. We assessed the demographics, aetiology, surgical procedure and outcomes in 24 women with median age 53.33 years (range 26-78) having surgical repair of their UVF between 3/3/04-6/5/15.

All patients, except 2 with associated VVF, had videourodynamic (VUDS) and cystourethroscopy peri-operatively. Persistent urinary incontinence (UI) was assessed with repeat VUDS 6 months post surgery.

Results: Aetiology of UVF was; mid urethral tape (MUT) for stress UI (SUI) in 12(50%), excision of urethral diverticulum in 4(16.7%), untreated urethral diverticulum in 2(8.3%), excision biopsy of suspicious vaginal tumour in 2(8.3%) and in 1(4.1%) each following; cystoscopy, excision of ectopic ureter, bladder neck reconstruction and obstructed 2nd stage of labour. 2 women also had vesicovaginal fistulae; following recurrent urethral diverticulum excision and obstructed 2nd stage of labour.

The patient with the post obstetric UVF and VVF was managed with bladder neck closure, clam ileocystoplasty and Mitrofanoff channel formation. She is well and dry with a catheterisable channel 13 years post surgery. 23 (95.8%) had vaginal repair with modified Martius labial fat pad interposition +/- vaginal excision of MUT – all of whom has a successful anatomical closure (100%).

3/22 (13.7%) had pre-existing USUI and 3/22 (13.7%) also had mixed UI (MUI). Following successful vaginal closure of UVF 8/23 (34.8%) patients had UI; 6/6 (100%) of those with persistent SUI/MUI and 2/18 (11.71%) of those with new onset SUI.

New onset USUI was managed successfully with laparoscopic colposuspension in both cases, persistent MUI was successfully managed with rectus fascial sling in all and SNM (1)/Botulinum toxin (2) whilst persistent SUI was managed successfully with rectus fascial sling in 2 cases and TVT-O in 1 case – with success in 2/3.

Conclusion: UVF is rare. Its main causes in current practise are MUT and urethral diverticulum. Vaginal repair is possible in 95.8% with modified Martius labial fat pad interposition provides anatomical closure in 100%. Persistent and new onset USUI/MUI occurs in 34.8% but responds well to available treatment options with success rates of 87.5%.
Poster #M40
ILEAL CONDUIT RECONSTRUCTION IN PATIENTS WITH STOMAL STENOSIS OR RETRACTION USING A NEW SEGMENT OF ILEUM
Ali Syed, MD, Mihir Shah, MD, Alana Murphy, MD, Akhil Das, MD and Patrick Shenot, MD
Thomas Jefferson University Hospital
Presented By: Ali Syed, MD

Introduction: Creation of an ileal conduit may be complicated by late stomal complications such as stomal stenosis or stomal retraction both of which make the adherence of an ostomy appliance problematic. These complications can be difficult to manage. Many of these complications may not occur for years following creation of the stoma. Complete resection of the old conduit with reconstruction of a new conduit using a new loop of ileum is technically challenging primarily due to difficulty performing a new uretero-ileal anastomosis. We present our experience with ileal conduit reconstruction for late stomal complications using a second segment of ileum that avoids any revision of the existing uretero-ileal anastomosis.

Methods: Eleven patients with stomal stenosis (4 patients) or stomal retraction (7 patients) underwent stomal repair 20.5 +/- 19.7 years following initial ileal conduit construction. Mean patient age was 55.5 +/- 9.8 years. The indication for the ileal conduit was bladder cancer in three patients and neurogenic bladder in eight patients (three with spinal cord injury and five with spina bifida). The five patients with spina bifida all had ileal conduit surgery as children over 40 years prior to revision. Surgery progressed in the following order: exploratory laparotomy, takedown of ostomy, excision of the stomal stenosis if necessary, selection of an ileal segment chosen to reach from the proposed neo-stoma site to the already existing subfacial conduit, restoration of bowel continuity, end-to-end ileoileostomy (old subfascial conduit to new loop which forms the stoma) and maturation of new ileal stoma.

Results: Mean operative time was 219 +/- 54 minutes. Estimate Blood loss was 134.0 +/- 59 mL. All patients have functioning, viable stomas with a minimum of 36 months follow-up. We have observed no bowel related complications.

Conclusion: Surgical revisions necessary for the management of late stomal complications of ileal conduit may be technically complex. Reconstruction with additional ileal segment to create a composite conduit is a viable option with excellent outcomes. We have found this technique particularly useful in obese patients and in patients with pediatric constructed conduits.

Funding: None
Poster #M41
DEVELOPMENT, VALIDATION, AND RESULTS OF A NOVEL INVENTORY TO ASSESS CHANGE IN GENDER DYSPHORIA AFTER GENDER AFFIRMING SURGERY
Maurice Garcia, MD, MAS1 and Dan Karasic, MD2
1Cedars Sinai Medical Center; 2UCSF
Presented By: Maurice Garcia, MD

Introduction: The medical indication for genital gender affirming surgery (GAS) is the diagnosis of gender dysphoria. The goal of GAS is to at least alleviate and reduce gender dysphoria. However, to date, no inventory that measures/quantifies the degree of gender dysphoria a patient associates with his or her body has been described. Furthermore, no inventory for gender dysphoria allows for pre and post-surgery assessment of gender dysphoria, to allow measurement of the effect of specific gender affirming surgeries to reduce gender dysphoria for transgender patients. We describe a novel questionnaire that we developed expressly for this purpose. We also describe two additional validated and commonly used inventories for depression/anxiety and quality of life, which we use with our inventory with transgender patients presenting to our centers for genital GAS.

Methods: We describe a 20-question inventory comprised of 12 questions to assess the degree to which a patient’s body contributes to their global gender dysphoria, 2 questions that assess the degree to which the patients genital areas contribute to their gobal gender dysphoria, and 6 questions that specifically assess measurable change in gender dysphoria after genital surgery.

We validated this questionnaire among transgender patients and transgender health professionals, yielding to recommended changes in wording and inventory item structure.

Results: We describe our approach to validate our inventory. We present the various questions from the questionnaire we developed, and , highlight an overview of the already validated inventories we co-administer to patients (WHOQOL-BREF for global QOL and the PHQ-9 for depression/anxiety). We review outcomes from our patients comparing inventory results before and after genital gender affirming surgery, which unequivocally demonstrate that gender dysphoria and depression/anxiety are reduced significantly, and quality of life is improved significantly, with genital gender affirming surgery.

Conclusion: The novel gender dysphoria inventory we developed and validated appears to measure changes in gender dysphoria after genital gender affirming surgery, which supports the rationale for such surgeries. Furthermore, we propose that this same inventory could be used to measure changes in gender dysphoria after non-genital surgeries.

Funding source: none
**Poster #M42**

**INCREASING THE RATE OF VAGINAL REPAIR OF VESICOVAGINAL FISTULAE DOES NOT AFFECT OUTCOME.**

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UCLH Urology, UCLH, London, UK

Presented By: Sarah Itam, MEd FRCS(Urol) MBBS

**Introduction:** Traditionally urologists have repaired vesicovaginal fistula (VVF) abdominally and gynaecologists vaginally. We have reviewed the routes of repair in a 2 surgeon series of VVF managed at a tertiary referral centre between 2000 and 2017 to see if this is still the case.

**Methods:** Review of a prospective database for all patients with VVF for details of all patients with VVF from 2000. Data on patient demographics, fistula aetiology, route of repair and final outcome was recorded for each consecutive 5 year period.

**Results:** 139 patients of median age 50 years (range 21-88) were referred with VVF during this period. 155 VVF repairs were performed in these women; 62 via the abdominal route (AR) and 93 via the vaginal route (VR). Absolute indications for abdominal repair are considered to be requirement for simultaneous ureteric reimplantation and/or clam cystoplasty, or early repair following abdominal procedure. Absolute indications for abdominal repair were present in 9 women; the remaining 53 women had abdominal repair due to surgeon preference or access difficulty. The details of route of VVF repair and time period are shown in Figures 1.

During this time period successful repair of VVF increased from 75% AR and 86%VR to 86% AR and 100% VR. Anatomical closure was achieved in 97% overall. – with no significant difference between abdominal or vaginal closure routes (P > 0.05).

**Conclusion:** Vaginal repair of VVF has become increasingly common in urologists hands with excellent fistula outcomes and should be the route of choice if there are no absolute indications for abdominal repair.
CAUSES OF ARTIFICIAL URINARY SPHINCTER FAILURE AND STRATEGIES FOR SURGICAL REVISION: IMPLICATIONS OF DEVICE COMPONENT SURVIVAL

Arnav Srivastava, BA, MPH, Gregory Joice, MD, Hiten Patel, MD, MPH, Madeleine Manka, MD, Nikolai Sopko, MD, PhD and Edward Wright, MD
Johns Hopkins Hospital, Baltimore, MD
Presented By: Arnav Srivastava, B.A., M.P.H.

Introduction: Up to 50% of patients receiving an artificial urinary sphincter (AUS) require surgical revision after initial placement. However, literature is heterogeneous regarding the leading causes of AUS failure and appropriate surgical correction. Our study aims to tabulate the causes of AUS failure requiring surgical revision, assess the survival characteristics of each component, and examine the efficacy of single-component revision.

Methods: We retrospectively reviewed 168 patients receiving AUS placements from 2008 – 2016. Patients requiring revision had either pressure-regulating balloon (PRB)-only correction or revision with cuff and PRB exchange. Bootstrapped intervals estimated mean time-to-failure for individual AUS components. Survival analysis using Kaplan Meier estimates compared individual component survival as well as device survival by revision technique.

Results: Median follow up was 2.7 years (IQR: 1.1, 5.9) with 63 patients (37.5%) requiring AUS correction. The most common cause of device failure was PRB malfunction (36.5% of all device failures), while cuff or pump malfunction was rare (Figure 1). Stratifying mechanical failure, device failure due to PRB malfunction occurred later (4.82 years after initial placement) than failures attributed to cuff (1.32 years) or pump malfunction (0.38 years) (p<0.05). Lastly, among patients undergoing surgical revision, those undergoing only PRB correction had similar outcomes to those cuff and PRB replacement (71.1% vs. 68.9% device survival at 2.5 years after first revision; p=0.46).

Conclusion: PRB malfunction is the most common cause of AUS failure in our cohort. PRB-only correction appears to satisfactorily restore AUS function in some patients. Consequently, initial interrogation of the PRB may spare patients a second incision and urethral exposure for many patients requiring AUS revision.

![Figure 1: Survival of Individual AUS Components](image-url)
Poster #NM1
DOES INCORPORATION OF AN OVERACTIVE BLADDER CARE PATHWAY IMPROVE FOLLOWUP AND PROGRESSION TO THIRD LINE THERAPIES?

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1Stony Brook University School of Medicine; 2Stony Brook University Medical Center, Stony Brook, NY; 3Stony Brook Medicine Department of Urology
Presented By: William T. Berg, MD

Introduction: Overactive bladder (OAB) is highly prevalent and has a negative impact on quality of life. Follow up and compliance rates are traditionally poor in this patient population, with many patients cycling between multiple medications without improvement or progression to 3rd line therapies. We sought to improve our practice follow-up rate and utilization of 3rd line therapies with the introduction of OAB care pathway.

Methods: Our study cohort included all new OAB patients from 1 year prior to 1 year after the introduction of an OAB care pathway in January 2016. Patients were identified by the diagnosis of OAB, urinary frequency, urgency, and urgency incontinence. Follow up dates and utilization of therapies were compared pre and post introduction of the OAB care pathway. 11 subspecialty trained urologists, including 1 FPRMS certified urologist were included in the analysis.

Results: A total of 1343 patients were identified. 726 patients were in the pre-pathway cohort and 617 in post-pathway cohort. The follow-up rate at 6 weeks for new OAB patients was significantly higher after clinical pathway introduction (30.4% vs 37.1% p=0.01). Additionally, 3 month follow-up rate was significantly higher after introduction (40.1% vs 50.9% p<0.01). The FPMRS trained attending in our practice had similarly improved follow up rates at 6 weeks (22% vs 32% p<0.01) and 3 months (35% vs 47% p<0.01). For both the entire practice and the FPMRS provider, the mean number of visits in 6 months increased over 50% after introduction of the pathway (0.81 vs 1.23 P<0.01 and 0.91 vs 1.48 p<0.01 respectively). In a 6 month follow up period, utilization of 3rd line therapies increased significantly from 2.9% to 5.5% (p=0.02). Furthermore, for the FPRMS provider, utilization for 3rd line therapies in 6 months increased from 6.3% to 12% (p=0.02).

Conclusion: The integration of a clinical care pathway significantly increased the patient follow up rate. Additionally, there was a significant increase in the utilization of 3rd line therapies within 6 months of initial visit. Further studies may elucidate whether the OAB care pathway will lead to increased patient quality of life and satisfaction.

Source of Funding: None
Poster #NM2
PERI-OPERATIVE RISK FACTORS FOR POST-OP URINARY RETENTION AFTER ELECTIVE SPINE SURGERY
Fahad Sheckley, MD Candidate1, Spencer Hiller, MD2, Gail Briolat, MSN, RN3, Jeffrey Fischgrund, MD4 and Melissa Fischer, MD5
1Beaumont Health; 2Beaumont Health, Department of Urology, Royal Oak, MI; 3Michigan Institute of Urology, Royal Oak, MI; 4Beaumont Health, Department of Orthopedic Surgery, Royal Oak, MI; 5Beaumont Health, Department of Urology & Michigan Institute of Urology, Royal Oak, MI
Presented By: Fahad Sheckley, MD

Introduction: Postoperative Urinary retention (POUR) is a common complication following spinal surgery. POUR is characterized by difficulty of voluntary urination for hours or days after surgery. The incidence of POUR is about 5-13%. Patients may require catheterization to release urine, leading to additional morbidity especially if they are discharged home with a catheter. Studies have suggested that POUR develops due to factors like age, duration of procedure, concomitant medications, comorbidities and more. However, there is no consensus on the most direct causes of POUR. The primary goal of this study is to determine risk factors that might lead to POUR.

Methods: Retention was considered in patients who required reinsertion of a catheter (intermittent or indwelling) after surgery. A retrospective chart review of 477 patients (age >18) who underwent elective spinal surgery at William Beaumont Hospital-Royal Oak from Dec 2013 to Aug 2014 was performed. Data included preoperative, perioperative and postoperative factors, for example, age, duration of procedure, concomitant medications, and comorbidities. Multivariate logistic regression analyses were performed. Since males and females were significantly different in terms of what factors affected POUR, we performed two separate analyses. Results are presented in terms of Odds Ratios (OR), corresponding 95% confidence intervals, and P-Values.

Results: Urinary Retention developed in 21% of all patients (18.8% females, 23.7% males). In males, history of Benign Prostatic Hyperplasia (OR: 7.91, P = < 0.001), Anti-Cholinergic Prescription (OR: 5.27, P = 0.0281), Gout (OR: 14.5, P = 0.0303), and Hypothyroidism (OR: 6.29, P = 0.0218) are all significantly and independently associated with higher odds of developing POUR. In females, increasing Age (OR: 1.19, P = 0.0296) and Arthritis (OR: 2.34, P = 0.0143) are significantly and independently associated with higher odds of developing POUR. Other factors like duration of the spinal surgery, BMI, hypertension, Diabetes Mellitus, and beta-blockers alone were not significantly associated with the development of POUR.

Conclusion: An assessment of medical history and risk factors in patients undergoing elective spinal surgeries could help predict the development of POUR. Furthermore, clinical pathways could be developed to potentially minimize the occurrence of POUR. An ongoing effort to address POUR could result in improving subjective and objective outcomes.
DEFINING BLADDER HEALTH IN WOMEN AND GIRLS: IMPLICATIONS FOR RESEARCH, CLINICAL PRACTICE AND PUBLIC HEALTH PROMOTION

Ariana Smith, MD1, Tamara Bavendam, MD, MS2, Amanda Berry CRNP, MSN, PhD3, Sonya Brady, PhD4, Cynthia Fok, MD, MPH5, Sheila Gahegan, MD6, Patricia Goode, MSN, MD7, Cecilia Hardacker, MSN, RN, CNL8, Jeni Hebert-Beirne, PhD, MPH9, Cora Lewis, MD, MSPH10, Jessica Lewis MFT11, Lisa Low, PhD, CNM12, Jerry Lowder, MD, MSc13, Mary Palmer, PhD14 and Emily Lukacz, MD15

1University of Pennsylvania, Philadelphia, PA; 2National Institute of Health/National Institute of Diabetes, Digestive, and Kidney Disorders, Bethesda, MD; 3The Children's Hospital of Philadelphia, Philadelphia, PA; 4University of Minnesota, Minneapolis, MN; 5University of California San Diego, San Diego, CA; 6University of Alabama at Birmingham, Birmingham, AL; 7Howard Brown Health, Chicago, IL; 8University of Illinois, Chicago, IL; 9Yale School of Public Health, New Haven, CT; 10University of Michigan School of Nursing, Ann Arbor, MI; 11Washington University in St. Louis School of Medicine, St. Louis, MO; 12University of North Carolina at Chapel Hill, Chapel Hill, NC

Presented By: Ariana L. Smith, MD

Introduction: This original work was designed to demonstrate a novel approach to the study of prevention for lower urinary tract symptoms (LUTS) in women and girls. Bladder health in women and girls is poorly understood, in part, due to absence of a definition for clinical or research purposes. This paper describes the process used by a National Institutes of Health funded, transdisciplinary research team [The Prevention of Lower Urinary Tract Symptoms (PLUS) Consortium] to develop a definition of bladder health.

Methods: The PLUS Consortium identified currently accepted lower urinary tract symptoms (LUTS) and outlined elements of storage and emptying functions of the bladder. Consistent with the World Health Organization's definition of health, PLUS concluded that absence of LUTS was insufficient and emphasize the bladder's ability to adapt to short-term physical, psycho-social and environmental challenges for the final definition. Definitions for subjective experiences and objective measures of bladder dysfunction and health were drafted. An additional bioregulatory function to protect against infection, neoplasia, chemical or biologic threats was proposed.

Results: PLUS proposes that bladder health be defined as: "A complete state of physical, mental, and social well-being related to bladder function, and not merely the absence of LUTS. Healthy bladder function permits daily activities, adapts to short-term physical or environmental stressors, and allows optimal well-being (e.g. travel, exercise, social, occupational or other activities)." Definitions for each element of bladder function are reported (Table 1) with suggested subjective and objective measures. The bioregulatory category, the most novel element of the table, is organized in terms of three main bioregulatory functions: host defense/biosis barrier, chemical/physical barrier, and cancer barrier.

Conclusion: PLUS employed a comprehensive, transdisciplinary process to systematically develop a bladder health definition. This foundational work will inform instrument development for evaluation of bladder health promotion and prevention of LUTS in research, practice, and public health initiatives.

Funding: NIH/NIDDK
Poster #NM4
DO SOCIAL INTERACTIONS AND MENTAL WELL-BEING AFFECT OVERACTIVE BLADDER SYMPTOMS?
Hillary Wagner, MD, Julie Cheng, MD, MAE, K’dee Elsen MA, Kristin Chung, MS, G. Austin Krishingner BA and Andrea Staack, MD, PhD
Loma Linda, CA
Presented By: Hillary Wagner, MD

Introduction: Overactive bladder (OAB) affects up to 17% of the general population and incidence increases with age. Overactive bladder has been associated with decreased quality of life and higher levels of anxiety and depression. The purpose of our study is to evaluate the association of OAB with mental health and social interactions.

Methods: A cross sectional study was performed. Patients were categorized into OAB or no OAB based on the OAB-q short form questionnaire. A score of 8 or higher indicates presence of an overactive bladder. Validated questionnaires assessed for psychological well-being based on the Beck Anxiety Inventory, Beck Depression Inventory, Insomnia Severity Index, Perceived Stress Scale, and Social Interaction Score. Mann-Whitney U test, Chi-square test, and binary logistic regression were used to analyze the data and determine odds ratios (OR) and 95% confidence intervals (CI). A p-value of <0.05 was considered statistically significant.

Results: Out of 57 patients 38 were in the OAB group and 19 were in the no-OAB group. There was no difference between patient groups in terms of age, BMI, ethnicity, and relationship status. Univariate analysis showed that patients with OAB had increased incidence of anxiety, depression, and insomnia whereas patients without OAB had a higher social interaction score (Table 1). Multivariate analysis demonstrated an association between OAB and anxiety (OR 1.30, CI 1.02-1.67; p=0.03) and depression (OR 1.26, CI 1.03-1.53; p=0.02). Social interaction was protective against OAB (OR 0.90; CI 0.81-0.99; p=0.04). Insomnia approached statistical significance (OR 1.19, CI 0.99-1.43; p=0.06), whereas there was no association with perceived stress (OR 1.03, CI 0.80-1.35; p=0.80).

Conclusion: Univariate and multivariate analyses demonstrate a significant association between OAB with anxiety and depression whereas social interactions may confer a protective effect. This relationship between mental health, social interactions, and OAB shows that there may be underlying non-urologic factors affecting OAB that need to be taken into consideration when managing symptoms.

Table 1. Psychological tests compared between patients with and without OAB on univariate analysis.

<table>
<thead>
<tr>
<th></th>
<th>Overactive bladder</th>
<th>No overactive bladder</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social Interaction Score</td>
<td>12.5 (17.8)</td>
<td>20.12 (7.50)</td>
<td>0.003</td>
</tr>
<tr>
<td>Beck Anxiety Inventory score</td>
<td>9.55 (6.31)</td>
<td>3.16 (5.00)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Beck Depression Inventory score</td>
<td>10.6 (7.71)</td>
<td>4.42 (4.38)</td>
<td>0.001</td>
</tr>
<tr>
<td>Insomnia Severity Index score</td>
<td>7.74 (5.08)</td>
<td>3.92 (4.24)</td>
<td>0.003</td>
</tr>
<tr>
<td>Perceived Stress Scale score</td>
<td>6.95 (3.85)</td>
<td>7.29 (2.71)</td>
<td>0.542</td>
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</table>
Poster #NM5
PREVALENCE AND IMPACT OF GLOBAL POLYURIA: RESULTS FROM THE SYMPTOMS OF LOWER URINARY TRACT DYSFUNCTION RESEARCH NETWORK (LURN) STUDY
J. Quentin Clemens, MD1, Jonathan B. Wiseman, MS2, Abigail R. Smith, PhD2, Cindy L. Amundsen, MD3, Claire C. Yang, MD4, Megan S. Bradley, MD2, Ziya Kirkali, MD5 and Anne P. Cameron, MD, and the LURN Study Group1
1University of Michigan, Ann Arbor, MI; 2Arbor Research Collaborative for Health, Ann Arbor, MI; 3Duke University Medical Center, Durham, NC; 4University of Washington, Seattle, WA; 5National Institute of Diabetes and Digestive and Kidney Diseases, Bethesda, MD
Presented By: J. Quentin Clemens, MD

Introduction: Global polyuria (GP) is a potential cause of lower urinary tract symptoms (LUTS), but the prevalence and impact of the condition is not well defined.

Methods: Cross-sectional baseline data were obtained from the LURN Observational Cohort study, a prospective study of men and women seeking treatment for LUTS. All participants completed a 3-day voiding diary, as well as the AUA-SI, and the LUTS Tool. Those with urologic pain conditions, incomplete bladder diaries or pelvic malignancy were excluded. GP was defined as >40mL/kg of urine output per 24h. Polydipsia was defined as >3L fluid intake per 24 hours. Demographic and clinical characteristics of participants with and without GP were compared using Wilcoxon two-sample tests and chi-square tests.

Results: Of the 511 LURN participants (285 men, 226 women), GP was present in 16% (n=79), and was significantly more common in women (65.8% of participants with GP were female, p<0.001) and those with polydipsia (41.8% of participants with GP had polydipsia, p<0.001). The median age and body mass index (BMI) was significantly lower for those with GP (63 vs. 59, p=0.035 and 29.2 vs. 26.3, p<0.001, respectively), while the 24-hour voiding frequency, 24-hour voided volume (L), and daytime voiding frequency were significantly higher for those with GP (9.0 vs. 8.3, p<0.001; 2.9 vs. 1.6, p<0.001; and 8.3 vs. 7.7, p<0.001, respectively). There were no significant differences in race, diabetic status, AUA-SI score, presence of urgency urinary incontinence (UUI) and nocturia episodes between those with and without GP.

Conclusion: GP is common in patients presenting with LUTS, and is significantly associated with younger age, lower BMI, higher 24-hour voiding frequency, and higher daytime frequency. GP was also more common in females and those with polydipsia.

Funding provided by grants from NIH/NIDDK

<table>
<thead>
<tr>
<th>Age (Median, IQR)</th>
<th>63.0 (54.4-70.2)</th>
<th>59.0 (51.3-68.4)</th>
<th>0.035</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sex [% [N] Male]</td>
<td>59.7% (256)</td>
<td>34.2% (27)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Race [% [N] White]</td>
<td>85.1% (354)</td>
<td>86.7% (75)</td>
<td>0.892</td>
</tr>
<tr>
<td>BMI (Median, IQR)</td>
<td>29.2 (25.8-33.7)</td>
<td>26.3 (22.4-30.1)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Diabetes [% [N]]</td>
<td>16.6% (71)</td>
<td>16.5% (13)</td>
<td>0.983</td>
</tr>
<tr>
<td>Polydipsia [% [N]]</td>
<td>13.6% (58)</td>
<td>41.8% (33)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>UUI [% [N]]</td>
<td>44.7% (173)</td>
<td>52.1% (38)</td>
<td>0.248</td>
</tr>
<tr>
<td>AUA-SI score (Median, IQR)</td>
<td>12.0 (8.0-18.0)</td>
<td>13.0 (8.0-18.0)</td>
<td>0.909</td>
</tr>
<tr>
<td>24-hour voiding frequency (Median, IQR)</td>
<td>8.3 (6.7-10.3)</td>
<td>9.0 (8.0-11.3)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>24-hour voided volume L (Median, IQR)</td>
<td>1.6 (1.2-2.0)</td>
<td>2.9 (2.4-3.5)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Daytime voiding frequency (Median, IQR)</td>
<td>7.7 (6.3-9.3)</td>
<td>8.3 (7.3-10.3)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Nocturia episodes (Median, IQR)</td>
<td>1.0 (0.0-2.0)</td>
<td>1.0 (1.0-2.0)</td>
<td>0.190</td>
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Poster #NM6
HUMAN PAPILLOMA VIRUS INFECTION IS ASSOCIATED WITH INCREASED IRRITATIVE LOWER URINARY TRACT SYMPTOMS IN WOMEN
Michelle Kim, MD, PhD1 and Evgeniy Kreydin, MD2
1Boston, MA; 2Los Angeles, CA
Presented By: Michelle Kim, MD, PhD

Introduction: Viral infections are a well-known, albeit rare, cause of voiding dysfunction. Human immunodeficiency virus and varicella zoster virus infections have both been associated with lower urinary tract symptoms (LUTS). However, the relationship between voiding dysfunction and human papillomavirus (HPV), one of the most prevalent genital viral pathogens, has not been previously assessed. Therefore, the purpose of this study was to determine whether genital infection with HPV was associated with LUTS in females.

Methods: Data were analyzed for 4520 females between the ages of 18 and 59 who underwent vaginal swab analysis for 37 HPV genotypes as part of the 2006-2012 cycles of the National Health and Nutrition Examination Survey. HPV infection was designated either low risk (if any of the 11 most common low-risk types were present) or high risk (if any of the 14 most common high-risk types were present). Associations between HPV infection and self-reported stress incontinence, urge incontinence and nocturia were assessed using weighted variance-corrected logistic regression models adjusted for age, body mass index, diabetes, race and parity.

Results: Infection with low-risk HPV genotypes was associated with increased likelihood of nocturia (OR 1.25, 95%CI 1.07-1.46) and urge incontinence (OR 1.29, 95%CI 1.04-1.60), while infection with high-risk HPV genotypes was not associated with any LUTS. No association was found between stress incontinence and HPV infection.

Conclusion: This study demonstrates a novel association between low-risk genital HPV infection and irritative LUTS in females. No association between high-risk genotypes and LUTS were found. High- and low-risk HPV genotypes have distinct tissue tropism and proliferative properties and this may account for this difference. To our knowledge, association between HPV infection and LUTS in females has not been previously described. The presence of squamous epithelium in the urethra and latency of HPV DNA in human urine suggests a site of infection and hypothetical mechanism for such an association.

Source of Funding: None

Poster #NM7
WITHDRAWN
OUTCOMES OF PELVIC FLOOR PHYSICAL THERAPY IN THE TREATMENT OF LEVATOR SPASM AND VOIDING DYSFUNCTION
Diana Kakos, BS, Vicki Irish, CNP, Mireya Diaz-Insua, PhD and Humphrey Atiemo, MD
Detroit, MI
Presented By: Diana Kakos, -BS

Introduction: Pelvic Floor Physical Therapy (PFPT) is a validated, first line treatment for patients experiencing levator spasm (LS) and voiding dysfunction (VD); however, few studies have characterized the success rate of PFPT or barriers to treatment. This study aims to expand the scientific knowledge regarding the outcomes and utilization of PFPT for LS and VD, and to examine barriers to patient compliance with treatment regimens.

Methods: A retrospective chart review was performed for all female patients diagnosed with LS and VD between January 2012 and December 2016. Patients seen by providers other than the Principal Investigator (PI), who received physical therapy services outside of a Henry Ford Facility, or who were under 18 years old were excluded. The incidence of referrals and completion rates of PFPT were recorded. Patient assessed outcomes using validated measures, the American Urological Association Symptom Score (AUASS), AUASS Quality of Life (QOL), the Michigan Incontinence Symptoms Index (M-ISI), and M-ISI Bother were recorded before and after PFPT attendance. For those patients who did not attend or complete PFPT, barriers to treatment were recorded. Statistical significance of the change in the quality of life instruments was examined with the paired t-test.

Results: A total of 414 patients were included in the study. Of those, 249 (60%) were prescribed PFPT. 130 (52%) patients were compliant and attended PFPT. 61 (51%) patients completed PFPT. Patients who completed PFPT attended a mean of 6.1 ± 3.3 sessions. Data on 30 women who completed physical therapy was available. A significant improvement, illustrated by a decrease in baseline scores, was seen in AUASS (-6.2 ± 7.1 (n=30), p<0.001), AUASS QOL (-1.0 ± 1.5 (n=26), p<0.003), M-ISI (-5.3 ± 7.0 (n=25), p<0.001), and M-ISI Bother (-1.6 ± 1.5 (n=27), p<0.001). Patients listed transportation (n=15), financial barriers (n=14), and other medical issues (n=15) as barriers to attending and/or completing PFPT.

Conclusion: Patients diagnosed with LS and VD are significantly improved on validated urinary symptom scores after a mean of 6 PT sessions. The utilization of PFPT is about 60%, the compliance in attending PT is 52%, and 51% of patients complete PFPT. We have seen that transportation, financial barriers, and other health issues play a key role in preventing patients from attending and/or completing PFPT.
Poster #NM9
THE RISK OF COGNITIVE IMPAIRMENT IN PATIENTS STARTING ANTICHOLINERGIC MEDICATIONS FOR OVERACTIVE BLADDER: A PROSPECTIVE TRIAL
Shilpa Iyer, MD, MPH1, Carolyn Botros, DO2, Svjetlana Lozo, MD2, Joshua Eng, PhD2, Peter Sand, MD2, Janet Tomezsko, MD2, Sylvia Botros, MD, MSC1, Adam Gafni-Kane, MD, MSC1, Karen Sasso APN2 and Roger Goldberg, MD, MPH2
1The University of Chicago; 2North Shore University Health System
Presented By: Svjetlana Lozo, MD

Introduction: Anticholinergic medications have been associated with cognitive changes but with little data specific to overactive bladder (OAB) treatment. We aimed to assess cognitive changes in patients 6 months after starting anticholinergic therapy for OAB.

Methods: We present a prospective cohort study assessing changes in cognition in patients seen in a urogynecology practice who started oxybutynin for OAB compared to patients not on anticholinergic OAB medications. The primary outcome measure was change in Montreal Cognitive Assessment screening scores (MOCA). Patients were enrolled from March 2015-June 2017. At enrollment patients completed a MOCA screening, a Geriatric Depression Screen (GDS), assessment of medications to create an anticholinergic burden score (ACB), and an assessment of medical problems. At follow-up visits patients were administered a MOCA, GDS, and a review of their medications at 1, 3, and 6 months after enrollment. Exclusion criteria included not speaking English. Statistical analysis was done using a linear mixed effects model taking into account correlated error terms given multiple MOCA assessments at various time points per patient.

Results: 106 patients were enrolled, 60 in the OAB group and 46 in the control group. There was no difference in age, race, or education between groups. Patients were followed for 6 months with a mean of 2.5 visits with no difference between the groups. 24 (23.6%) patients in the OAB group and 23 patients (50%) in the control group only completed the baseline assessment and either dropped out of the study or were lost to follow-up. In the OAB group 90% (54) of patients took medications for at least 1 month. Over time there was no difference in change in MOCA scores between the OAB and control groups when controlling for age, GDS score, and ACB score (p= 0.86). This association did not change when patients with a neurological diagnosis were excluded (n= 6). On average the control group’s linear change in the MOCA score was -0.11 points less than the OAB group (CI -0.18 - 0.03). For the entire cohort as GDS score increased MOCA score decreased -0.29 points (p=0.05, CI -0.59 -0.00). As age increased the MOCA score decreased -0.11 points (p= 0.003, CI -0.18 - -0.04).

Conclusion: While cognitive decline has been associated with anticholinergic medications, our study followed patients for 6 months with no changes found in MOCA scores after controlling for age, depression, and polypharmacy with the ACB score.
Poster #NM10
ARE COMPLETE THREE-DAY VOIDING DIARIES FEASIBLE? RESULTS FROM THE SYMPTOMS OF LOWER URINARY TRACT DYSFUNCTION RESEARCH NETWORK (LURN) COHORT
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Presented By: Anne Pelletier Cameron, MD, FPMRS

Introduction: Voiding diaries are a diagnostic tool and a rich source of relatively objective data on voiding habits. However, these diaries require significant patient effort to complete, which can result in missing data. The aim of this study is to assess the completeness of three-day voiding diaries in care-seeking patients.

Methods: Men and women with lower urinary tract symptoms in the LURN Observational Cohort study at six U.S. tertiary care sites were given a 3-day voiding diary. Patients were provided with written and verbal instructions, and were compensated for completing the diary. Diaries were assessed for completeness in addition to fluid intake versus output imbalances with ±2000ml considered physiologic over three days. A diary was defined as “complete” if it had three days of data, no missing intake volumes, and no missing voided volumes. Demographic and clinical characteristics for patients with and without “complete” bladder diaries were compared using Wilcoxon two-sample tests and chi-square tests.

Results: A total of 1,064 participants (519 men, 545 women) were enrolled and 87% (n=926) returned the bladder diary. Of the diaries returned, 94% (n=867) had data on 3 separate days, 91% (n=841) had no missing intake volumes, and 64% (n=594) had no missing voided volumes, resulting in 55% (n=511) of participants with 100% complete diaries. Among the complete diaries, 14% had three-day fluid deficit over 2000mL and 11% had over 2000mL fluid surplus. The fluid imbalance median was 148ml but ranged from +7941mL to -11830mL, and was higher in patients without UI (median 370mL vs. -89mL, p=0.030). Male participants had significantly more complete bladder diaries (66% vs. 46%, p<0.001), as did those without SUI compared to those with SUI (59% vs. 50%, p=0.020). There were no significant differences in diary completeness by age, race, education, employment status, marital status, presence of UUI, and presence of MUI.

Conclusion: Overall, 55% of LURN participants returned 3-day voiding diaries with perfectly complete data, with men being 20% more likely to achieve this. Patients had the greatest difficulty recording all voided volume and this was the most common reason for an incomplete voiding diary.

Funding provided by grants from NIH/NIDDK
Poster #NM11
PREVALENCE AND CORRELATES OF NOCTURIA IN THE LURN COHORT
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Presented By: J. Quentin Clemens, MD

Introduction: We determined the prevalence and severity of nocturia in a large clinical cohort of men and women from the Symptoms of Lower Urinary Tract Dysfunction Network (LURN). We additionally correlated nocturia severity with clinical and demographic characteristics and patient-reported bother.

Methods: Men and women with lower urinary tract symptoms (LUTS) were enrolled in an observational cohort study at six U.S. tertiary care sites. Those with urologic pain conditions or pelvic malignancy were excluded. At baseline, a 3-day voiding diary was completed. Bother due to nocturia was assessed by the LUTS Tool. Two definitions for nocturia were assessed: nocturia >1 and nocturia >2. Demographic and clinical characteristics of participants with and without nocturia were compared using Wilcoxon two-sample tests and chi-square tests.

Results: Of the 511 participants with complete diaries (285 men, 226 women), 40% documented nocturia >1 and 13% >2. Demographic and clinical characteristics of participants with nocturia >1 and nocturia >2 are presented in the Table. Nocturia >1 was more common in men than women, (p=0.003), and median age and intake volume were higher in those reporting nocturia >1 (p=0.008, p=0.02, respectively). Prevalence of nocturia >2 was not different between men and women and the median age did not differ between those with and without nocturia >2 (p=0.8). Average total daily intake was higher in participants reporting nocturia >2 (p=0.006). Race, BMI, diabetes, and self-reported sleep apnea did not differ between participants with and without nocturia >1 and nocturia >2. The proportion who were at least ‘somewhat’ bothered by nocturia was 70% for nocturia >1, and 85% for nocturia >2.

Conclusion: Nocturia was relatively common in this treatment seeking cohort, and was associated with older age and higher average daily intake. Based on LUTS Tool responses, most participants were bothered by their nocturia symptoms regardless of severity.

Funding provided by grants from the NIH/NIDDK

<table>
<thead>
<tr>
<th></th>
<th>Nocturia = 0 (n=306)</th>
<th>Nocturia ≥1 (n=205)</th>
<th>p-value</th>
<th>Nocturia ≥2 (n=65)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (Median, IQR)</td>
<td>62 (51-69)</td>
<td>65 (56-71)</td>
<td>0.008</td>
<td>65 (54-70)</td>
<td>0.805</td>
</tr>
<tr>
<td>Sex (% M) Male</td>
<td>59% (154)</td>
<td>64% (133)</td>
<td>0.003</td>
<td>66% (43)</td>
<td>0.071</td>
</tr>
<tr>
<td>Race (% N White)</td>
<td>84% (246)</td>
<td>88% (179)</td>
<td>0.124</td>
<td>86% (53)</td>
<td>0.895</td>
</tr>
<tr>
<td>BMI (Median, IQR)</td>
<td>29 (26-33)</td>
<td>39 (26-34)</td>
<td>0.454</td>
<td>30 (25-32)</td>
<td>0.937</td>
</tr>
<tr>
<td>Diabetes (% N)</td>
<td>14% (44)</td>
<td>20% (40)</td>
<td>0.129</td>
<td>18% (12)</td>
<td>0.643</td>
</tr>
<tr>
<td>Sleep Apnea (% N)</td>
<td>24% (73)</td>
<td>22% (44)</td>
<td>0.521</td>
<td>17% (11)</td>
<td>0.210</td>
</tr>
<tr>
<td>Average Daily Intake (L, Median IQR)</td>
<td>1.7 (1.3-2.2)</td>
<td>1.9 (1.5-2.4)</td>
<td>0.023</td>
<td>2.0 (1.5-2.5)</td>
<td>0.005</td>
</tr>
</tbody>
</table>
Poster #NM12
SYSTEMIC REVIEW OF THE BURDEN OF ILLNESS IN OVERACTIVE BLADDER
Ramesh Chandra Pandey, PhD¹, Lloyd Chen, BA², Kalyani Jekkaraju, BA¹, Manishi Prasad MPH, MBA² and Paul N. Mudd Jr., Pharm D, MBA²
¹WNS Global Services, Mumbai, India; ²Roivant Sciences, Inc. on behalf of Urovant Sciences, Inc., a wholly-owned member of the Roivant family of companies, New York, NY
Presented By: Lloyd Chen, BA

Introduction: Overactive bladder (OAB) is a disease characterized by urinary urgency, frequency, and incontinence in the absence of infection or other pathology. OAB significantly decreases patients’ health-related quality of life (HRQL) in comparison to the general population and accounts for substantial increased costs to the health care system and society. The aim of this study is to review and summarize the humanistic, economic, and clinical burden of OAB.

Methods: A comprehensive review of English language literature from 2007-2017 was performed in PubMed and Science Direct using keywords related to OAB burden of illness. Relevant abstracts from major urology conferences from 2014-2017 were also screened. Only studies primarily focused on OAB were included.

Results: Of the >1500 abstracts screened, 144 journal articles and 38 conference abstracts were included for review and analysis. HRQL in OAB patients is most impaired by sleep disruption, disease concerns, social embarrassment, and behavior modification to cope with incontinence, as measured by the King’s Health Questionnaire and OAB questionnaire. Current standard of care is inadequate: at least two-thirds of treated patients are dissatisfied with current therapies due to lack of efficacy and side effects. Estimates for US national costs range from $24.9-65.9 billion; one study assessed an average per patient per annum burden of $1,925. Cost sensitivity stems from direct medical (nursing home costs, specialty care physician visits), loss of productivity, and out of pocket costs on incontinence supplies (e.g., bed pads, incontinence pads, etc.). On average, clinical burden of OAB per-patient per-year versus general population manifests as 5.71 more outpatient visits (p<0.001); 3.72 more diagnostic tests (p<0.001); and 30% higher hospitalization rates. The rate of OAB-related surgery was nearly 3 times higher for wet versus dry OAB (5.9% vs 2.2%; p<0.001).

Conclusion: This review documents the high burden of illness from OAB for patients and healthcare systems. Challenges for patients include inadequate and expensive medications, symptom burden, decreased productivity, and significant direct and indirect economic costs.

Source of funding: This study was funded by Roivant Sciences, Inc.
SAFETY AND EFFICACY OF ONABOTULINUMTOXIN A INJECTIONS IN THE SETTING OF SUPRAPUBIC CATHETERS
Laura L. Giusto, MD¹, Patricia M. Zahner, MD², Jessica C. Lloyd, MD², Juan M. Guzman-Negron, MD², Shree Agrawal, BS², Courtenay K. Moore, MD², Raymond R. Rackley, MD², Sandip P. Vasavada, MD² and Howard B. Goldman, MD²
¹Cleveland Clinic Foundation, Cleveland, Ohio; ²Cleveland, Ohio
Presented By: Laura L. Giusto, MD

Introduction: In patients with suprapubic tubes (SPTs), complaints of urinary leakage per urethra or around the tube are common, and are often refractory to medical therapy. Intradetrusor onabotulinumtoxinA (BTX-A) injection is considered a “next step” for these patients. However, potential benefit must be balanced with risk factors inherent to patients with indwelling catheters including bacterial colonization and chronic inflammatory changes to bladder mucosa. We assessed the use of intradetrusor BTX-A in the setting of existing or concomitant SPT as a safe way to decrease urinary leakage.

Methods: Patients undergoing BTX-A injection with SPT in situ or concomitant SPT placement were retrospectively reviewed with CPT codes. Clinical characteristics were pre-procedure urinalysis and urine culture, peri-procedural use of antibiotics, with outcomes considered as complications (30 day post-procedure urinary tract infection (UTI), bleeding, retention or hospitalization), and degree of perceived improvement. Patient characteristics were assessed by chi-square or t-test analyses and outcomes were assessed by univariable and multivariable logistic regression models.

Results: Fifty patients underwent BTX-A injection in the setting of SPT, 43 (86%) of whom were female. Mean age was 59 years and mean BMI was 30.1 kg/m². Common overlapping indications for BTX-A injection were neurogenic bladder (86%) and incontinence (52%). Pre-procedural urine cultures were positive at time of injection among 56% of patients. Nearly all patients received documented peri-procedural antibiotics (96%) and 44% received a post-procedure antibiotic course. Positive preoperative urine culture correlated to increased likelihood of prescribed post-procedure antibiotics (OR: 3.56, p=0.04). Complications occurred in 5 patients (10%), with UTI (4/5) and hematuria (4/5) being most common. One of the patients required re-hospitalization and intravenous antibiotics for their UTI, and another required re-hospitalization for clot evacuation. Following first BTX-A injection, 44 (88%) reported a subjective improvement of reduced leakage and went on to receive an average of 4 BTX-A therapies (p = 0.03). The mean number of BTX-A treatments was 3.26 (range 1-12).

Conclusion: Intradetrusor BTX-A injection appears to be safe and efficacious in patients with SPTs, with the most common complication being UTI. This therapy may be considered for diminishing urinary leakage in this challenging-to-manage population.
ONABOTULINUM TOXIN INJECTION TO TREAT DESD IN PATIENTS WITH CEREBRAL PALSY

Wade Bushman, MD, PhD and Ruthie Su, MD

Madison, WI

Presented By: Ruthie Rebecca Su, MD

Introduction: Individuals with cerebral palsy (CP) may present during adulthood with signs or symptoms of bladder dysfunction due to spasticity of the pelvic floor and/or detrusor external sphincter dyssynergia. A conservative approach that avoids catheterization and tolerates infrequent voiding for as long as socially and medically possible has been advocated. The objective is to describe our experience with onabotulinum injection to the external sphincter in individuals with cerebral palsy and detrusor external sphincter dyssynergia.

Methods: With IRB approval, we identified patients treated at University of Wisconsin Hospital and Clinics between Jan 1, 2006 and Jan 1, 2017 with infantile cerebral palsy (ICD-9 343, ICD-10 G80) and onabotulinum injection of the external sphincter (CPT 52287). Severity of CP was assessed based on wheelchair dependence, ability to communicate and institutionalization. Presenting symptoms, urodynamic findings, and treatment were extracted from chart review. Patient/caregiver report of symptoms and post-void residuals were recorded during follow-up. All patients were treated with 100 units of onabotulinum injected in four quadrants of the external sphincter with local anesthesia. Injections were repeated at intervals of 6 months to 1 year.

Results: Seven patients, 5 males and 2 females, with CP and DESD were treated during the study period. Six (87%) were institutionalized, non-verbal, and completely dependent on caregivers. The median age was 34 years old (range 24-79 years old). Median length of follow-up was 1.9 years (range 0.3-8.0 years). Four patients (57%) presented with incomplete emptying and, of these, three had had indwelling catheters. Four patients presented with recurrent UTI. All patients had evidence of detrusor overactivity and DESD during voiding. After onabotulinum injection, no patient required indwelling or intermittent catheterization. The three patients with indwelling catheters were able to void spontaneously. Patients with recurrent UTI reported a reduction in frequency of UTI. Two patients (29%) presenting with bilateral hydronephrosis exhibited improvement or resolution on follow-up ultrasound.

Conclusion: Onabotulinum injection to the external sphincter is an effective intervention to relieve catheter dependence, decrease frequency of UTI and protect the upper tract in patients with CP and DESD.
Poster #NM15
INCONTINENT ILEOVESICOSTOMY FOR NEUROGENIC BLADDER DYSFUNCTION: LONG TERM CLINICAL AND URODYNAMIC PATIENT OUTCOMES
Mihir Shah, MD, Ali Syed, MD, Alana Murphy, MD, Akhil Das, MD and Patrick Shenot, MD
Thomas Jefferson University Hospital, Sidney Kimmel Medical School, Philadelphia, PA
Presented By: Mihir Shah, MD

Introduction: Ileovesicostomy is useful in patients with severe lower urinary tract dysfunction who are unwilling or unable to perform intermittent catheterization or are refractory to medical therapy. We evaluated the long term urodynamic outcomes changes in bladder management in a series of patients treated with ileovesicostomy for neurogenic bladder dysfunction.

Methods: We retrospectively reviewed the charts of 19 men and 12 women with a mean age of 44.9 years who underwent incontinent ileovesicostomy at our institution between 1992 and 2002. Mean follow-up was 156 months (range 126-183 months). We compared detrusor leak point (DLPP) preoperatively and postoperatively and determined long-term urinary tract management.

Results: Two male patient underwent conversion of the incontinent ileovesicostomy to ileocystoplasty using the same segment of bowel and now manage their bladder by intermittent catheterization. These patients were excluded from analysis.

Three female patient underwent conversion to ileal conduit at a mean of 2.1 years after initial ileovesicostomy due to urethral incontinence. DLPP was less than 20 cm H2O in all of these patients.

Urodynamics study (UDS) was performed in the remaining 26 patients with at least one UDS performed a minimum of ten years after initial ileovesicostomy. Initial DLPP in this cohort was 68 +/- 21 cm H2O. With an extended follow-up of greater than ten years, DLPP on last follow-up was 12 +/- 4 cm H2O.

Of these 26 patients, intermittent catheterization is utilized at least once daily due to stasis with recurrent UTI (6/26 patients) and UTI with mild hydronephrosis in (2/26 patients). All of these patients have functioning ileovesicostomy with a DLPP of less than 20 cm H2O.

Conclusion: In this series of patients with ileovesicostomy, nearly 40% of patients will require the addition of intermittent catheterization after ten years despite low pressure drainage of the bladder through a functioning ileovesicostomy. We hypothesize that complications such as recurrent urinary tract infections are in part related to urinary stasis within the bladder and that although low pressure storage is achieved, there remains a significant residual urine within the bladder.

Funding: None
Poster #NM16
BASELINE DEMOGRAPHIC CHARACTERISTICS OF A CONTEMPORARY NATIONAL SPINAL CORD INJURED POPULATION: THE NBRG SCI REGISTRY
Sara Lenherr, MD, MS1, John Stoffel, MD2, Sean Elliott, MD, MS3, Darshan Patel, MD1, Amitabh Jha, MD, MPH1, Angela Presson, PhD, MS1, Chong Zhang, MS1, Jeffrey Rosenbluth, MD, MPH1, Blayne Welk, MD, MSc4 and Jeremy Myers, MD1
1University of Utah, Salt Lake City, UT; 2University of Michigan, Ann Arbor, MI; 3University of Minnesota, Minneapolis, MN; 4Western University, London, Ontario, Canada
Presented By: Sara M. Lenherr, MD, MS

Introduction: Patients with spinal cord injury (SCI) are a diverse population rarely characterized outside the setting of administrative data or participation in specialty SCI centers. The Neurogenic Bladder Research Group (NBRG) SCI Registry was initiated to characterize a diverse, nation-wide population of people with SCI and their bladder-related quality of life. Here we describe the enrollment demographics of this population.

Methods: A multicenter prospective, observational study was conducted to ask spinal cord injury (SCI) patients about their quality of life (QoL) related to neurogenic bladder management. Participants were identified in clinic or via remote enrollment and demographics were obtained via telephone interview. Validated questionnaires assessing patient reported outcomes and quality of life were administrated electronically.

Results: 1479 participants completed baseline interview and electronic questionnaires. Mean age for the cohort was 44 ± 13 years with mean 16 ± 12 years since SCI. 40% of the cohort was female. 86% of the cohort was Caucasian. 25% of participants were identified via a clinic and 75% remotely. 35% were currently employed, 38% unable to work, 13% retired and 14% other employment status. 97% lived in a private residence (rather than a long-term care facility or nursing home). Participants resided in 49 states plus Canada. SCI level was: 54% paraplegia, 43% tetraplegia, and 3% unknown or other. Cause of SCI was described as 44% motor vehicle, 22% fall/diving, 13% medical disease and 21% other etiology. Current bladder management was identified as: 51% clean intermittent catheterization, 18% chronic indwelling catheter, 18% spontaneous voiding and 13% stoma or other urinary diversion. Additional parameters of interest include: 13% reported prior urolithiasis surgery (majority were bladder stones); 21% had botulinum toxin injection into the bladder; 12% report being hospitalized for a UTI in the last 12 months; 69% of the cohort identified as having chronic pain; 12% reported current marijuana use.

Conclusion: The NBRG SCI Registry represents the largest cohort of SCI people specifically designed to collect information regarding bladder-related quality of life in relation to other quality of life parameters. Further characterization of this cohort will enable patients and providers to understand more about QOL related to neurogenic bladder management after SCI.

Source of Funding: PCORI CER14092138
Poster #NM17

PATIENTS WITH MULTIPLE SCLEROSIS REPORT SIGNIFICANT BENEFITS FROM PERCUATNEOUS TIBIAL NERVE STIMULATION AND HAVE A HIGH RATES OF MAINTENANCE THERAPY

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Presented By: William T. Berg, MD

Introduction: Percutaneous tibial nerve stimulation (PTNS) has significant efficacy in the treatment of refractory non-neurogenic overactive bladder. Some studies that suggest PTNS may be efficacious for patients with multiple sclerosis (MS). There is limited data for the use of PTNS for neurogenic bladder symptoms. We sought to characterize our population of patients with MS undergoing PTNS and assess their therapeutic benefit and long term maintenance rates after completing 12 weekly sessions.

Methods: Our institutional review board approved PTNS database was queried for patients with MS. All patients underwent our standard PTNS protocol. Demographic and clinical data was collected and analyzed. Maintenance rates at 6 months and one year were tabulated. Maintenance rates were determined by patient symptoms and were tapered at 7 day intervals when possible. Patients were allowed to continue maintenance up to once per week.

Results: A total of 19 patients were identified. 79% of patients were responders, and 15 patients completed all 12 initial sessions of PTNS. 12 patients (63%) went on to maintenance therapy. No adverse events were recorded. The mean number of maintenance sessions completed at 6 months was 9.25 (SD 4.8) and 14.3 at 12 months. Maintenance therapy consisted of sessions on average every 2.6 weeks over the first 6 months and every 3.6 weeks over the course of a year. 6 patients continued maintenance therapy for over 12 months and 2 patients continued for over 2 years. 53% of patients discontinued their medications after starting PTNS. 2 patients went on to onabotulonium toxinA injection following PTNS. Post void residual rates on average improved from 106mL at baseline to 55mL after PTNS.

Conclusion: Our cohort of MS patients report significant improvements in subjective voiding symptoms with PTNS. Additionally, they tend to have high rates of maintenance therapy, with some demonstrating a durable long term response over 2 years. Future controlled trials are necessary to quantify the effects of neuromodulation on neurogenic bladder lower urinary tract dysfunction.

Source of funding: None
Poster #NM18
VOIDING SYMPTOMS AND URODYNAMICS FINDINGS IN ADULT DIAGNOSED TETHERED CORD
Lauren Bakios, MD, Madeline Cancian, MD, Petra Klinge, MD, Pradeep Chopra, MD and Janice Santos-Cortes, MD
Warren Alpert Medical School, Providence, RI
Presented By: Lauren Bakios, MD

Introduction: Tethered cord (TC) is an abnormality of the spinal cord, which can result in back pain, difficulty walking, fecal incontinence, and changes in bladder function. Also known as closed spinal dysraphism (CSD), it is on the spectrum of spina bifida. TC typically presents during childhood, and is classically diagnosed by lumbar MRI. However, there is a wide spectrum of disease and some patients can present as adults. Patients with clinical symptoms suggestive of TC and non-diagnostic radiological findings are designated as having occult tethered cord syndrome (OTC). OTC is frequently seen in Ehlers-Danlos syndrome (EDS) and can be present in other syndromes like Chiari Malformation. Urodynamics (UDS) is emerging as a part of the work-up to diagnose these patients, as it is one of the few quantitative measures of neurologic symptoms. Many of these patients have urinary complaints, however the nature of these symptoms is not well described in the literature. Our aim was to describe urinary symptoms and UDS findings in patients with adult diagnosed tethered cord (ADTC).

Methods: We retrospectively reviewed charts of patients referred to an academic urology office from a single neurosurgeon for UDS as part of a work-up for ADTC between 1/2016 and 8/2017. We collected data on voiding symptoms at presentation and performed multichannel VideoUDS. All UDS were reviewed by a single urologist who was fellowship trained in female pelvic medicine and reconstructive surgery (FPMRS).

Results: 34 patients were referred to our clinic. 19 of these patients had MRI (1/19) or intraoperative findings (18/19) confirming TC. Of the 19 patients with confirmed TC, all had voiding complaints on presentation. The most common complaints were: frequency (63%), urgency (42%), and straining to void (37%). 3/19 (16%) ADTC patients had normal UDS findings, while 16/19 (84%) patients had abnormal UDS findings. UDS classifications consisted of: detrusor underactivity (DA) (37%), detrusor sphincter dyssynergia (37%), detrusor overactivity (10%), stress urinary incontinence (5%), primary bladder neck obstruction (5%), and acontractile bladder (5%).

Conclusion: Voiding symptoms are common in patients with ADTC. 84% of patients with ADTC had abnormal UDS findings – with DSD and DA being the most common abnormalities.
CHARACTERISTICS OF PATIENTS WITH CONGENITAL UROLOGIC DISEASES TRANSITIONING TO AN ADULT UROLOGIC CLINIC

Cyrus Adams, MD, MS, Casey Kowalik, MD, Joshua Cohn, MD, Sophia Delpe, MD, W. Stuart Reynolds, MD, MPH, Douglas Milam, MD, Roger Dmochowski, MD, John Brock, MD and Melissa Kaufman, MD, PhD
Vanderbilt University
Presented By: Cyrus M. Adams II, MS, MD

Introduction: Advances in healthcare have improved the long-term survival in patients with congenital disorders affecting the genitourinary tract. These patients are now routinely presenting to the adult Urologic clinic to establish care and often require complex coordination of care given the propensity for multiple comorbidities. We aim to characterize this growing complex patient population at the time of transition to the adult clinic.

Methods: We performed a retrospective chart review of patients with a diagnosis of neurogenic bladder, based on ICD codes, presenting to the adult Urology clinic. Inclusion criteria included a history of a congenital Urologic disorder. We identified 151 patients meeting inclusion criteria and examined the presenting demographic and clinical data. Health literacy was assessed via the Brief Health Literacy Screen (BHLS) with lower scores indicating poorer health literacy.

Results: The average age at presentation was 29.3 years and 42% had a BHLS score ≤9 (24/57), indicating poor health literacy. Patients lived an average distance of 81.5 (SD: 86.5) miles from the adult clinic. Nearly all (99%) patients had health insurance at the time of transition with 56% having federal assistance insurance. The most common congenital disorder was spinal dysraphism (72%, n=109), followed by cerebral palsy (12%, n=18), extrophy-epispadias complex (5%, n=7), and cloacal anomaly (4%, n=6). Sixty-two percent (n=93) had routine Pediatric Urology care prior to presentation, while 45% had undergone prior major reconstruction surgery and 72% were currently performing clean-intermittent catheterization. In terms of upper tract surveillance, 42% (n=63) of patients had no imaging, 59% (n=89) had no GFR measurement, and 40% (n=60) had neither within the previous 24 months.

Conclusion: Patients with congenital urologic disorders often present to the adult Urologic clinic after a lapse in urologic care and frequently without recent upper tract studies. This population also demonstrated other factors that may complicate their transition to an adult clinic, such as a low health literacy and long distance from the clinic.

Funding: None
Poster #NM20

FACTORS ASSOCIATED WITH DISCONTINUOUS FOLLOW-UP IN A UROLOGIC CONGENITAL POPULATION

Cyrus Adams, MD, MS, Casey Kowalik, MD, Joshua Cohn, MD, Sophia Delpe, MD, W. Stuart Reynolds, MD, MPH, Douglas Mlaim, MD, Roger Dmochowski, MD, John Brock, MD and Melissa Kaufman, MD, PhD
Vanderbilt University
Presented By: Cyrus M. Adams II, MS, MD

Introduction: Patients with complex genitourinary congenital defects require lifelong follow-up and the transition from pediatric to adult care represents a critical time. We hypothesize that a large number of adults with congenitalism present to the Urology clinic after a significant lapse in treatment or follow-up by any urologist and that there exist identifiable demographic risk factors associated with discontinuous follow up.

Methods: We performed a retrospective chart review of patients with a diagnosis of neurogenic bladder, based on ICD codes, presenting to the adult Urology clinic. Inclusion criteria included a history of a congenital Urologic disorder. We identified 151 patients meeting inclusion criteria, and demographic, health literacy, and clinical data on each patient was collected at the time of presentation.

Results: Of the 151 patients identified, 93 (61.6%) had received routine Pediatric Urology care prior to presentation. Patients without routine follow-up were older (34.9 v. 25.7, p<0.001) and more likely to have had no prior major genitourinary reconstruction (25.9%, v. 57%, p<0.001). Patients with Medicaid/Medicare were less likely to have had routine care by a Pediatric Urologist, compared to patients with private health insurance (p=0.007). There was no statistically significant difference in gender, basic health literacy score, and education level. Although not statistically significant, patients with discontinuous follow-up lived a longer average distance from the Adult Urology clinic (98.3 miles) compared to those followed routinely (71.0 miles) (p=0.059).

Conclusion: Patients with complex genitourinary congenital defects face multiple obstacles as they transition to adult care. Older age and federal assistance insurance were associated with barriers to routine follow up. Such information can be utilized for coordination and counseling to improve patient transition of care from Pediatric to Adult Urology.

Funding: None
Poster #NM21
DOES POST-VOID RESIDUAL URINE PREDICT SEVERITY OF VOIDING SYMPTOMS IN MULTIPLE SCLEROSIS PATIENTS?
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University of Michigan, Ann Arbor, Michigan
Presented By: Elizabeth Van Huffel Dray, MD

Introduction: The majority of patients with multiple sclerosis (MS) experience at least one moderate to severe urinary complaint and many MS patients also experience some degree of urinary retention. Our goal was to study how post-void residual (PVR) affected urinary quality of life in MS patients with symptomatic lower urinary tract symptoms (LUTS).

Methods: We performed an IRB approved retrospective review of MS patients with LUTS presenting to a tertiary neurourolology clinic. Patients who had a PVR recorded in our clinic, either catheterized or via ultrasound, were included in our analysis. Urinary symptom quality of life was assessed through the American Urological Association Symptom Score (AUA-SS), and the Michigan Incontinence Symptom Index (M-ISI). Chart review was performed for history of recurrent urinary tract infections (defined by ≥2 UTIs over 6 months or ≥3 UTIs over 1 year), demographics, type and duration of MS, use of disease-modifying therapy (DMT) and use of bladder antispasmodics or alpha-blocker therapy.

Results: Between 2014 and 2017, 104 patients with a diagnosis of MS underwent PVR assessment in our clinic. Average patient age was 56.37 years, 70.19% of patients were female and 83.58% were Caucasian. Relapsing-remitting MS was the most common type of disease (53.19%) followed by secondary-progressive (36.17%). Recurrent UTIs were reported in 26% of patients and 7.69% performed intermittent self-catheterization.

The average post-void residual was 123.41cc (range 0-650cc). Mean AUA score was 19.13 (moderate-severe symptoms) with an average bother score of 4.14 (mostly dissatisfied). Analysis of PVR as a continuous variable did not show an association between increasing PVR and increasing AUA SS or bother score (p=0.53 and 0.44 respectively). PVR tertiles for the cohort were <50ml (n=39), 50-150ml (n=30), greater than 150 (n=35). Average AUA SS by group were 17.96, 20.08, 19.74, AUA bother scores were 4.19, 4.29, 3.97 and M-ISI scores were 13.72, 12.69, 14.89. No relationship between AUA SS, bother score or M-ISI and PVR tertile was demonstrated (p=0.54, p=0.60 and p=0.57), and no correlation was found between increasing PVR and history of recurrent UTIs (p=0.55).

Conclusion: Our study did not demonstrate differences in reported urinary symptoms between MS patients based on PVR. Risk of recurrent UTI was likewise not correlated with increasing PVR. The role of PVR measurements in managing MS patients remains unclear.
**Poster #NM22**  
**IMPACT OF SPINAL CORD LEVEL OF INJURY ON URINARY SYMPTOMS AND QUALITY OF LIFE IN PATIENTS MANAGED WITH CLEAN INTERMITTENT CATHETERIZATION**  
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Presented By: Iryna Crescenze, MD

**Introduction:** Clean Intermittent Catheterization (CIC) is associated with fewer complications compared to indwelling catheters (IC). However, patients with higher spinal cord injury (SCI) levels have limited hand function and often are not able to perform CIC independently. This may affect patient’s satisfaction and urinary symptoms. The aim of this study is to describe bladder related symptoms and quality of life of patients on CIC at different levels of SCI.

**Methods:** A cohort of 1002 patients with SCI managed with either IC (urethral or SPT) or CIC was identified from a prospective multicenter observational cohort of SCI patients. The cohort was separated into 3 groups based on the level of injury: C4 and above (n=128), C4-C8 (n=288), T1 and below (n=586). Neurogenic Bladder Symptom Score (NBSS) questionnaire was used to evaluate patients self-reported neurogenic bladder symptoms and overall bladder related satisfaction.

**Results:** Mean age was 44.0+-13.0 years and 65.3% were male. Mean BMI was 26.5+-8.5 and Charleston Comorbidity Index (CCI) was 0.64+-1.05. The proportion of patients on CIC with injury at C4 and above, C5-C8, T1 and below was 46.9%, 58.3%, and 86.7%, respectively. The proportion of patients performing CIC independently was significantly lower with higher levels of injury (41.7%, 76.4%, and 98.7%; p=0.001). CIC was associated with significantly worse urinary symptoms as measured by total NBSS at all levels as compared to IC (Figure 1). Additionally, all patients with cervical injuries who had to rely on caregiver for CIC reported worse total NBSS outcomes (29.2+-11.0 vs. 23.9+-9.3, p<0.001).

**Conclusion:** CIC at all levels of injuries was associated with worse NBSS scores compared to IC and this difference was pronounced at levels C4 and above. Patient with higher cervical levels of injury are more likely to rely on caregiver for CIC and this is also associated with worse outcomes as measured by NBSS. Given these findings, the impact of CIC on urinary symptom burden for cervical SCI patients should be discussed prior to initiating CIC.

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Poster #NM23
RISK FACTORS FOR METABOLIC SYNDROME IN THE ADULT SPINA BIFIDA PATIENT
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Presented By: Stephanie J. Kielb, MD

Introduction: Spina bifida (SB) is one of the most common birth defects and 75-85 % of patients now reach adulthood. Preliminary studies have shown increased rates of obesity in these patients due to a combination of altered body composition and limited mobility. Traditional measures of body mass index are typically inaccurate to diagnose obesity in this population, and the prevalence of metabolic syndrome (MetS) is not known. We present the prevalence of risk factors for MetS in adult spina bifida patients compared to the general population (GP).

Methods: We performed a retrospective chart review of 210 adult spina bifida patients at a multidisciplinary SB clinic from 2007-2014. We analyzed individual rates of MetS risk factors in our study population and compared these to age-matched GP prevalence.

Results: Of 210 patients (121 female) mean age was 32.7 (20-80) years, with 171 (81.4 %) falling into the 20-39 range. 168 (80%) had BMI data, 199 (94 %) had blood pressure data, 68 (32.4%) had HgbA1c data, and 40 (19%) had lipid data. Compared with age-matched GP data, 74 (44%) versus 30 % GP met MetS criteria by BMI, 78 (39.2%) versus 11.9% GP were hypertensive, 11 (16.2%) versus 21 % GP were insulin resistant, and 28 (70%) versus 23 % GP were dyslipidemic.

Conclusion: Excluding insulin resistance, adult SB patients have a higher prevalence of risk factors for MetS than the general population. Given previously established inaccuracy of BMI measurements in SB patients, and our limited HgbA1c and lipid data, disease burden is almost certainly underestimated in this patient population. We are currently collecting waist circumference and additional metabolic parameters to further ascertain prevalence of MetS in this high-risk population. This preliminary data emphasize the necessity of comprehensive medical follow-up as these patients continue to come of age.
Poster #NM24
SIGNIFICANT INTERACTION EFFECTS BETWEEN PARAPLEGIC AND TETRAPLEGIC PATIENT REPORTED BLADDER FUNCTION AND QUALITY OF LIFE: AN ARGUMENT FOR EXAMINING THESE INJURIES SEPARATELY

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Presented By: Sara M. Lenherr, MD, MS

Introduction: Various factors affect how patients manage a neurogenic bladder after spinal cord injury (SCI) and self-perceived bladder-related quality of life (QoL). Examples include age, gender, time since SCI, injury completeness, neuropathic pain, and perhaps one of the most profound is the level of injury. We hypothesized that even when controlling for such factors, paraplegia and tetraplegia patients would differ in terms of bladder-related QoL according to their bladder management strategy (interaction effects).

Methods: The NBRG SCI registry is a multicenter prospective observational study designed to assess bladder-related QoL after SCI. Bladder management was categorized as: clean intermittent catheterization (CIC), indwelling catheter (IC), surgical (bladder augmentation, catheterizable channel, urinary diversion), or voiding (condom catheter, involuntary leaking, volitional). Outcomes included the Neurogenic Bladder Symptom Score (NBSS), three subdomains of the NBSS, and a global satisfaction with urinary function question. Multivariate linear regression was used, controlling for multiple factors and testing for interaction effects between SCI classification (paraplegic and tetraplegic) and bladder management method.

Results: There were 807 paraplegic and 611 tetraplegic participants. Mean age was 45 ± 13 years; mean time 16 ± 12 years since SCI; 40% were female. CIC was more prevalent in paraplegics (62% versus 36%). IC was less prevalent in paraplegics (10% versus 29%). With regard to the total NBSS, tetraplegic patients performing CIC had higher scores (+9%, p=0.001) compared to paraplegic patients, but there was no evidence of an interaction between diagnosis and management overall (p=0.08). In contrast, within all 3 subdomains of the NBSS, there were significant interaction effects between paraplegic and tetraplegic diagnoses (Incontinence subdomain p=0.01, Storage & Voiding subdomain p=0.044 and Consequences subdomain p=0.023. There was no interaction effect between level of injury and bladder management for the global satisfaction with urinary function question (p=0.27).

Conclusion: For all of the subdomains of the NBSS, there were significant interaction effects between the paraplegic and tetraplegic diagnosis across four common bladder management strategies. This suggests SCI classification influences response to bladder-related function even after controlling for other factors.

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Poster #NM25
REGIONAL VARIATION IN DIAGNOSTIC TESTING FOR OVERACTIVE BLADDER IN THE FEMALE MEDICARE POPULATION
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Presented By: Annah Vollstedt, MD

Introduction: Overactive bladder (OAB) remains a common urologic ailment with direct healthcare costs now exceeding billions annually. The American Urology Association (AUA) released the non-neurogenic OAB guideline in 2012 and amended the treatment section in 2014 in order to guide the diagnosis and management of this costly ailment. Per the guidelines, OAB is a clinical diagnosis requiring only a careful history, physical exam, and urinalysis. Additional work-up including post-void residual, urodynamics, cytology, and cystoscopy are not necessary in the otherwise uncomplicated patient. The purpose of this study is to determine rates of potentially unnecessary diagnostic testing in patients carrying an OAB diagnosis before and after the OAB guidelines publication.

Methods: Using the Dartmouth Institute’s Atlas Rate Generator exploring a 100% Medicare claims data sample, we identified females with a diagnosis of OAB by ICD-9 codes within 306 hospital referral regions (HRR). The sample includes patients seen by any provider who makes the diagnosis of OAB. Rates of diagnostic tests within HRR were compared to the national average adjusted by age and race.

Results: The national average rate for potentially unnecessary diagnostic procedures performed on patients with OAB was 41% (163,919/399,004) in 2011, and only slightly decreased to 38.2% (169,706/443,512) in 2014. Comparing HRRs to the national rate, use of diagnostic procedures demonstrated wide variation even after controlling for age and race for both years (Figure 1, 2). In 2011 the lowest rate was identified in Minot, ND (0.260) and the highest in Fort Myers, FL (2.036). By 2014, the lowest rate was identified in Rapid City, SD (0.304) and the highest again in Fort Myers, FL (2.37).

Conclusion: There is significant regional variation in the work up of OAB. Interestingly, the rates of diagnostic testing did not appear to change significantly after the publication of the AUA OAB guidelines. Further research is needed to identify how much of this diagnostic testing is inappropriate and to explore the relationship of diagnostic testing to management outcomes.
Poster #NM26
WHAT IS THE IDEAL ANTIBIOTIC PROPHYLAXIS FOR INTRAVESICAL BOTOX INJECTION? A COMPARISON OF TWO DIFFERENT REGIMENS
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Presented By: Justin Houman, MD

Introduction: Intravesical onabotulinum toxin A (Botox®) is an effective treatment for idiopathic detrusor overactivity, of which urinary tract infections (UTIs) are a common complication. We previously reported a UTI rate of 35.1% in patients who received a single IM dose of a third-generation cephalosporin at the time of Botox® injection. Given this high rate despite antibiotic prophylaxis, we sought to determine if a longer course of prophylactic oral antibiotics would decrease the rate of UTI following intravesical Botox® injection.

Methods: A retrospective review of two groups of patients undergoing intravesical Botox® injection was performed over a 55 month period. One group received an intramuscular (IM) dose of ceftriaxone at the time of Botox® injection and a second group received a three-day course of an oral fluoroquinolone starting the day before the procedure. All patients with a positive pre-procedure culture were treated with the appropriate antibiotic prior to injection. Data abstracted included age, BMI, history of diabetes, pre-procedure urine culture, and post-procedure urine culture. The rate of post-procedure UTI was examined using a χ² test. A secondary analysis was performed using logistic regression modeling to test the association between clinical characteristics and antibiotic regimen and risk of post-procedure UTI.

Results: Botox® injections were performed on 284 patients during the study period: 236 patients received a single IM dose of ceftriaxone and 48 patients received three days of an oral fluoroquinolone. There was no difference in the baseline age, BMI, diabetes, or rate of pre-procedure positive culture between the two cohorts. Overall, the UTI rate was significantly lower in the fluoroquinolone group (20.8%) vs. the cephalosporin group (36%), p=0.04. Predictors of post-procedure UTI included single IM dose of antibiotics (OR 2.80, 95% CI 1.2-6.5, p=0.016) and a positive pre-procedure urine culture (OR 1.31, 95% CI 1.03-1.66, p=0.027).

Conclusion: In our series comparing two different antibiotic prophylaxis regimens for Botox® injection, we found a significantly lower rate of UTI when patients received a three-day course of an oral fluoroquinolone as opposed to a single IM dose of a third-generation cephalosporin. Patients at high risk for UTI, especially those with a positive pre-procedure culture, may benefit from an even longer duration of antibiotics at the time of Botox® injection.
Poster #NM27

PATIENT PERCEPTIONS OF CHAPERONES DURING INTIMATE EXAMS AND PROCEDURES IN UROLOGY CLINIC
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Presented By: Julia Han, MD

Introduction: The current literature concerning chaperones comes from the perspective of the medical professional. However, in an era of patient centered care it is important to understand patient perceptions, expectations, and preferences. The objective of our study was to survey patients regarding their expectations and preferences regarding intimate exams and procedures in the outpatient urology clinic.

Methods: We surveyed patients in the outpatient urology clinic regarding demographics, expectations, and preferences regarding the use of chaperones through a survey. Inclusion criteria: patients 18 years of age or older who were able to read English and understand informed consent. We had one study group with qualitative data using a 16 item survey written at a middle school reading level which was administered August 2016 to July 2017.

Results: We collected data from 200 patients (52% male, 48% female), average age 61 years. Most patients were Caucasian (85%), had completed some college (31%), and were married (52%). Most were not healthcare professionals (89%). Most patients have had a prior genitourinary procedure (69%) of which 62% did not have a chaperone. Of the 38% that did have chaperones, 71% preferred to not have had one. Most patients did not care if they had a chaperone (55%) but women were likely to prefer a chaperone over men. Majority of patients (87%) did not care about the gender of the chaperone but cited the two most important factors as the comfort level with the provider (53%) and how invasive the exam or procedure was (36%). For patients that preferred a chaperone, 36% preferred to have a clinic nurse or other member of the healthcare team serve the role with no preference of gender and 35% preferred to use a family member or friend. Majority of both males (88%) and females (91%) felt that they should have the right to refuse a chaperone.

Conclusion: In our study most patients felt that they should have the right to refuse the use of a chaperone during an intimate exam or procedure. The overriding factor that was in a patient’s decision regarding the use of a chaperone was the comfort level with the provider which trumped gender of provider, invasiveness of exam, and who the chaperone was. The use of chaperones during intimate exams and procedures is routine in many institutions due to medicolegal issues. In an era of patient centered care, it is crucial to understand patient preference and expectations.
Poster #NM28
PLACEMENT OF MID-URETHRAL MESH SLINGS AT THE TIME OF VAGINAL PROLAPSE REPAIR DOES NOT AFFECT POST-OPERATIVE SEXUAL FUNCTION OR ORGASM
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Presented By: Laura Nguyen, MD

Introduction: The clitoris’ complex innervation and vascular supply runs laterally to urethra and in the anterior vaginal wall. Dissection for placement of mesh mid-urethral slings has been hypothesized to disrupt the nerves and clitoral erectile tissue, negatively impacting orgasmic function, despite previously reported overall improvement in sexual satisfaction following sling procedures. We aimed to analyze the role of slings in orgasmic and overall sexual function in patients undergoing vaginal prolapse surgery.

Methods: We reviewed women that had vaginal prolapse surgery from 2008 to 2014 and were enrolled in our prospective longitudinal database. Demographic data and Pelvic Organ Prolapse Incontinence Sexual Questionnaires (PISQ) at baseline, six months, and one year were compared with Pearson’s Chi-square, Fisher’s Exact and Wilcoxon rank tests.

Results: Of 157 women that had vaginal prolapse surgery, 81 (52%) had concomitant mesh sling placement. Mean ages were 63 and 66 years in patients who did and did not have slings placed, respectively (p=0.06). No demographic differences between groups were seen. Mean baseline PISQ scores were 32 in both groups (p=0.98). Similar proportions in the sling/no sling groups were sexually active at baseline (40/80, 50% vs. 30/75, 40%; p=0.21), but sling patients had a lower rate of dyspareunia (13/34, 38% vs. 5/41, 12%; p=0.04). PISQ scores did not differ at six months (p=0.96) or one year (p=0.65). However, in patients who had slings, improvements in mean overall PISQ scores were statistically significant at six months (p=0.05) and one year (p<0.01), though these changes did not meet the minimum important difference. Mean overall PISQ scores did not significantly improve in patients who did not have slings (six months p=0.10, one year p=0.15). Orgasm frequency was not significantly different between sling/no sling groups at six months (p=0.39) or one year (p=0.11). Orgasm intensity also did not differ between groups at six months (p=0.91) or one year (p=0.44).

Conclusion: Sling placement at the time of vaginal prolapse repair did not affect orgasmic function or overall sexual function or sexual satisfaction in our patients. PISQ scores improved after prolapse surgery in patients who had sling placement, though change may not be clinically significant.

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Poster #NM29
SYNTHETIC MID-URETHRAL SLING COMPLICATIONS: EVOLUTION OF PRESENTING SYMPTOMS OVER TIME
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Presented By: Connie Nan Wang

Introduction: To study the evolution of type of presenting symptoms after mid-urethral sling (MUS) placement relative to the time course between this placement and subsequent removal for complication(s).

Methods: An IRB-approved, prospectively maintained database of women who underwent synthetic sling removal (SSR) was retrospectively reviewed. Demographic information, history of chronic pain syndromes and recurrent urinary tract infection (RUTI), history of prior anti-incontinence surgeries and prolapse repairs, and interval between MUS placement and SSR were recorded. Patient’s presenting symptoms for MUS-related complications included storage dysfunction, voiding dysfunction, RUTI, vaginal pain, non-vaginal pain, mesh exposure, and urinary incontinence (UI) and were tallied from an electronic medical record (EPIC). Number and nature of these presenting symptoms were compared between patients divided into 2 and 4-year intervals between MUS placement and presentation for SSR. We tested the hypothesis that early presentation groups would have higher rates of mesh exposure and pain and/or dyspareunia complaints whereas late presentation groups would have higher rates of UTI and UI complaints.

Results: Between 2005 and 2017, 278/435 women met study criteria. Overall, mean number of presenting symptoms per patient was 3.8 ± 1.4. Mean number of presenting symptoms per patient increased significantly over time since MUS placement (p = 0.0010). Amongst the 2-year interval groups, there was a significant difference over time between number of patients presenting with RUTI (p = 0.0095), vaginal pain (p = 0.0289), and UI (p = 0.0327) (See Table). Between the 4-year interval groups, there was a significant difference over time between number of patients presenting with RUTI (p = 0.0039), non-vaginal pain (p = 0.0106) and vaginal pain (p = 0.0463).

Conclusion: In our tertiary care center, women with MUS-related complications presented with multiple symptoms that increased in number over time and evolved in relation to interval between MUS placement and presentation. A higher rate of pain complaints was noted earlier whereas a higher rate of UI and RUTI was observed in the later groups.
Poster #NM30

THE EFFECT OF SURGEON VOLUME ON PERIOPERATIVE OUTCOMES FOR MID-URETHRAL SLING SURGERY

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Presented By: Jacqueline M. Speed, MD

Introduction: Higher surgical volume is associated with decreased costs, complication rates, and length of stay in many urologic procedures. It is unclear if surgeon volume is an important predictor of perioperative outcomes in mid-urethral sling (MUS) placement.

Methods: We utilized the Premier Healthcare Database, a national hospital discharge database representing 700 non-federal US hospitals, to identify patients who underwent MUS placement 2003-2015. Those undergoing concomitant procedures or who received mini-slings were excluded. Patients were stratified by their surgeon’s volume. Low, intermediate, and high volume were defined as <4, 4-9, and >9 MUS procedures per year, respectively. We examined patient demographics, Charlson comorbidity index (CCI), length of stay (LOS), readmission rates, and direct hospital costs, as well as hospital and surgeon characteristics. Univariate logistic regression analysis and a median regression of costs were performed. Multivariable regression was performed to identify potential confounders.

Results: We identified 30,433 patients, of which 49.2%, 28.0%, and 22.8% had surgery performed by a high, intermediate, and low-volume surgeon, respectively. Compared to low volume surgeons, high volume surgeons were more likely to see older patients in community-based hospital settings (42.6% vs 31.1%) and use a transobturator vs. retropubic approach (60.9% vs 58.5%). On univariate analysis, high and intermediate-volume surgeons had lower median hospital costs ($4505 and $4598 vs $4964, p<0.001) and lower incidence of prolonged LOS (14.7% and 14.6% vs 19.7%, p<0.001) compared to the low-volume group. There was no difference in readmission. On multivariate analysis, when controlling for age, race, and CCI, the lower median cost for intermediate and high-volume surgeons (-$352 (IQR -$422 to -$282) and -$455 (IQR -$517 to -$392), respectively, p<0.001) as well as the lower risk of prolonged LOS (OR 0.70 (95% CI 0.64-0.76) and OR 0.69 (95% CI 0.64-0.75), respectively, p<0.001) remained significant. Notably, while the readmission rate was low overall, patients of high volume surgeons were more likely to be readmitted than those of low volume surgeons (OR 1.20 (95% CI 1.02-1.41), p=0.026).

Conclusion: Higher surgical volume is associated with lower costs and lower incidence of prolonged length of stay but a slightly higher rate of readmission.
Poster #NM31
EVALUATION OF THE VAGINAL MYCOBIOME IN ASYMPTOMATIC PRE-MENOPAUSAL WOMEN
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Presented By: Victoria C. Scott, MD

Introduction: While the bacterial composition of the vaginal microbiome has been well studied, much less is known about the composition and complexity of the fungal community ("mycobiome"). Investigating the vaginal mycobiome and how it changes in concert with the host environment will be essential in determining why fungal species, such as Candida, can be pathogenic for some hosts and a seemingly inert colonizer in others. To address this question, we sought to evaluate the fungal mycobiome of asymptomatic reproductive-age women.

Methods: The operational taxonomic unit library used for analysis was obtained from a dataset examining asymptomatic, reproductive-age Estonian women obtained by amplification of the fungal internal transcribed spacer-1 (ITS-1) region from DNA isolated from vaginal swab specimens. Using a custom, manually curated fungal database focused on mammalian-associated genera (THFv1.5), we were able to increase the number of annotated sequences from 62% (using the UNITE database) to 86%. K-means clustering was performed using MatLab.

Results: The fungal communities present in vaginal samples from 251 asymptomatic women aged 15-44 were predominantly of low fungal diversity, with a median Shannon diversity index of 0.61 ± 0.52. Using k-means clustering analysis, we identified 3 major community patterns: Candida-predominant, Wallemia-predominant and a third mixed community containing a Pichia-predominant subset. These patterns did not correlate with exogenous hormonal medication use.

Conclusion: This is the first large dataset of vaginal specimens analyzed to define the composition of vaginal mycobiome in asymptomatic, reproductive-age women. While we reconfirmed Candida as the most common predominant species present in the vagina, this reanalysis identifies a large minority of subjects with the halophilic fungus, Wallemia. The dramatically different growth requirements of these two genera suggests that the fungal mycobiome may reflect fundamentally different microenvironments within the vagina of these subject subsets, despite both being asymptomatic. Future studies will aim to examine whether these differences impact the risks for other genitourinary tract pathology.

![Figure 1. The distribution of predominant fungal species.](image-url)

The stacked bar graphs displays the relative composition of the fungal mycobiome in each subject. A large proportion of subjects exhibit either a Candida-predominant (blue) or Wallemia-predominant (orange) pattern, with a smaller group demonstrating mixed populations of several fungal genera.
Poster #NM32
THE EFFECT OF INSURANCE ON WAIT TIMES FOR OUTPATIENT EVALUATION BY ACADEMIC FPMRS-TRAINED PROVIDERS
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Presented By: Wai Lee, MD

Introduction: Prior studies have shown that patients with Medicaid have longer wait times for urology appointments. Pelvic floor disorders are extremely prevalent and the number of women with pelvic floor disorders is expected to rise. The effect of insurance on access to care for Female Pelvic Medicine and Reconstructive Surgery (FPMRS) providers is unclear. The objective of this study is to evaluate discrepancies in wait times for FPMRS providers for patients with Medicaid.

Methods: We identified FPMRS-trained providers by reviewing websites from all ACGME accredited urology and gynecology residency programs. Subsequently, we used an IRB-approved standardized script to make separate calls to ascertain the earliest available appointment time with a provider for a fictional patient complaining of “urine leakage” with Medicaid insurance and then Medicare insurance. We compared the mean wait time of patients with Medicaid versus Medicare. Exclusion criteria included providers who required full registration to make an appointment and providers who declined to participate in the study.

Results: All academic urology (N=131) and gynecology (N=303) programs were surveyed. 27.5% (N=36) of urology programs had no FPMRS faculty, whereas 14.9% (N=45) of gynecology programs did not. 15.3% (N=85) of providers did not accept Medicaid. Our final analysis contained 362 FPMRS providers (93 urologists and 269 gynecologists). Patients with Medicaid waited longer for an appointment time than patients with Medicare (39.8 vs. 34.1 days, p<0.001). When stratified by specialty, this difference remained significant for gynecologists (p=0.026), but not urologists (p=0.867) (Table 1). Patients with Medicaid also experienced significantly longer mean wait times for gynecologists compared to urologists (42.5 vs 32.0 days, p<0.001).

Conclusion: Medicaid patients appear to experience disparities in access to pelvic floor specialists. As the population ages and healthcare policy evolves, accessibility to FPMRS providers must be considered.
Source of Funding: None
Poster #NM33
POSTERIOR TIBIAL NERVE STIMULATION: IDENTIFICATION OF PROGNOSTIC FACTORS FOR SUCCESSFUL OUTCOMES
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Presented By: Melanie Aube-Peterkin, MD

Introduction: Posterior tibial nerve stimulation (PTNS) has been shown to be an effective treatment for overactive bladder (OAB) with or without urge urinary incontinence (UUI). Prognostic factors for successful treatment outcomes have yet to be established. The objective of this study is to identify patient factors that affect PTNS treatment outcomes.

Methods: A review of all patients who underwent PTNS treatment in a single institution, between February 2012 and July 2017, was performed. Patient baseline characteristics, baseline bladder function – including daytime frequency, nocturia episodes and number of pads per day (PPD) for patients suffering from OAB – and post-treatment bladder function were recorded. Subanalyses were performed with regard to sex, age, weight and severity of OAB at baseline.

Results: 155 patients, including 95 women and 60 men (median age 75), underwent PTNS treatments for OAB at our institution, during the study period. The recommended number of treatments was 12 weekly sessions, and 77% of our patients (n = 199) completed their 12 sessions (median 12). After completion of PTNS, number of daytime voids significantly decreased from a median of 10 to 5.5 (p < 0.05); episodes of nocturia decreased significantly from 3.25 to 3 (p < 0.05); and number of PPD saw a downward trend from a median of 2 to 1, without reaching significance (p = 0.13). Subanalyses with regard to gender, age and BMI did not reveal any prognostic significance of the aforementioned factors on treatment outcomes. Subanalyses were performed according to severity of disease, dividing patients into “mild” and “severe” groups, with regard to daytime frequency (≤ 10 vs > 10 episodes), nocturia (≤ 3.25 vs > 3.25) and PPD (≤ 2 vs > 2). No difference was noted between groups with regard to daytime frequency and number of PPD. However, patients with severe nocturia saw a statistically significant improvement of their symptoms when compared to patients with mild nocturia, with decreases in absolute number (-1 vs 0, p < 0.05) and relative number (25% vs 0%, p < 0.05) of episodes.

Conclusion: PTNS is an effective treatment for patients suffering from OAB, with significant improvement of daytime frequency and nocturia episodes, and may decrease number of pads worn for patients suffering from UUI. Patient factors such as age, gender and BMI do not dictate success of PTNS. Patients with severe nocturia may benefit from increased symptom relief with PTNS.

Poster #NM34
WITHDRAWN
Symptom-based Clustering of Female LUTS Participants in the Symptoms of Lower Urinary Tract Dysfunction Research Network (LURN) Study

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Presented By: Victor P. Andreev, PhD, DSc

Introduction:
The current paradigm for managing patients with lower urinary tract symptoms (LUTS) is to assign a diagnosis based either on a pre-defined symptom complex, such as overactive bladder, or to give a diagnosis based on a single symptom, such as nocturia. There are many limitations to this paradigm, as often patients present with multiple urinary symptoms that do not perfectly fit the pre-established diagnoses, and therefore, only some of the symptoms may be treated based on pre-existing diagnosis-based algorithms. We explored an alternative to extant diagnostic categories using a novel method of unbiased classification of symptom clusters based on detailed multi-symptom information.

Methods:
We analyzed baseline urinary symptom questionnaire data from 545 care-seeking female participants in the LURN Observational Cohort study. Symptoms were measured using the LUTS Tool and AUA Symptom Index (52 questions total). Probability based consensus clustering algorithm was used to identify groups with distinct symptom signatures.

Results:
Four distinct clusters were identified. Patients in cluster 1 (n=138) are continent but have post-void dribbling as well as voiding and storage symptoms. Patients in cluster 2 (n=80) have urgency incontinence, urgency, frequency, and few voiding symptoms. Patients in cluster 3 (n=244) have all types of urinary incontinence (UI), urgency, frequency, and mild voiding symptoms. Patients in cluster 4 (n=83) have multiple urinary symptoms to more severe degrees. All except two symptom questions were statistically significant between at least two clusters, and each cluster contained at least one member from each conventional diagnostic group (continent, stress incontinence, urgency incontinence, mixed UI, and other incontinence).

Conclusion:
Based on symptom reports, we have identified empirically-derived clusters that differ from conventional diagnostic groups. Clinical validation is needed to determine whether management improves with this new classification. Future work to refine how these subgroups relate to structural and functional abnormalities, will hopefully lead to new insights into disease mechanisms and better treatments.

Funding provided by grants from NIH/NIDDK
Poster #NM36

DRINKING FROM THE FIRE HOSE: EDUCATIONAL CONTENT OF DIRECT-TO-CONSUMER TELEVISION ADVERTISING FOR OVERACTIVE BLADDER

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Presented By: E. Ann Gormley, MD

Several overactive bladder (OAB) medications have been advertised on television. Proponents claim that direct-to-consumer ads promote treatment awareness; critics argue that ads are too confusing to be educational, particularly for low-literacy patients. This study examines the content of recent OAB ads.

Two databases of broadcast news programs were queried with 20 trade and generic names of prescription drugs FDA-approved for OAB to identify ads that aired 2009–2015. Ads were examined for product content (indication, benefits, risks, side effects) and several literacy domains: fact density (number of facts per second); use of medical jargon; distracting factors during risk presentation; readability of text and graphics; and the FDA requirement to direct viewers to more information.

Eight advertisements for four products were identified: fesoterodine, mirabegron, onabotulinumtoxinA, and solifenacin. Ads presented an average of 3.3 OAB symptoms, 3.1 drug benefits, 9.5 risks, and 5.8 side effects in 60 seconds. Nearly all ads (88%) contained hard-to-read text or graphics, including key facts such as clinical efficacy data, contraindications, or warnings about urinary retention. 38% of ads used medical jargon and did not explicitly state that the product may not work for all patients. Mean fact density was 0.4 benefits per second and 0.6 risks and side effects per second. 89% of ads presented risks in one continuous segment, and all ads increased speed or used a different voice when discussing risks; these factors are known to downplay consumer attention. During the voiceover presenting risks, all ads simultaneously displayed at least 1 and up to 3 additional data streams (eg, contraindications as scrolling text). Although all ads met FDA requirements for more information, in most ads (62%) the information was illegible or only briefly onscreen. When these references were displayed at the end of the ad with other information (eg, dosing options, free trial offer), mean fact density rose substantially to 1.6 facts per second. In most ads (62%), the manufacturer’s name was obscured or difficult to read.

Viewers of ads for OAB drugs had 50% less time to absorb risks and side effects compared to benefits. The majority of ads had 1 or more hard-to-read visuals and multiple data streams that could distract from viewers’ attention to drug risks. The findings raise concern about patients’ ability to gain balanced information, which may adversely impact help-seeking.
Poster #NM37
SYMPTOM RESOLUTION AND RECURRENT STRESS INCONTINENCE FOLLOWING URETHRAL SLING REMOVAL
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Presented By: Andrew Bergersen, MD

Introduction: To evaluate the resolution of overall symptoms, pain, and recurrent stress incontinence (SUI) following midurethral sling (MUS) removal.

Methods: We conducted an IRB-approved, retrospective review of our patients who underwent MUS removal from 2009-2016. We recorded sling type (transobturator tape (TOT) vs. retropubic (RP)), complete vs. partial removal, and presenting symptoms. Complete MUS removal was defined as removal from both the suburethral space and obturator muscles/groin or retropubic space/abdominal fascia, depending on sling type. Partial MUS removal included anything less than complete removal. Postoperative pain improvement was categorized as resolved (symptoms resolved and requiring no further therapy), improved (symptoms less bothersome, may require further therapy), or unresolved (no/minimal improvement and require further management). Recurrent SUI was also determined.

Results: 119 patients (85 TOT, 23 RP, 11 unknown) underwent MUS removal and 114 patients (58 complete and 56 partial removal) had follow-up data. Mean age at intervention was 54 years with mean follow-up of 16.6 months. Overall, symptoms resolved or improved in 83.4% of cases with 51.7% resolved, 31.9% improved and 16.4% unresolved. For patients with pain as indication for removal (n=84), 48.8% resolved, 27.4% improved, and 23.8% were unresolved. Complete sling removal was associated with significantly greater resolution of pain (65%, 31/48 resolved) compared to partial removal (37%, 10/36 resolved) (χ²=11.6; p=0.003). Complete sling removal resulted in significantly more recurrent SUI than partial removal in this subset (57.6% vs. 39.7%, p=0.05, RR=1.45). For painful TOT slings, 44.4% were resolved, 31.7% were improved, and 23.8% were unresolved. For painful RP slings, 68.7% were resolved, 12.5% were improved, and 18.7% were unresolved. The difference in pain resolution between sling type was not significant (p=0.18). Sling type was not significantly associated with recurrent SUI rates in either the entire cohort (50.9% TOT vs. 37.5% RP, p= 0.3) or the subset removed for pain (51% TOT vs. 38% RP, p=0.34).

Conclusion: Following MUS removal, most patients experienced resolution of presenting symptoms. Complete sling removal resulted in a significantly higher rate of pain resolution than partial removal, but also resulted in a higher rate of recurrent SUI. The type of sling removed did not influence pain resolution or recurrent SUI.
Poster #NM38
FACTORS ASSOCIATED WITH THE DECISION TO UNDERGO SURGICAL MANAGEMENT OF STRESS URINARY INCONTINENCE IN REPRODUCTIVE AGE WOMEN
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Presented By: Melissa A. Laudano, MD

Introduction: Given the strong association between stress urinary incontinence (SUI) and vaginal delivery, physicians often counsel women to defer surgical management until completion of childbearing. Unfortunately, data is lacking in this cohort of women. We examined the frequency with which reproductive age women selected surgical intervention and what patient characteristics were predictive of their choice.

Methods: The Montefiore Medical Center medical records database was queried from 2011-2016. 164 women with a diagnosis of SUI age 25 to 45 years with data for analysis were identified. Demographic, clinical, and operative data were collected retrospectively. Bivariate associations between the outcome variable (surgery) and pre-operative covariates were assessed using Mann Whitney U and Chi square test statistics. Multivariable logistic regression was performed.

Results: Median age was 40 years (IQR 35-43) and mean BMI was 30.9 (SD 7.1). 22% were African American, 9% White, 1% Asian, and 68% identified as other/non-responders. Median parity was 3 (IQR 2-3). 48% of subjects were documented as not using contraception, 5% oral contraceptive pills, 9% intrauterine devices, 23% had a tubal ligation, 4% condoms, and 11% other methods. In 76% of cases the physician evaluating the patient was Female Pelvic Medicine and Reconstructive Surgery (FPMRS) trained. Other lower urinary tract symptoms (LUTS), such as frequency, urgency, and recurrent infections, were present in 78% of patients. 36 subjects (22%) underwent anti-incontinence surgery for SUI. There was significant association between surgical management and age (p=0.04), BMI (p=0.03), and the evaluating physician (p<0.01). Controlling for age, race and BMI, being evaluated by a FPMRS trained specialist was associated with a 76% decreased odds of undergoing surgery (OR 0.24, 95% CI 0.09 to 0.68). Age was associated with a 10% increased odds of undergoing surgery (OR 1.1, 95% CI 1.00 to 1.22). Notably the presence or absence of LUTS and type of contraceptive method, were not found to be associated with undergoing surgery.

Conclusion: In our cohort, 22% of reproductive age women underwent surgical intervention for SUI. When controlling for age, BMI, and race, age was associated with increased odds of undergoing surgical correction, while, having a FPMRS trained provider decreased the odds of surgical intervention.
Poster #NM39
THE MANAGEMENT AND EFFICACY OF SURGICAL OUTCOMES USED FOR EROSION MESH IN THE URETHRA AND BLADDER
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Presented By: Dominique Dana Marie Thomas, BS

**Introduction:** In the United States, the use of polypropylene mesh is prevalent in women undergoing surgical intervention to correct pelvic organ prolapse (POP) and stress urinary incontinence (SUI). There are limited reports on the best method of intervention to remove the eroded mesh. The purpose of this study was to determine the safety and efficacy of different outcomes used in surgical revision of bladder and urethral mesh erosions.

**Methods:** A systematic review was compiled after searching electronic databases (PUBMED, OVID, EMBASE and MEDLINE) for clinical studies involving combined outcomes for mesh erosion in humans. Databases were searched from the time of inception through May 2017 for articles reporting surgical techniques to remove eroded mesh. Key terms searched were: "mesh erosion in bladder", "management of bladder mesh erosions", "bladder mesh erosions", "management of mesh erosions", "mesh erosion into the bladder", "mesh erosions of the bladder", "management of mesh erosions in the bladder", "mesh erosions", "bladder erosions due to mesh", "urethral erosion", and "transurethral resection of bladder erosion".

**Results:** A total of 754 articles were found, 654 articles were excluded due to ineligibility criteria. A total of 100 articles were included in our systematic review. This study identified 178 women with mesh erosion of urinary tract who underwent cystoscopic, vaginal, or abdominal removal of the eroded mesh. Of the 63% of patients who underwent vaginal removal of urethral mesh erosion experienced complete symptom resolution, compared to 56% in the cystoscopic group with urethral mesh erosion. In urethral erosion group, the re-operation rate was 5% in the vaginal group and 22% in the cystoscopic group. Regarding to bladder mesh erosion, the cystoscopic approach had a complete resolution rate of 77%, which was comparable to abdominal approach of 78%. None of the abdominal cases required re-operation while 20% of cystoscopic cases did.

**Conclusion:** The vaginal approach for repairing urethral mesh erosion has a higher complete symptom resolution rate and less re-operation rate than a cystoscopy approach. Abdominal and cystoscopic approaches for bladder mesh erosion have similar symptom resolution but abdominal requires less retreatment.
Poster #NM40
ROLE OF POSTOPERATIVE UROFLOWMETRY IN PATIENTS WITH RETROPUBIC SLINGS AND MEDIUM – TERM VOIDING DYSFUNCTION: PILOT STUDY.
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Santiago
Presented By: Sebastian Viguera, MD

Introduction: Retropubic slings (RPS) for stress incontinence (SUI) have reported high success rates (80-90%) and low complication rates. One of the most frequent complications present after a RPS is voiding dysfunction (VD). The post-void residual (PVR) < than 100 ml is used at discharge attempting to rule out possible VD. However, there is evidence that PVR may have low sensitivity for screening obstructive RPS, with patients at risk of having VD at follow-up. There is no evidence in the use of uroflowmetry at the time of discharge as a method for screening obstruction post RPS. The objective of this study is to report the preliminary results of the use of pre-discharge uroflowmetry in patients undergoing RPS and its possible association with VD in the short and medium term.

Methods: A cohort study was performed with patients with SUI treated with a RPS (TVT) and with a postoperative uroflowmetry evaluation. Patients were contacted, between 1 and 6 postoperative months for the filling of a questionnaire on symptoms of VD. VD was defined as any these symptoms: latency, two-fold urination, intermittence, spray, incomplete emptying sensation or post-micturition drip according to ICS / IUGA 2010 consensus.

Results: 26 patients were included, 9 of them had VD. The mean age was 56.8 ± 11 years, with an average operative time of 53 ± 41 minutes. 47% of patients without VD had a normal curve at the uroflowmetry versus 33% of those with VD. The values of uroflowmetry did not have statistically significant difference, except PVR, with a result of 61ml with VD vs. 23ml without VD (p: 0.05).

Conclusion: Patients with VD had a greater number of concomitant surgeries and longer operative times. In uroflowmetry, patients with VD had on average lower maximum flows, average flows and acceleration, in addition to longer times in reaching the maximum flow; although all of the above had no statistically significant difference. PVR were significantly higher in the voiding dysfunction group.

Conclusion: Preliminary results show that PVR may be the only predictor of VD, however both groups presented PVR considered "normal" (61 and 23 ml). This is the first report of the use of uroflowmetry at discharge as a predictor of VD.

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<th>With Voiding Dysfunction</th>
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<tr>
<td>Age (years)</td>
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<td>Concomitant surgeries (%)</td>
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<td>Surgical time (min)</td>
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<td>Maximum flow (ml/sec)</td>
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<td>Average flow (ml/sec)</td>
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<td>Voiding time (sec)</td>
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<td>Time to maximim flow (sec)</td>
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<td>23</td>
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<td>Flow at 2 seconds (ml/sec)</td>
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<td>Acceleration (ml/sec²)</td>
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<td>Normal uroflowmetry curve (%)</td>
<td>33</td>
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Poster #NM41
IMPACT OF AGING ON RADIOGRAPHIC AND FUNCTIONAL PARAMETERS OF THE EXTERNAL ANAL SPHINCTER IN WOMEN WITH FECAL INCONTINENCE
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Presented By: Amanda Artsen, MD

Introduction: Aging and obstetric anal sphincter injuries (OASIs) are key risk factors for female fecal incontinence (FI) associated with external anal sphincter (EAS) dysfunction. Although previous studies have demonstrated the deleterious effect of OASI on the EAS function, investigations focused on age-related changes of EAS yield conflicting results. The objective is to assess the impact of aging on the EAS radiological and functional parameters in women with FI.

Methods: Consecutive patients undergoing evaluation for FI by a single board-certified Female Pelvic Medicine and Reconstructive Surgery specialist between 2012 and 2016 constituted the study cohort. In the U.S., the average age of menopause, a marker of biological senescence in women, is 51. Thus, we defined “younger” group as ≤ 51 and “older” group as > 51 years of age, consistent with the onset of age-related sarcopenia in limb muscles in the 6th decade of life. Relevant demographic and clinical parameters were obtained from electronic medical records. Endoanal ultrasound (EAUS) and anorectal manometry (ARM) findings were compared between groups, using Mann-Whitney and Student t-tests with significance set to 0.05. EAS thickness and mean squeeze pressure (MSP) were also compared between women with and without OASIs, to account for the potential confounding effect of EAS defects on outcomes of interest. Linear regression was used to assess correlation between EAS thickness and MSP. Results are presented as mean±SEM except where indicated.

Results: The mean age of younger (N=29) and older (N=106) subjects differed by 23 years (P=<0.01). The groups did not differ with respect to parity (median 2, range 0-7, P=0.1). OASIs were present in 76% of younger and 85% of older women, P=0.3. Subjects with vs without OASIs did not differ with respect to EAS thickness (10.0 vs 9.7, P=0.9), or MSP (56.2 vs 39.8, P=0.1). EAS thickness was similar in younger (9.8 ± 0.4) and older (10.0 ± 0.2) women, P=0.8. MSP did not differ between the groups: 57.5 in younger vs. 54.5 in older, P = 0.6. EAS thickness did not significantly correlate with MSP (R2=0.03, P=0.2).

Conclusion: Aging does not impact either the EAS thickness or physiological muscle parameters in women with FI. Analogous to the limb muscles, volumetric EAS measures are not predictive of muscle function. Studies focused on elucidating the mechanisms of age-related FI are urgently needed to enable identification of novel potential therapeutic targets.
Poster #NM42
“INCREMENTAL SYRINGE” A NOVEL INVENTION OF A USER FRIENDLY SYRINGE TO INJECT BOTULINUM TOxin WITH IMPROVED ACCURACY, PRECISION, AND SPEED
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Presented By: Majid Mirzazadeh, MD

Introduction: Traditional syringes require users to visually estimate syringe volume, resulting in adverse effects on dosing accuracy, precision, and speed. This is especially problematic when the user must simultaneously focus on other visual information and deliver multiple small, accurate and precise volumes. Injecting Botox via cystoscope while observing the procedure on a monitor, often leads to unequal and non-accurate delivery in different spots in the bladder. We have designed an Incremental Syringe (IS) which provides an audible “click” and tactile resistance from the plunger feedback after each increment (1 ml) of injection. Here we compare the dosing accuracy, precision and speed of the incremental syringe to those of a traditional syringe.

Methods: We converted half of 10 ml traditional syringes to IS by replacing their plungers. Incremental plungers were prototyped with increments every 1.0 mL and to fit the 10 mL syringes. 14 graduate student volunteers tested syringes with three needle sizes (14, 18, and 23 gauges). Each operator tested all syringe type and needle size combinations by dispensing 1.0 mL at a time for 8 consecutive injections. Each injection was weighed on a balance and converted to volume using the specific gravity of water. Precision of dose volumes were compared using Bartlett’s Test for unequal variances. A standard one-way or Welch’s ANOVA was used to compare differences in accuracy depending on equality variances.

Results: Traditional and IS dose volumes were off by -3.2% and -2.5% respectively. Accuracy differences were identified between syringe types with 14 and 18 gauge needles, but not with 23 gauge. The coefficient of variation was 3.5% for traditional syringes and 1.2% for IS, which was significantly different for all three needle sizes. Statistically different variation in dose volumes was found between needle sizes and between users for traditional syringes, but not for IS. 13/14 individuals were more accurate and 13/14 were more precise with the IS. Also pilot data suggests ISs are approximately 50% faster.

Conclusion: While the Incremental Syringe’s main advantage lies in simple handling, it is also more accurate, reducing dosing variation within individuals, across individuals, and across needle sizes. IS is a promising medical device for difficult situations like Botox injections when multiple precise injections and monitoring the screen are needed at the same time.
Poster #NM43
FUNCTIONAL OUTCOMES OF SYNTHETIC TAPE AND MESH REVISION SURGERIES: A MONOCENTRIC EXPERIENCE
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Presented By: Emmanuel J. Chartier-Kastler, MD, PhD, FEBU

Introduction: To report the functional outcomes following tape/mesh removal procedures.
Methods: This retrospective study all consecutive women who underwent a tape/mesh surgical revision in a single tertiary referral center from January 2008 to September 2016. Data regarding revision surgery indications, symptoms progression, postoperative complications and their management were collected. Descriptive statistics were performed to assess outcomes.
Results: Overall 140 women, with a mean age of 60.5 (range 35-91) years, had a tape/mesh surgical revision. Patients underwent the following surgeries: tape removal (n=95/140, 67.9%), tape division (n=23/140, 16.4%), mesh removal (n=18/140, 12.9%) and concomitant tape and mesh removal (n=4/140, 2.9%). Tape removals were mainly performed for voiding symptoms (n=34/95, 35.8%) and vaginal erosion/extrusion (n=16/95, 16.8%). 4/95 (4.2%) tapes were removed for storage symptoms. Most mesh removals were performed for vaginal erosion/extrusion (n=9/18, 50.0%). Mean interval between tape/mesh insertion and its surgical revision was 52.1 months (range 5.0 days-16.0 years). Mean follow-up time was 20.4 months (range 6.0 days-7.8 years). 11/140 (7.9%) patients were lost to follow-up immediately after revision surgery. Voiding and storage symptoms resolved completely in 37/59 (62.7%) patients and in 14/37 (37.8%) patients, respectively. Pelvic pain/dyspareunia was cured in 30/47 (63.8%) patients. 42/81 (51.9%) patients with postoperative stress urinary incontinence (SUI) recurrence or persistence underwent an additional surgical procedure: 18/81 (22.2%) tapes, 17/81 (21.0%) artificial urinary sphincters, 6/81 (7.4%) adjustable continence therapy balloons and 1/81 (1.2%) fascial slings. Among the 18 patients who had a mesh removal, only 1 (5.6%) had a pelvic organ prolapse (POP) recurrence. The main limitation of this current study is that it is a retrospective study with a limited patient population.
Conclusion: Tape and mesh-related complications can require surgical revisions. Although most symptoms resolved after surgical revisions, patients must be informed that symptoms may persist. Recurrent or persistent SUI or POP may require a subsequent surgical procedure.
Poster #NM44
PRE-OPERATIVE URODYNAMIC EVALUATION IN FEMALE MEDICARE PATIENTS UNDERGOING A STRESS URINARY INCONTINENCE PROCEDURE: RATES BEFORE AND AFTER THE VALUE TRIAL
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1Dartmouth-Hitchcock Medical Center; 2Lebanon, NH
Presented By: Annah Vollstedt, MD

Introduction: The American Urologic Association/Society of Urodynamics, Female Pelvic Medicine and Urogenital Reconstruction (AUA/SUFU) Guideline outlines the evaluation and treatment of stress urinary incontinence (SUI) and state that urodynamic (UDS) testing may be omitted in healthy females who have not undergone a prior SUI procedure. This recommendation is largely based on the data reported in the seminal Value of Urodynamic Evaluation (ValUE) trial. We sought to investigate the rates of UDS testing in those undergoing a SUI procedure before and after the ValUE trial publication.

Methods: Using the Dartmouth Institute’s Atlas Rate Generator exploring a 100% Medicare claims data, we identified females with a diagnosis of SUI by ICD-9 codes and a CPT code for either urethral bulking or urethral sling procedure, within 306 hospital referral regions (HRR). We then identified the proportion of those who also had a CPT code for UDS within one year prior to their SUI procedure.

Results: Complete 2011 and 2013 data was available for 151 of the 306 HHRs. The national percentage of pre-operative UDS evaluation was 53% (16020/30131) in 2011, compared to 55% (11,772/21579) in 2013, after the publication of the ValUE trial (p=0.157). In 2011, the highest percentage of UDS testing in was performed in Monroe, LA at 81% (48/59) and the lowest in Jonesboro, AR at 22% (14/64). In 2013, the highest percentage of UDS testing was performed in Longview, TX at 88% (43/49) and the lowest in Springfield, MO at 22% (22/99). Only 40% (61/151) of HHRs decreased their use of UDS, while 52% (79/151) increased UDS rates, and 8% (11/151) HHRs stayed the same.

Conclusion: There is significant regional variation in utilization of UDS in those undergoing a SUI procedure. Nationally, the overall rates of UDS, diagnostic testing did not change significantly after the publication of the ValUE trial. When evaluating at the HRR level, a larger proportion of HRRs demonstrated increased or unchanged rates between 2011 and 2013. Further research is needed to investigate the differences in UDS testing after the distribution of the SUI AUA/SUFU guidelines as well the rates of UDS testing in populations other than Medicare beneficiaries.

Poster #NM45
WITHDRAWN
Poster #NM46
A RANDOMIZED, MULTICENTER STUDY OF AN INTRAVESICAL BALLOON TO TREAT STRESS URINARY INCONTINENCE (SUI): 24 MONTH RESULTS
Karny Jacoby, MD¹, Kurt McCammon, MD², Susan Kalota, MD³, Harvey Winkler, MD⁴, Jeffrey A. Snyder, MD⁵, Kevin Cline, MD⁶, Kaiser Robertson, MD⁷, Charles Rardin, MD⁸, Randall Kahan, MD⁹, Lonny Green, MD¹⁰, Shazia A. Malik, MD¹¹ and Eric Rovner, MD¹²
¹UW Medicine/Northwest Hospital; ²Urology of Virginia, Virginia Beach, VA; ³Urological Associates of Southern Arizona, Tucson, AZ; ⁴Northwell Health, Great Neck, NY; ⁵Genitourinary Surgical Consultants, Denver, CO; ⁶Regional Urology Associates, Shreveport, LA; ⁷Chesapeake Urology Associates, Hanover, MD; ⁸Women's and Infants Hospital, Providence, RI; ⁹WomanCare, Arlington Heights, IL; ¹⁰Virginia Women's Center, Richmond, VA; ¹¹Valley Urogynecology Associates, Phoenix, AZ; ¹²Medical University South Carolina, Charleston, SC
Presented By: Karny Jacoby, MD

Introduction: This abstract describes a novel technique for treating SUI that focuses on the reduction in transient spikes in intravesical pressure by insertion of a free-floating, non-occlusive intravesical balloon filled with compressible gas. The SUCCESS trial is a phase III study of the Vesair® balloon. The purpose of this abstract is to report the twenty-four month results from subjects who continued with treatment.

Methods: The SUCCESS trial is a multi-center, prospective, single blind, randomized, sham-controlled study. Subjects were randomized on a 2.33:1 basis to either Vesair balloon placement or placebo. The primary efficacy endpoint was a composite of both a >50% reduction from baseline on 1-hour provocative pad weight test and a ≥10-point improvement in symptoms on the Incontinence Quality of Life Survey (I-QOL) questionnaire assessed at the three-month study visit. The deflated 30cc polyurethane balloon is pre-inserted inside the tip of a 19 French (F) delivery system and inserted into the bladder through a sheath, inflated and released. The balloon was removed under direct visualization using a custom optical grasper through a sheath and replaced every 12 months. Sham balloon insertion procedures for subjects in the control arm were identical with the exception of actual balloon deployment. Control arm subjects were offered a balloon at 3 months.

Results: Evaluable results were obtained from 53 subjects who remained in the study at 24 months (24 month cohort). At three months after balloon placement, 56.6% of the subjects in the 24-month cohort met the composite endpoint and 68.0% met the endpoint at 24 months. The percentage of subjects with a greater than 50% reduction in their provocative pad weight increased from 67.9% at three months to 78.4% at 24 months. An improvement in symptoms was reported on the subject’s PGI-I questionnaire, with 71.7% of subjects in the 24-month cohort reporting improvement at three months, and 84.3% at 24 months. No device- or procedure-related serious adverse events nor unanticipated adverse events were reported and no cases of urinary retention were observed.

Conclusion: In this phase three trial, symptom relief was maintained for subjects continuing therapy for 24 months. The balloon was found to be safe with no device- or procedure-related serious adverse events reported. Additional studies are warranted to determine which patient populations are more tolerant of the balloon.
Poster #NM47

THE OUTCOME OF IMPLANTATION OF A BLADDER NECK ARTIFICIAL URINARY SPHINCTER (BN AUS) FOR RECURRENT URODYNAMICALLY PROVEN STRESS URINARY INCONTINENCE AND MIXED URINARY INCONTINENCE.

Dunia Benamer, MBBS, Daniela Andrich, MD FRCS, Jeremy Ockrim, MD, FRCS, MB ChB, Tamsin Greenwell, MSc, FRCS, MB ChB and Anthony Mundy, MS, MRCP, FRCS

UCLH Urology, UCLH, London, UK

Presented By: Dunia Benamer, MBBS

Introduction: To assess the outcome of BN AUS insertion for recurrent or complex primary urodynamically proven stress urinary incontinence (SUI) and stress-predominant mixed urinary incontinence (MUI).

Methods: A prospective database of women having BN AUS implantation by two surgeons for SUI and MUI was reviewed to assess the type of incontinence, the aetiology of the incontinence, previous surgery, the type of procedure and the outcome in terms of cure and complications.

Results: 50 women aged 50.5 years (range 27-69) had BN AUS implantation, as above, between 2006 and 2016. Of these 34, had primary implants, 12 had a device replacement following mechanical failure and 4 had a new implant following previous explantation of an earlier device for erosion.

The aetiology was neurological in 17, recurrent stress urinary incontinence in 16, epispadias in 6, pelvic fracture urethral injury in 4, bilateral single ectopic ureter in 3, urethrovaginal fistula in 1, augmentation urethroplasty in 1, congenital Mullerian anomaly in 1 and undiversion in 1.

43 had had previous surgery including cystoplasty, undiversion, urethroplasty, urethrovaginal fistula repair and anti-incontinence surgery.

The results and complications are listed below according to whether the patient underwent a one stage implantation of all the device components; a staged procedure in which the bladder neck cuff was implanted at the first procedure and the remaining components were implanted and the device activated six months or so later; and patients in whom just the cuff alone was implanted (stage 1 of the staged procedure) but the patients became continent with that alone and didn’t require the rest of the components at a second stage.

<table>
<thead>
<tr>
<th>Component</th>
<th>Single Stage Procedure</th>
<th>Staged Procedure</th>
<th>Cuff Alone (4)</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>N (%)</td>
<td>25</td>
<td>21</td>
<td>4</td>
<td>50</td>
</tr>
<tr>
<td>Component Repositioning</td>
<td>1</td>
<td>3</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>Mechanical Malfunction</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>2 (4%)</td>
</tr>
<tr>
<td>Device Infection</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>3 (6%)</td>
</tr>
<tr>
<td>Device Erosion</td>
<td>6</td>
<td>2</td>
<td>0</td>
<td>8 (16%)</td>
</tr>
<tr>
<td>Device Explantation</td>
<td>7</td>
<td>3</td>
<td>1</td>
<td>11 (22%)</td>
</tr>
<tr>
<td>New Onset DO</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>1 (2%)</td>
</tr>
<tr>
<td>ISC</td>
<td>8</td>
<td>6</td>
<td>1</td>
<td>15/39 (38%)*</td>
</tr>
<tr>
<td>Dry with AUS</td>
<td>16</td>
<td>14</td>
<td>3</td>
<td>33/39 (85%)*</td>
</tr>
<tr>
<td>Improved with AUS</td>
<td>2</td>
<td>2</td>
<td>0</td>
<td>4/39 (10%)*</td>
</tr>
<tr>
<td>Wet with AUS</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>2/29 (5%)*</td>
</tr>
</tbody>
</table>
Poster #NM48
THE SUBDOMAIN QUESTION 6 ON PAIN OF THE UROGENITAL DISTRESS INVENTORY SHORT FORM IS SENSITIVE TO CHANGE.
Connie Wang BA, Alana Christie, MS and Philippe Zimmern, MD
UT Southwestern Medical Center
Presented By: Connie N. Wang

Introduction: To determine the validity of question six (Q6) of the modified short form version of the Urogenital Distress Inventory (UDI-6) to measure post-operative presence and severity of pain in women after mid-urethral sling (MUS) placement.

Methods: Following IRB approval, a prospectively maintained database of non-neurogenic women was used to identify women with UDI-6 Q6 data before and after synthetic sling removal (SSR). Demographic information, type of MUS placed, concomitant procedures at time of MUS placement, and baseline and post-operative self-report of pain and Q6 scores were recorded. Exclusion criteria included multiple MUS, other pelvic mesh placement aside from MUS, urinary tract infection at the time of pain assessment and chronic pain syndromes including fibromyalgia and interstitial cystitis. Women with insufficient follow-up measures of pain or missing pain measurements at baseline were also excluded. Q6 scores (0-3) were compared pre- and post-operatively and against patient self-report of pain in a group of women whose SSR was indicated for pain (SSR-P) and in a group without pain as a primary indication (SSR-C). Three hypotheses were tested. 1) Higher baseline Q6 scores in the SSR-P group than in the SSR-C group 2) Decrease in Q6 scores after SSR indicated for pain relief 3) Correlation of baseline and follow-up Q6 scores with patients' self-reported pain.

Results: Between 2005 and 2017, 116/435 women met study criteria. Mean baseline Q6 scores in the SSR-C group was 0.95 ± 1.2 (69% none or mild) while mean baseline Q6 scores in the SSR-P group was 2.3 ± 1.1 (19% none or mild). Mean improvement in Q6 score after SSR was -0.19 ± 1.2 in the SSR-C group and -0.88 ± 1.4 in the SSR-P group. Q6 scores were significantly (p<0.0001) associated with self-reported pain with increasing likelihood of self-reporting pain as Q6 score increased. (See Table).

Conclusion: In women undergoing SSR for MUS-related complications, Q6 of the UDI-6 is a valid and sensitive measure of lower urinary tract associated pain. Q6 can accurately capture MUS-related pain in the clinical setting, is correlated to self reported pain, and is responsive to surgical interventions for pain relief.

Table 1. UDI6 Q6 score vs. self-report of pain

<table>
<thead>
<tr>
<th>UDI6 Q6</th>
<th>Self-report pain = No</th>
<th>Self-report pain = Yes</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>23 (55%)</td>
<td>9 (12%)</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>1</td>
<td>6 (14%)</td>
<td>5 (7%)</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>5 (12%)</td>
<td>12 (16%)</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>8 (19%)</td>
<td>48 (65%)</td>
<td>&lt;0.0001</td>
</tr>
</tbody>
</table>
Poster #NM49
DURABILITY OF MACROPLASTIQUE IN WOMEN WITH STRESS URINARY INCONTINENCE SECONDARY TO INTRINSIC SPHINCTER DEFICIENCY
Timothy Carroll, Alana Christie, MS, Melissa Foreman RDMS RVT, Gaurav Khatri, MD and Philippe Zimmern, MD
UT Southwestern Medical Center
Presented By: Timothy F. Carroll, BS

Introduction: To evaluate the durability of Macroplastique™ (MPQ) in women with stress urinary incontinence (SUI) secondary to intrinsic sphincter deficiency (ISD) using serial 3D ultrasound (3DUS) measurements.

Methods: Following IRB approval, charts of non-neurogenic women with SUI and ISD who underwent MPQ were reviewed from a prospectively maintained database. ISD was defined as low VLPP and absence of hypermobility on voiding cystourethrogram. All had at least two 3DUS measurements after their last MPQ injection. Women with prior bulking agent injection, or follow-up <6 months were excluded. 3DUS was performed using a high resolution 3D 9-3V end-fire probe at 6-8 weeks post-injection and yearly thereafter. The same senior sonographer blinded to clinical outcomes evaluated volume and configuration (circumferential/symmetric or asymmetric) at each 3DUS.

Results: Between 2011-2016, 39 of 146 women met study criteria. Those excluded were due to prior other bulking agent injection (21%) or insufficient 3DUS follow-up (79%). Average age and BMI were 64 and 28, respectively. 63% of patients had prior anti-incontinence surgery. Mean time from first to last 3DUS was 19 months (range: 6-42 months). Mean time between first and second 3DUS was 13 months. An average of 5.6cc were injected in each patient (range 2.5-10cc). 76% of patients had 1 injection, while 24% had 2 or more. The volume from first to last 3DUS measurement (Figure 1) decreased from a mean of 5.6cc to 5.5cc (95% Cl: -0.5, -0.04); p = 0.0262). 29 patients had symmetric MPQ at first 3DUS, of whom 25 (86%) retained symmetry on follow-up 3DUS.

Conclusion: At mid-term follow-up, MPQ demonstrates only minimal change in volume and configuration in the urethral wall.
HIGH CATASTROPHIZING IN SUBJECTS WITH SELF-REPORTED PAINFUL MESH COMPLICATIONS HAVE POORER OUTCOMES

Ariel Moradzadeh, MD1, Juzar Jamnagerwalla, MD2, Karyn Eilber, MD1, Jennifer Anger, MD1 and A. Lenore Ackerman, MD, PhD3

1Cedars-Sinai Medical Center, Los Angeles, CA; 2City of Hope, Duarte, CA; 3Cedars-Sinai Medical Center

Presented By: Ariel Moradzadeh, MD

Introduction: The pain catastrophization scale (PCS) was developed to help identify those patients likely to have an exaggerated negative mental thought process in response to pain. Catastrophizing has been shown to be a risk factor for chronicity of pain, disability, and depression. Patients who catastrophize after surgery have worse outcomes and longer duration of pain. Given this, we sought to identify the rate of catastrophizing in a cohort of subjects with chronic pain after self-reported mesh complications.

Methods: Subjects throughout the US with self-described complications of vaginal mesh were recruited through advertisements to complete an internet-based anonymous survey. All subjects filled out multiple surveys, including the PCS and the Genitourinary Pain Index (GUPI) questionnaire. The PCS is a 13-question survey with scores ranging from 0-52. Previous studies have established distribution of scores from subjects with chronic pain, with a score of 30 or higher representing the highest quartile, thus a score ≥30 was used to define high pain catastrophizing. Additional data was abstracted including age, number of previous pelvic surgeries (specifically, surgeries performed to manage mesh complications), and intent to sue. Statistical analysis was performed using χ² test and t-test for categorical and continuous variables, respectively.

Results: A total of 167 subjects were included in the study, of which 90 subjects (54%) were found to have high pain catastrophizing. There was no significant difference between baseline age, intent to sue, or number of previous pelvic surgeries between those who catastrophized and did not. Subjects who catastrophized were significantly more likely to have a higher GUPI score (35.0 vs. 30.5, p<0.001) along with significant differences in pain (18.0 vs. 14.2, p<0.001) and quality of life (11.0 vs. 9.5, p<0.001) subdomains. Furthermore, subjects who catastrophized tended to have less hope that they would recover (60% vs. 79%) which approached but did not reach statistical significance (p=0.053).

Conclusion: Subjects with self-described mesh complications have a high rate of pain catastrophizing, which is associated with significantly worse quality of life and higher pain. Identifying high catastrophizing patients in the setting of chronic pelvic pain from mesh complications may help guide treatment and be an indicator for early or adjunctive psychosocial intervention.
Poster #NM51
MID-TERM EFFECTIVENESS OF THE REMEEX SYSTEM™ IN WOMEN WITH RECURRENT STRESS URINARY INCONTINENCE OR INTRINSIC SPHINCTER DEFICIENCY: THE EXPERIENCE IN COLOMBIA

Mauricio Plata, MD, MSc, FACS1, Alejandra Bravo-Balado, MD1, Daniela Robledo, MD1, Juan Carlos Castaño, MD2, Catalina Osorio, MD2, Milton Salazar, MD3, Juan Guillermo Velásquez, MD2, Carlos Gustavo Trujillo, MD1, Juan Ignacio Caicedo, MD1 and Juan Guillermo Cataño, MD1

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Presented By: Mauricio Plata, MD, MSc, FACS

Introduction: Recurrent SUI and SUI due to ISD are complex entities that urologists are more frequently facing given a growing life expectancy and failure rates inherent to any treatment modality. We aim to report the mid-term effectiveness of the Remeeex system™ in women with recurrent stress urinary incontinence (SUI) or intrinsic sphincter deficiency (ISD) in Colombia.

Methods: A multicenter retrospective study was conducted in females who received an adjustable sling between 2011 and 2016 due to recurrent SUI (failed anti-incontinence surgery) or ISD (ALPP < 60 cmH2O). Patients were assessed with urodynamic studies (UDS) preoperatively and the ICIQ-SF and cough stress test (CST) pre- and postoperatively. Primary outcomes were subjective overall cure rate (no leakage reported by the patient), subjective SUI cure rate (no leakage while coughing or during physical activity), objective SUI cure rate, (no leakage during CST) and rate of improvement (reduction of ≥4 points in the ICIQ-SF). Secondary outcomes were a reduction of the ICIQ-SF and quality of life (QoL) scores and procedure’s success using a scale from 0 (“no improvement”) to 10 (“a complete success”). Intra- and postoperative complications as well as the need for re-adjustments were recorded. Descriptive statistics were employed.

Results: A total of 51 patients were included. Mean age was 62 (SD± 11.3, range 38-88) years. Mean follow-up was 32.3 (SD±17.8, range 1.7-77.4) months. Urinary incontinence (UI) was described as moderate and severe by 9 (17.6%) and 42 (82.4%) patients, respectively, and 25 (49%) had stress-predominant mixed urinary incontinence. A total of 26 (51%) patients had ISD and 40 (78.4%) recurrent SUI, out of which 19 (73.1%) had ISD. SUI objective, overall subjective and SUI subjective cure rates were 92.2%, 41.2% and 74.5%, respectively, while 86.3% of patients achieved improvement. The procedure’s success was rated with a median of 10 (IQR 8-10) points. Impact of UI on QoL improved from 10 (IQR 9-10) to 0 (IQR 0-5). Clavien-Dindo II complications occurred in 14 (27.5%) patients and 1 (2%) had IIIa. Tape erosion occurred in 1 (2%) patient. Thirteen (25.5%) patients have required one readjustments and 2 (3.9%) have required two; mean time-to-readjustment was 22.7 (SD±17.2, range 0.5-48) months.

Conclusion: The Remeeex system™ can be considered a valid and valuable option in the management of recurrent SUI and SUI due to ISD, with significant improvement in the QoL.
Poster #NM52
INCONTINENCE OF URINE DURING SEX ACTIVITY: IMPORTANCE OF AN UNDERREPORTED SYMPTOM
Ricardo Valderrama, Fellow in Urogynecology¹, Andrea Suarez Physician² and Javier Pizarro-Berdichevsky Uro-Gynecologist³
¹Catholic University, Santiago, Chile; ²Pontificia Universidad Catolica de Chile, Santiago, Chile; ³Urogynecology unit, Sotero del rio hospital, Chile/ division de obstetricia y Ginecologia, pontificia universidad de Chile
Presented By: Ricardo A. Valderrama Sr., Fellow Urogynecology

Introduction: Urinary incontinence associated with intercourse (CUI) is a frequently under-reported symptom within the population of women with urinary incontinence. The objective is to describe the characteristics of the patients with this symptomatology that consulted in the Urogynecology Unit of our Hospital.

Methods: The Urogynecology Unit of the Hospital has a database that has been prospectively collected and standardized since 2007 which includes CUI among the possible symptoms. We analyzed a retrospective cohort of patients with some type of incontinence who consulted at the Urogynecology Unit of Hospital Sotero Del Rio, between 2007-2017. Inclusion criteria: any type of urinary incontinence as defined by ICS / IUGA. Exclusion criteria: Patients without sexual activity. Descriptive analysis of the sample was performed in general and dichotomized manner according to the presence of CUI in the anamnesis. Results are presented as median (interquartile range), or mean ± standard deviation or percentage.

Results: With 4629 patients in our database, 3222 reported some type of UI. 1362 of them were not sexually active being excluded. Thus, 1860 patients were included in the analysis. 24% presented CUI (n = 451), 89.9% (N = 1673) had stress urinary incontinence (SUI) and 60.1% (N = 1117) had urge incontinence. No differences were found in histories of hysterectomy or use of forceps among patients with or without CUI. Patients with SUI presented CUI more frequently, compared with patients who did not present SUI (95.1% vs 88.3% p <0.001). Patients with CUI, compared to those without CUI, had a higher smoking rate (34.8% vs. 28.6%, p= 0.009), greater presence of mixed UI symptoms (29.7% vs 20.1% p <0.001), higher insensible UI (6% vs 2.8% p = 0.002) and nycturia (12.6% vs 3.5% p <0.001).

Conclusion: CUI appears to be associated with the presence of SUI, mixed UI, nycturia and tobacco use, which could be associated with significant effects on the quality of life of sexually active women. Future studies could assess the role of CUI in the outcome of incontinence surgeries.

Keywords. Incontinence, coital. Woman. Quality of life.
Introduction: Patients with pelvic floor disorders may prefer a provider with a specific gender. This may affect the wait times for male and female Female Pelvic Medicine and Reconstructive Surgery (FPMRS) providers. The objective of this study is to compare wait times for female versus male academic FPMRS providers.

Methods: We identified FPMRS-trained providers from all ACGME accredited urology and gynecology residency programs. An IRB-approved standardized script was used to make separate calls to establish the earliest appointment time available for a fictional patient complaining of “urine leakage.” Discrepancies in wait times between gender were compared. Exclusion criteria included providers that did not accept new patients with Medicaid, need for full registration to make an appointment, or declined participation.

Results: Of 557 FPMRS providers surveyed, 15.3% (N=85) did not accept new patients with Medicaid. Our final analysis contained 362 FPMRS providers (93 urologists and 269 gynecologists), which consisted of 183 males and 179 females. Female FPMRS providers had significantly longer wait times to see patients with both Medicare (38.8 versus 29.6 days, p=0.005) and Medicaid (47.2 versus 32.4 days, p<0.001) when compared to males. When stratified by specialty, this difference remained significant for gynecologists (Medicaid p<0.001 and Medicare p=0.002) but not FPMRS urologists (Medicaid p=0.724 and Medicare p=0.943) (Table 1).

Conclusion: Patients encounter longer wait times to see female academic FPMRS providers. As the number of male providers and female providers were similar, this suggests that women may preferentially seek female FPMRS providers. Further studies are needed to investigate the underlying factors for gender preference in FPMRS providers.

Source of Funding: None
Poster #NM54
TRAINING FIDELITY AND QUALITY CONTROL IN CLINICAL BEHAVIORAL RESEARCH FOR URINARY INCONTINENCE: THE GLADIOULUS TRIAL
Tomas L. Griebling, MD, MPH1, Ananias Diokno, MD2, Diane Newman DNP3, Kathryn Burgio, PhD4, Lisa Low, PhD5, Michael Maddens, MD2, Leslee Subak, MD6, Patricia Goode, MD1, Carolyn Sampselle, PhD5, Ann Robinson RN, MSA2, Trevillore Raghunathan, PhD5, Judy Boura, MS2, Donna McIntyre 2 and & The Gladiolus Research Team
1University of Kansas School of Medicine; 2William Beaumont Hospital, Royal Oak, MI; 3University of Pennsylvania, Philadelphia, PA; 4University of Alabama - Birmingham, Birmingham, AL; 5University of Michigan, Ann Arbor, MI; 6Stanford University, Palo Alto, CA; 7Birmingham/Atlanta Veterans Affairs Geriatric Research, Education, and Clinical Center, Birmingham, AL
Presented By: Tomas L. Griebling, MD, MPH

Introduction: Instructor training fidelity and quality control are crucial aspects of clinical behavioral research. This study describes methodology for GLADIOULUS, a multi-site, prospective, randomized, controlled trial of group behavioral treatment (GBT) versus no treatment for urinary incontinence (UI) in older women.

Methods: Community-dwelling women with UI were recruited by mass mailing. Eligible subjects were randomized to GBT or no treatment. GBT was a 2-hour bladder health class focused on anatomy, physiology, UI, pelvic muscle exercise, other behavioral methods, and self-reward to enhance compliance. Those randomized to control received a handout on general health. Validated continence measures were assessed at baseline, and 3, 6, 9, 12 months in both groups. Quality control methods (focus of this study) included creation of a standardized slide deck and narrative outline used by instructors at all sites. The outline was organized by conceptual topics. A script concordance measure was designed with 30 teaching points (10 mandatory) for all sessions. A ‘train-the-trainer’ model was used. Lead investigators used slide deck and conceptual outline to teach GBT to site instructors who then taught-back GBT using their own style, but following the conceptual outline. Each was scored on training fidelity. They then led GBT sessions at respective sites with study participants. All sessions were audio recorded and digitally secured in a cloud-based system. Sessions were randomly analyzed by a lead investigator who was not a site director and who was not directly involved in clinical sessions with subjects. Plans were to review 5% of sessions. The primary outcome was degree of trainer fidelity and script concordance.

Results: The 360-degree training method led to final script modifications. All instructors achieved 100% scores and were certified to teach GBT. A total of 52 GBT sessions were held across 3 clinical sites. Two sessions per site (total 11.5%) were randomly analyzed. All sessions reached 100% script concordance on both 30 and 10 item checklists.

Conclusion: GBT helped older women with UI achieve significantly better continence outcomes compared to control. A very high level of trainer fidelity and script concordance was achieved for this multi-site clinical behavioral trial. This training and quality control methodology may prove useful in future behavioral research.

Source of Funding: NIH/NIA # RO1AG043383
ClinicalTrials.gov Identifier: NCT02001714
Poster #NM55
CONCOMITANT PROCEDURES PERFORMED AT THE TIME OF MIDURETHRAL SLING AFFECT POST-OPERATIVE URINARY RETENTION RATE
Paige Kuhlmann, MD1, Andrew Chen, MD1, Jeffrey Johnson, BS2, Logan Hubbard, BS3, Lenore Ackerman, MD1, Karyn Eilber, MD1 and Jennifer Anger, MD1
1Cedars Sinai Medical Center, Los Angeles, CA; 2Western Michigan University Homer Stryker, MD School of Medicine, Kalamazoo, MI; 3Sidney Kimmel Medical School at Thomas Jefferson University, Philadelphia, PA
Presented By: Paige Kuhlmann, MD

Introduction: Post-operative urinary retention following midurethral sling placement is a source of frustration for patients and surgeons alike. Increasing the ability to predict the amount of time before return of normal voiding function can improve patient counseling and guide decision making regarding post-operative catheter placement and timing of removal. In this study, we aim to identify predictive factors of urinary retention after midurethral sling placement, with a focus on concomitantly performed procedures.

Methods: A retrospective review of the electronic medical records of all patients who underwent a midurethral sling procedure performed at our institution between January 2014 to August 2017 by one of three FPMRS attendings (JA, LA, KE) was performed. A total of 453 sling procedures were performed. Data on patient age, BMI, presence or absence of intraoperative bladder perforation, operative time, length of hospital stay, additional procedures done at the time of sling placement, and postoperative urinary tract infection (UTI) was abstracted and analyzed.

Results: A total of 453 sling procedures were performed. Of these, 24% of patients had post-operative urinary retention. The majority of patients (67%) underwent additional procedures at the time sling placement, most commonly anterior colporrhaphy, posterior colporrhaphy, and robotic-assisted sacrocolpopexy. The odds of having post-operative urinary retention were 2.14 times higher if a concomitant procedure was performed (p=0.04). Further stratification by procedure type revealed that none of the additional procedures connoted increased post-operative urinary retention rate if performed in isolation. However, when analyzing only combination procedures, the odds of urinary retention increased to 2.72 (p=0.03). Patient age, BMI, presence or absence of intraoperative bladder injury, operative time, and length of hospital stay did not meet significance for predicting post-operative urinary retention. Also of note, having post-operative retention does not significantly increase the odds of having a post-operative UTI.

Conclusion: Patients who are undergoing midurethral sling placement at the time of combination surgery for pelvic organ prolapse are at an increased risk of post-operative urinary retention and should be counseled accordingly.
Poster #NM56
URINARY INCONTINENCE AND LOW BONE MINERAL DENSITY AMONG OLDER U.S. ADULTS
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1Oregon Health and Science University School of Medicine and OHSU-PSU School of Public Health, Portland, Oregon; 2OHSU-PSU SOPH; 3OHSU Department of Urology; 4OHSU Department of Orthopaedics and Rehabilitation, OHSU Epidemiology Program
Presented By: Nikki Steinsiek, BS

Introduction: Over age 65, urinary incontinence (UI) occurs in 43.8% of adults, and older adults have a 25% risk of fall each year. UI and low bone mineral density (BMD) are independent risk factors for falls. Low BMD is also a strong risk factor for fracture. Fractures, especially those of the hip, are associated with significant morbidity, mortality and economic costs. Despite the relationship of both UI and low BMD with falls, there are few data regarding the relationship of UI and low BMD.

Methods: We merged data from 2005-2010 National Health and Nutrition Examination Survey (NHANES) waves. Survey weights were applied per CDC guidelines. Observations were restricted to ages 40 and older. Observations taking medication for osteoporosis were excluded, as were observations lacking data for both UI and BMD status. Observations were classified by UI status and subcategorized by UI type: stress; urgency; mixed; or other. Low BMD was defined by a t-score < -1 for the total femur or femoral neck. Logistical regression was performed in STATA. A minimally adjusted model including age and gender was used to assess confounding. There was no funding for this study.

Results: Beginning with 31,034 observations, we restricted as previously mentioned, leaving 7,969. Overall, 33% had UI. UI was more common in those who were female, obese, of older age, less physically active, and had cancer. Body mass index (BMI) was the only variable that met confounding criteria. In the minimally adjusted model, those with UI had significantly decreased odds of low BMD. There was no significant difference after adjustment for BMI. Similarly, prior to adjustment for BMI, stress and mixed UI were associated with a lower odds of low BMD. While not statistically significant, the odds of low BMD among those with stress UI was lower than those without UI (Figure 1).

Conclusion: UI and low BMD are not associated regardless of gender or urinary incontinence type. These results suggest that although both UI and low BMD are associated with aging and increased risk of falls and fractures, they are not associated with each other. This is the first study to assess the relationship between UI and low BMD among men and women.
Poster #NM57
SELECTIVE BLADDER DENEVERVATION FOR THE TREATMENT OF OVERACTIVE BLADDER
Stefan De Wachter¹, Le Mai Tu², Magali Robert³, Karel Everaert⁴, Eric Rovner⁵ and Roger Dmochowski⁶
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Presented By: Stefan De Wachter, MD, PhD

Introduction: Overactive Bladder (OAB) is a syndrome characterized by urgency with or without urgency incontinence (UUI). A new therapy using RF energy to ablate tissue below the mucosa of the trigone, Selective Bladder Denervation (SBD), is being studied. The effacement of nerves followed by collagen deposition is intended to prolong efficacy of treatment without disruption of the normal voiding function. This Phase 2 study evaluates procedure safety and effects on OAB symptoms.

Methods: 63 women with OAB, enrolled at 4 sites, Belgium and Canada. Ethics approval was granted. Inclusion criteria (3-day bladder diary (BD)): >8 voids/day, at least 3 episodes of urgency with/without UUI; total 24hr urine output <3000ml. SBD was performed in a single procedure using bipolar RF ablation via cystoscopy. Ablations were placed distal to ureteric orifices and across the interureteric ridge. Subjects were evaluated at 12 weeks post-op with BD and treatment benefit scale (TBS).

Results: Baseline demographics: mean age of 66.9y (range 39-82), PVR 20ml (range 0-121). 55/63 (87%) were naïve to prior Botox treatment; 10 (16%) failed prior SNS treatment; 16/63 (25%) had a sling for stress incontinence and 14 (22%) reported prolapse.
Baseline BD: mean of 12.7 voids/day, 8.1 urgency episodes/day and 3.6 UUI/day. AB prophylaxis was given prior to the procedure and 76.2% (48/63) subjects were treated under IV sedation using site specific standard of care anesthesia. Median number of ablations was 4 [range 3 – 6] and subjects reported a mean 4h post-op pain score of 2.3 out of 10. 61/63 subjects (96.8%) completed the 12 week visit with 68.9% showing improvement on the TBS. BD outcomes include a mean decrease of -1.5 voids/day (p=0.012), -3.4 urgency episodes/day (p<0.0001) and -1.6 UUI/day (p=0.0002). Additionally there was no change from baseline PVR at 12 weeks with a mean of 17ml, median of 6 and range [0–100]. Five subjects reported a UTI within 12 weeks post-procedure. No subject required self-catheterization. Two post-procedure serious adverse events were reported in one subject identified to have an undiagnosed ureterocele, which resolved without clinical sequela and the subject continues in the study.

Conclusion: Selective bladder denervation of the trigone is emerging as a promising treatment for OAB symptoms with minimal adverse effects when performed in an appropriately selected patient.
POSTOPERATIVE URINARY RETENTION AS A PROGNOSTIC FACTOR FOR LONGER-TERM CONTINENCE OUTCOMES AFTER URETHRAL BULKING AGENT INJECTION FOR TREATMENT OF FEMALE STRESS URINARY INCONTINENCE

Amanda Chung, MBBS, MS, FRACS¹, Melanie Aube, MD², Jessica DeLong, MD², Ramon Virasoro, MD², Jeremy Tonkin, MD² and Kurt McCammon, MD²

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Presented By: Amanda S.J. Chung, BSc, MBBS, MS, FRACS

Introduction: Injection of Macroplastique (Cogentix Medical, Minnetonka MN) urethral bulking agent is a minimally invasive treatment for female stress urinary incontinence (SUI). Although safe and effective, post-procedure urinary retention may occur and can be anxiety provoking for patients. The objective of this study was to assess the continence outcome of women who received Macroplastique injections for treatment for SUI complicated by post-procedure urinary retention.

Methods: A review of all women who received Macroplastique urethral bulking agent injections for treatment of SUI, from January 1, 2014 to October 1, 2016, at a single institution, was performed. Perioperative complications (such as urinary retention) and continence outcomes were recorded. Outcomes of women who experienced post-procedure urinary retention were compared with outcomes of women who did not have post-procedure urinary retention. Statistical analyses included the Chi Square test.

Results: Thirty-two female patients (mean age 62, range 39-89 years) were identified as having received Macroplastique urethral bulking agent for treatment of SUI during the study period at our institution by four urologists. Mean duration of follow-up was 11 months. Overall, mean number of pads used per patient per day pre-procedure was 2.5 and post-procedure 1.3. 13% (4/32) of women experienced urinary retention after injection of the Macroplastique. All cases of de novo post-procedure urinary retention resolved spontaneously. At last follow-up, the rate of continence cure among patients who experienced post-procedure urinary retention was significantly higher than among patients who did not experience post-procedure urinary retention (75% (3/4) versus 21% (6/28), p<0.05).

Conclusion: Macroplastique injections for treatment of female SUI was complicated by post-procedure urinary retention in 13% of patients. The longer term rate of continence cure was significantly better in patients who had post-procedure urinary retention compared with patients who had no post-procedure urinary retention (75% versus 21%, p<0.05).
Poster #NM59
PREOPERATIVE 3D TRANSLABIAL ULTRASOUND FOR MANAGEMENT OF SYNTHETIC MID-URETHRAL SLING COMPLICATIONS
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UT Southwestern Medical Center
Presented By: Nabeel A. Shakir, MD

Introduction: In planning surgical revision for complications occurring after synthetic midurethral sling (MUS) placement, knowledge of MUS location and course may be valuable. We studied the role of preoperative translabial ultrasound (TLUS) with 3D reconstruction to assess association with lower urinary tract symptoms (LUTS), and to determine if TLUS impacted suburethral sling removal (SSR) approach.

Methods: A prospectively maintained, IRB-approved database of non-neurogenic women who underwent SSR after a single MUS and had preoperative TLUS was queried. Demographics, presenting symptoms, and Urogenital Distress Inventory (UDI-6) questionnaire (range 0-100) were reviewed by a neutral investigator. One experienced sonographer (MF) performed TLUS using a Philips iu22 system with a 3D probe placed at the introitus permitting multiplanar image acquisition. TLUS parameters including MUS depth from lumen, distance to bladder neck, and morphology were assessed with univariate logistic regression to determine association with presenting symptoms, with significance as p<0.05.

Results: From 2013-2017, 45 of 54 total patients met study criteria, presenting at a median 78 months post MUS placement with sling type retropubic (14), transobturator (29), and unknown (2). 37/45 (82%) of patients reported 3 or more symptoms with median total UDI-6 score 46 (IQR 33-57). Median MUS depth was 3.4mm (IQR 2.3-4) and distance to the bladder neck was 2cm (1.5-2.4). Urethral erosion and vaginal exposure were noted on TLUS in 8 and 7 patients respectively (Table 1). MUS morphology was normal in 15 patients, twisted/curled in 11, and discontinuous in 19. There was no association of any TLUS parameter with presenting symptoms or UDI-6 score. 8/19 patients with previously incised MUS underwent unilateral removal of sling remnants, as compared to 2/11 with twisted MUS and 1/15 with normal morphology, thereby avoiding potential urethral injury by choosing the side of sling furthest from the urethral lumen.

Conclusion: MUS morphology on TLUS prior to SSR may allow for potentially less morbid options (i.e. unilateral removal of sling remnants) or planning a safe approach to sling removal.

<table>
<thead>
<tr>
<th>MUS morphology</th>
<th>Normal (15)</th>
<th>Previously incised (19)</th>
<th>Twisted/Curled (11)</th>
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<tbody>
<tr>
<td>Urethral erosion, no. (%)</td>
<td>4 (27%)</td>
<td>0</td>
<td>4 (36%)</td>
</tr>
<tr>
<td>Vaginal exposure, no. (%)</td>
<td>1 (7%)</td>
<td>2 (11%)</td>
<td>4 (36%)</td>
</tr>
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<td>Depth at 6.00, mm</td>
<td>3.5 (2.8-5.2)</td>
<td>3.6 (1.9-4.7)</td>
<td>2.7 (1.4-3.4)</td>
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<tr>
<td>Distance from bladder neck, mm</td>
<td>2 (1.7-2.5)</td>
<td>1.5 (1.2)</td>
<td>2 (1.7-2.7)</td>
</tr>
<tr>
<td>Unilateral removal of sling remnants, no. (%)</td>
<td>1 (7%)</td>
<td>8 (42%)</td>
<td>2 (18%)</td>
</tr>
</tbody>
</table>
Poster #NM60

POST OPERATIVE VOIDING PATTERN AND THE RESULTS OF MIDURETHRAL SLING SURGERY IN DIABETIC AND NON DIABETIC FEMALE PATIENTS WITH PURE STRESS URINARY INCONTINENCE

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Presented By: Dongwan Sohn, MD

Introduction: The purpose of this study is to find out the changes in voiding pattern and results after midurethral sling surgery (MUS) in diabetic stress urinary incontinence to compare with non diabetic SUI patients

Methods: From January 2010 to February 2014, a retrospective survey was conducted of 209 female patients who had been diagnosed with SUI and undergone MUS. The subjects were divided into the diabetic SUI group and the nondiabetic SUI group. Changes in the overactive bladder symptom score (OABSS), American Urological Association-Symptom Index (AUA-SI), maximal uroflow rate(Qmax), residual urine volume(RU) and continence rate before and six months after the MUS were compared.

Results: Of the 189 patients, 32 patients (16.9%) were classified as diabetic SUI group, and 157 patients (83.1%) were classified as non diabetic SUI group. The mean age of the subjects was 56.7 years (range, 31-80 years), and the mean age of patients was 54.1 years (range, 34-80 years), and 55.5 years (range, 31-78 years) in the diabetic group and non diabetic group. In diabetic SUI group, voiding symptom and storage symptom among the AUA-SI were significantly increased (p=0.02, 0.03). OABSS were increased significantly. In nondiabetic SUI group, voiding symptom score of AUA-SI showed a significant increase (p=0.02), but storage symptom score and OABSS score showed an insignificant increase. The postoperative continence rate was not significant different in 92% and 95% in both group. Three patients of diabetic SUI group had postoperative urinary retention, so tape cutting was done. Preoperative and postoperative AUA-SI, OABSS score was not different according to HbA1c in diabetic SUI patients. Post operative Qmax and RU were high in diabetic SUI group but insignificant different.

Conclusion: Prevalence of postoperative OAB was higher in diabetic SUI patients than non diabetic SUI patients. Voiding dysfunctions with deteriorated voiding symptom and storage symptom may also occur in diabetic SUI patients.
Poster #NM61
RISK FACTORS FOR PROLONGED HOSPITALIZATION AND MAJOR COMPLICATIONS FOLLOWING MID URETHRAL SLING REVISION
Zaid Chaudhry, MD1, Evgeniy Kreydin, MD2, Janine Oliver, MD3, Zachery Baxter, MD4, Ja-Hong Kim, MD4, Christopher Tarnay, MD5 and Shlomo Raz, MD4
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Presented By: Zaid Chaudhry, MD

Introduction: Synthetic mesh mid-urethral sling (MUS) placement for stress urinary incontinence (SUI) is associated with a small risk of complications such as mesh erosion and voiding dysfunction which may necessitate surgical revision. Risk factors for adverse perioperative outcomes are not well described. Our objective is to identify predictors for prolonged hospitalization and major complications after revision of MUS.

Methods: A retrospective case-control study was performed. Women undergoing MUS revision surgery between January 2005 and December 2016 at a single academic institution were identified by Current Procedure Terminology codes. Patients undergoing surgical revision of any type of synthetic mesh MUS (retropubic, transobturator, or single-incision) were included. Patients were excluded if they were undergoing concomitant removal of synthetic mesh placed for other indications, such as repair of pelvic organ prolapse. Patients with less than 30-days of post-surgical follow-up were excluded from the analysis of postoperative complication rates. The primary objective was to identify peri-operative and patient factors associated with prolonged length of stay (LOS) (less than or equal to 2 days) and major complications (greater than or equal to Clavien grade 3).

Results: 462 patients were identified. 73 patients (15.6%) had a prolonged LOS. Eighty-seven percent of patients (87%) had sufficient follow-up for analysis of postoperative complications. The rate of major complications within 30 days was 2.8%. Multivariate logistic regression analysis revealed that patients with increased ASA class (OR 4.06), pre-operative narcotic/benzodiazepine use (OR 2.70), concomitant surgical procedure (OR 2.74), intraoperative bladder injury (OR 3.96), and major complications (OR 2.48) had an increased likelihood of a prolonged LOS. Patients who experienced an intraoperative bladder injury (OR 3.33), required a groin or suprapubic incision during their procedure (OR 2.31), or who had an estimated blood loss > 400 mL (OR 2.34) had an increased likelihood of major complication within 30 days. Age, race, a history of prior mesh revision, and type of MUS being revised were not associated with prolonged LOS or major complications.

Conclusion: MUS revision is a safe procedure with a short LOS and low rate of major complications. This study identifies several risk factors for prolonged LOS and major complications which may improve patient counseling prior to MUS revision.
CIRCUMFERENTIAL AND DORSAL URETHRAL DIVERTICULA: A CONTEMPORARY EXPERIENCE OF THE MOST CHALLENGING GROUP OF DIVERTICULA

Jai Seth, Sarah Itam, Mahreen Pakzad, Rizwan Hamid, Jeremy Ockrim and Tamsin Greenwell
Presented By: Jai Seth, FRCS

Introduction: The surgical excision of urethral diverticula (UD) in women carries small but quantifiable risks of urodynamic stress urinary incontinence (USUI), urethro-vaginal fistula (UVF) and UD recurrence. The morphology of UD varies from simple, horseshoe, circumferential. Most are sited ventral to the urethra with their os joining between 4 and 8 O'clock. Very rarely they are sited dorsal to the urethra with their os joining between 9 and 3 O'clock (Figure 1). The most challenging group for surgical excision are the dorsal (often misnamed anterior) diverticulum and the circumferential diverticulum. We examined the outcomes of this highly challenging group of patients at a national referral centre.

Patients and methods
A retrospective review of a prospectively acquired database of consecutive patients treated between 2002-2017 was performed and data retrieved on demographics, presenting symptoms, pre-operative imaging, surgical technique and outcomes. All patients were pre-operatively assessed with videourodynamics and T2 weighted pelvic MRI.

Results: 30 patients, with mean age 46.2yrs (28-77), and mean follow-up of 24months (7-42) had ventral origin circumferential (27) or dorsal origin (3) UD. Pre-operatively, 29 (97%) had at least one urinary symptom, 15(50%) had lump symptoms, 2(7%) had USUI and 17(57%) had evidence of bladder outflow obstruction. On MRI all circumferential UD had 360 involvement around the urethra, whilst the 3 dorsal UD had a mean of 180 involvement. 29 (97%) were excised fully and 2 (7%) had malignant histology. 7 (23%) developed de novo USUI which resolved by 12 months in 4 (57%). 8 (27%) required further surgery; 3 for persistent USUI, 2 for symptomatic high tone non-relaxing sphincter, 1 for vesicovaginal fistula, 1 for urethral stricture and 1 completion urethrectomy, cystectomy and ileal conduit for cancer.

Conclusion: The circumferential and dorsal group of UD are surgically challenging. Within this group 7% had malignant histology, suggesting a higher chance of sinister pathology than in the simple or horseshoe types. There is also a relatively high rate of de novo USUI and other complications in this group.
Poster #NM63
MID-TERM MACROPLASTIQUE OUTCOME IN WOMEN WITH STRESS URINARY INCONTINENCE SECONDARY TO INTRINSIC SPHINCTER DEFICIENCY
Timothy Carroll, Alana Christie, MS, Melissa Foreman, RDMS RVT, Gaurav Khatri, MD and Philippe Zimmern, MD
UT Southwestern Medical Center
Presented By: Timothy F. Carroll, BS

Introduction: To evaluate the long-term outcomes of Macroplastique (MPQ) in women with stress urinary incontinence (SUI) secondary to intrinsic sphincter deficiency (ISD) using validated questionnaires and three-dimensional ultrasound (3DUS).

Methods: Following IRB approval, charts of non-neurogenic women with SUI secondary to ISD who underwent MPQ injection were reviewed from a prospectively maintained database. ISD was defined as low VLPP and absence of hypermobility on voiding cystourethrogram. Patients were divided into 3 groups: Naïve (Group I), Prior Anti-Incontinence Surgery including urethrolysis/sling removal, bladder neck suspension/sling, (Group II), and combined Prior Bulking Agent and Anti-Incontinence Surgery (Group III). Excluded were women with follow-up <6 months. Baseline data collected included questionnaire scores (UDI-6 question 3 (0-3) and VAS Quality of Life Questionnaire (0-10)) and urodynamic study values. Patients were followed with repeat questionnaires, patient symptomatic self-report, and 3DUS evaluating volume/configuration of MPQ. All 3DUS measurements were performed by the same senior sonographer blinded to clinical outcomes. Success was defined as a UDI-6 question 3 score of 0-1, patient self-report of improvement of at least 75%, usage of ≤ 2 pads/day, or a VAS QoL score of ≤3, as well as not requiring additional anti-incontinence therapy.

Results: Between 2011 and 2016, 106 of 149 women met study criteria. The average age and BMI of the whole population was 66 and 28, respectively. 67% of patients had 1 injection, while the remainder had 2 or more. The mean baseline UDI6 question 3 score was 2.6 and the mean baseline QoL score was 8. The success rate was 46% for Group I, 49% for Group II, and 62% for Group III at 30 months mean follow-up (p=.61). Over the same period, the mean overall UDI6 question 3 score and QoL score improved to 1.7 and 4.3, respectively. Of the success group (N=54), Group II contributed the largest proportion (56%) followed by Group I (24%). Of the failure group, 6 patients progressed to sling and 2 patients required an artificial urinary sphincter. 3DUS measurements confirmed only a 0.2cc decrease in MPQ volume each year after the final injection, which was independent of distribution (symmetric/circumferential or asymmetric).

Conclusion: At mid-term follow-up, MPQ was effective as both a primary and secondary treatment alternative for SUI secondary to ISD.

Financial Funding: none
Poster #NM64
A COMPARISON OF SYNTHETIC MIDURETHRAL SLINGS (MUS) AND AUTOLOGOUS PUBOVAGINAL SLINGS (PVS) IN THE SETTING OF CONCOMITANT SURGERY
Deborah Hess, MD, MS, Rena Malik, MD, Alana Christie, MS and Maude Carmel, MD
UT Southwestern, Dallas, TX
Presented By: Deborah Sperling Hess, MD, MS

Introduction: Management for stress urinary incontinence may include bulking agents or slings (MUS or PVS). These procedures are often done in combination with other related procedures. We sought to identify differences between the use of MUS and PVS in the setting of concomitant surgery.

Methods: Female patients were identified using the American College of Surgeons National Surgical Quality Improvement Program (ACS-NSQIP), a prospectively collected database of 688 currently participating institutions used to evaluate and improve surgical outcomes. Patients were identified between 2008-2015 as undergoing MUS (CPT 57288) or PVS (CPT 57288+20920, 20922 or 20926). Concomitant procedures, also identified by CPT code, included surgery for pelvic organ prolapse and benign hysterectomy. Patients were excluded whose sole concomitant surgery was cystoscopy, suprapubic tube placement or urethrolysis in the setting of PVS placement. Descriptive statistics were provided as frequencies and percentages for categorical variables. Association between sling and surgery type was tested using the Chi-Square test, and logistic regression was used to analyze this association by surgical specialty.

Results: Of the 36,754 patients who underwent sling placement between 2008-2015, 36,562 (99.5%) had a MUS and 192 (0.5%) had a PVS placed. A total of 21,604 patients (59%) had a concomitant procedure at the time of sling placement. When stratified by sling type (MUS vs PVS), 59% of patients getting a synthetic MUS had a concomitant procedure as compared to 51% of patients getting a PVS (p = 0.02). Surgical specialty was significantly associated with sling type. Of PVS placed, 18% were placed by gynecologists and 80% were placed by urologists. While getting a MUS is more likely overall, the odds of getting a PVS at the time of concomitant surgery are greater when performed by urology (OR 2.7, 95% CI 1.9-3.7, p<0.0001) in comparison to gynecology (OR 1.2, 95% CI 0.6-2.6, p=0.62).

Conclusion: A small percentage of slings placed are PVS. The majority of these are placed by urologists. In the setting of concomitant surgery, MUS is most common; however, the odds of getting a PVS are greater when performed by urology in comparison to gynecology.
Poster #NM65
PATIENT GLOBAL IMPRESSION OF CHANGE (PGIC) AND ICIQ-URINARY INCONTINENCE SCORING SYSTEMS DEMONSTRATE POOR RELIABILITY OF PAD WEIGHT ASSESSMENTS FOLLOWING MALE SLING SURGERY
Sarah Itam, Jai Seth, Bogdan Toia, Eskinder Solomon, Mahreen Pakzad, Rizwan Hamid, Tamsin Greenwell and Jeremy Ockrim
UCLH, London, UK
Presented By: Sarah Itam, MEd FRCS(Urol) MBBS

Introduction: The male sling can be an effective treatment option in men with post prostatectomy incontinence (PPI) but PROM assessment of outcomes has not been validated. The aim of this study was to assess levels of agreement between change in severity of urinary incontinence ICIQ-UI-SF scores and Patients' Global Impression of Change (PGIC) questionnaire scores.

Methods: We retrospectively reviewed all patients who had a male (AdVance) sling inserted between 2012-2015. Preoperative ICIQ-UI-SF questionnaires were completed and patients were evaluated at 3 and 6-month intervals post operatively with ICIQ-UI-SF and PGIC questionnaires.

Results: A total of 37 patients had sling insertion with mean age 68.1 (range 57-78) years. Median length of follow-up is 33 months (range 11-70). The questionnaire response rate was 78%. 18 patients (64%) had significant improvement in their PGIC scores (PGIC 5-7), which correlated to a mean reduction in ICIQ-UI-SF score of 7.9 (5.7 to 10.0 95% CI); compared to 10 patients with minimal PGIC change (PGIC 1-4) in ICIQ-UI-SF score of 0.3 (-3.2 to 3.8 95% CI). In addition, there is statistically significant difference in ICIQ-UI-SF question 3 (frequency of leak) and question 5 (impact on QOL) between the two groups. However, question 4 (volume of leak) was not a discriminator (Figure 1).

Conclusion: There is good agreement between PGIC and ICIQ-UI-SF questionnaires and both can identify patients who have improved following surgery. Frequency of leakage is the best indicator of quality of life improvement, but the volume of urine leak does not appear to be a reliable outcome measure of improvement. This is indicative of poor reliability of pad weight testing, and its utility in assessing outcomes from PPI surgery.
Poster #NM66
RETROGRADE LEAK POINT PRESSURE DOES NOT PREDICT OUTCOMES FOLLOWING MALE SLING INSERTION
Bogdan Toia, Jai Seth, Hazel Ecclestone, Mahreen Pakzad, Rizwan Hamid, Tamsin Greenwell and Jeremy Ockrim
UCLH, London, UK
Presented By: Bogdan Toia

Introduction: It has previously been identified that the only reliable pre-operative predictor of success of male sling is pre-operative pad weight. Retrograde leak point pressure (RLPP) is a measure of urethral sphincter function which can be replicated objectively. Given that pad weight is a reflection of sphincter dysfunction we aim to assess whether RLPP is independently predictive of male sling success.

Methods: Retrospective evaluation of 36 men, mean age 66 who underwent male sling for post prostatectomy incontinence (PPI) between 2012 - 2017. All patients had RLPP measured prior to surgery using standardized technique. Differences in RLPP for patients who were cured versus those that remained wet was analyzed using Student T-test with a p value <0.05 being significant.

Results: Mean follow up is 28.5 months (range 5-66). In 29/36 patients incontinence was cured (0 or 1 security pads/day) following male sling insertion (81%), and 7/36 (19%) remained wet. 4 patients had temporary post-operative urinary retention, all of whom were in the dry group. Mean preoperative pad weight in the group who remained wet was 943g (range 14-3000), the mean pad weight in the cured group was 182g (range 20-586). Mean RLPP for those cured was 50 cmH2O (range 22-100), for those who remained wet mean RLPP was 35 cmH2O (range 13-63) (Figure 1), p=0.53.

Conclusion: Pad weight remains a strong predictor of success of male sling in this cohort. However, retrograde leak point pressure does not appear to independently predict male sling outcome. More data is required to develop pad weight and RLPP thresholds and predictive nomograms for PPI surgery.

<table>
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Poster #NM67
UPSIZING THE ARTIFICIAL URINARY SPHINCTER PRESSURE REGULATING BALLOON IN MEN WITH PERSISTENT STRESS URINARY INCONTINENCE AFTER INDEX PLACEMENT
Rachel A. Moses, MD, MPH1, James R. Craig, MD2, Jacob Basilius, MD2, William O. Brant, MD, FACS2 and Jeremy B. Myers, MD, FACS2
1University of Utah, Salt Lake City, UT; 2Salt Lake City, UT
Presented By: Rachel A. Moses, MD

Introduction: The Artificial Urinary Sphincter (AUS) remains the gold standard for severe male stress urinary incontinence (SUI). Data is lacking on management of persistent or recurrent SUI following AUS placement. We sought to evaluate the efficacy of increasing the pressure regulating balloon (PRB) pressure in patients with SUI following AUS placement.

Methods: A retrospective review was performed on patients with demonstrable, persistent or recurrent SUI following AUS placement undergoing increased pressure PRB replacement between 2011-2016. All patients underwent urethroscopy demonstrating appropriate coaptation of the urethral cuff without associated urethral pathology. Patients underwent a post void residual (PVR) and history/physical (with urodynamics when appropriate) to rule out overflow and urgency incontinence. Pad per day use (PPD), Incontinence Symptom Index (ISI) score, and Incontinence Quality of Life (I-QOL) score were compared pre and post PRB replacement. Rates of cuff erosion were compared between patients with a history of prostate radiation and AUS factors.

Results: Eighteen patients, average age of 64 (+/-14), underwent replacement of their 61-70 cm H2O PRB with a 71-80 cm H2O PRB. Initial SUI etiology included radical prostatectomy (9/18), prostate radiation (4/18), endoscopic outlet procedure (2/18), urethral injury (1/18), and Spina Bifida (2/18). PPD use, ISI index score, and I-QOL scores significantly improved after increased pressure PRB replacement (PPD 3.6 vs. 1.4 p=0.002, ISI index 21.1 vs. 15.4, p= 0.009, I-QOL 14.1 vs. 7.60, p=.0001). Eleven percent (2/18) developed cuff erosion within 1.5 months following PRB replacement. A history of prostate radiation was the only significant factor associated with cuff erosion (11% vs. 0%, p=0.03).

Conclusion: Replacement of the PRB in individuals with persistent or recurrent stress urinary incontinence may significantly improve PPD use, ISI score, and I-QOL score. Caution is warranted in individuals with a history of pelvic radiation prior to PRB replacement due to the significant increased risk of cuff erosion in this population.
WHAT IS THE FATE OF ARTIFICIAL URINARY SPHINCTERS AMONG MEN UNDERGOING REPETITIVE BLADDER CANCER TREATMENT: A CASE SERIES
Scott Heiner, BS¹, Boyd Viers, MD², Marcelino Rivera, MD², Brian Linder, MD² and Daniel Elliott, MD²
¹Mayo Clinic School of Medicine, Rochester, MN; ²Department of Urology, Mayo Clinic, Rochester, MN
Presented By: Scott M. Heiner, BS Biology

Introduction: Functional characteristics and durability of the artificial urinary sphincter (AUS) among patients who develop bladder cancer has been poorly characterized. We sought to evaluate AUS outcomes among patients subsequently diagnosed with bladder cancer, in order to describe device survivability when subject to diagnostic and therapeutic procedures such as cystoscopy, transurethral resection, and cystectomy.

Methods: We retrospectively reviewed 1,803 male patients treated with AUS surgery at a single institution between 1983-2014. We describe AUS device outcomes among patients undergoing surveillance and treatment for bladder cancer.

Results: Following AUS placement, 14 (1%) patients were subsequently diagnosed with and treated for bladder cancer and 4 patients with bladder cancer undergoing treatment and screening, subsequently received AUS placement. The median follow-up from device placement was 7.2 years (IQR 2.8,11.5), and the median time from AUS placement to bladder cancer diagnosis was 6 (IQR 0,9). There were a total of 8 primary and 1 secondary devices failures. Despite a median of 2 diagnostic cystoscopies (IQR 1,6) and 0 bladder tumor resections (IQR 0,0) per patient following device implantation, only 1 (5%) patient experienced an iatrogenic erosion related to urethral manipulation. Among those undergoing cystectomy (N=4), 1 device was left in situ without complication.

Conclusion: Bladder cancer surveillance and treatment with an AUS device in place appears to confer minimal additional risk to AUS survival. Careful attention should be given to device deactivation and use of the smallest caliber instruments available to minimize the risk of iatrogenic urethral erosion.

Funding: None
Poster #NM69
PREVALENCE AND CHARACTERISTICS OF URINARY INCONTINENCE IN A TREATMENT-SEEKING MALE PROSPECTIVE COHORT – RESULTS FROM THE LURN STUDY
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Presented By: Brian T. Helfand, MD, PhD

Introduction: Urinary incontinence (UI) in men that have not been treated for prostate cancer has not been well studied, and UI is not believed to be a common complaint. The objective of this study was to describe the prevalence of UI in a male treatment-seeking cohort from the Symptoms of Lower Urinary Tract Dysfunction Research Network (LURN).

Methods: Data were obtained prospectively from participants recruited into the LURN Observational Cohort Study between 2015 and 2017. Participants completed questionnaires related to lower urinary tract symptoms (LUTS), bowel symptoms, sexual functioning, and psychological symptoms. Men were grouped based on type of incontinence (1. no UI, 2. post-void dribbling (PVD)/post-void UI only, and 3. UI) and comparisons were made using ANOVA and multivariable regression. Men with a history of prostate cancer and a neurogenic bladder were excluded.

Results: Of the 477 men, 24% had no UI, 44% had PVD/post-void UI only, and 32% had UI. Black men and those with sleep apnea were more likely to be in the UI group compared to the no UI group (odds ratio [OR]=3.2, p=0.02 and OR=2.73, p=0.003, respectively). Compared to men without UI and men with PVD/PV-UI only, men with UI had higher scores (more severe symptoms) on PROMIS fecal incontinence (5.4±2.3 [UI] vs. 4.5±1.4 [PVD] vs. 4.5±1.5 [non-UI], p=0.001), diarrhea (47.9±8.0 [UI] vs. 46.5±7.3 [PVD] vs. 45.0±6.9 [non-UI], p=0.04), and constipation scales (50.5±7.9 [UI] vs. 48.2±7.3 [PVD] vs. 47.0±17.4 [non-UI], p=0.01, Table). PROMIS depression and anxiety scores were also higher in the UI group compared to the non-UI group by 6.0 and 5.3 points and by 3.1 and 2.7 points compared to the PVD/PV-UI only group, respectively, as were scores on the Perceived Stress Scale (13.0±7.2 [UI] vs. 10.7±6.9 [PVD] vs. 8.4±5.9 [non-UI], p < 0.001). Groups did not differ on childhood traumatic events or erectile functioning after adjustment.

Conclusion: There was a high prevalence of UI in men seeking treatment for LUTS, associated with increased bowel, and psychological symptoms. Comprehensive symptom assessment including incontinence is essential for improving patient care and quality of life in men with LUTS.

Funding provided by grants from NIH/NIDDK

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<table>
<thead>
<tr>
<th>Bowel Symptoms</th>
<th>Overall (n=477)</th>
<th>UP (n=150)</th>
<th>PVD/PV-UI only (n=211)</th>
<th>non-UI (n=116)</th>
<th>p-value</th>
<th>Adjusted p-value</th>
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<tr>
<td>PROMIS GI Bowel Incontinence (raw scale)</td>
<td>4.8 (1.8)</td>
<td>5.4 (2.3)</td>
<td>4.5 (1.4)</td>
<td>4.5 (1.5)</td>
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<tr>
<td>PROMIS GI Diarrhea (T score)</td>
<td>46.5 (7.5)</td>
<td>47.9 (8.0)</td>
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<td>45.0 (6.9)</td>
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<td>50.5 (7.9)</td>
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<td>47.0 (7.4)</td>
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<td>Erectile Functioning</td>
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<td>IIEF</td>
<td>15.5 (11.3)</td>
<td>12.6 (10.9)</td>
<td>17.2 (11.0)</td>
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<td>Psychological Symptoms</td>
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<tr>
<td>PROMIS Depression (T score)</td>
<td>47.6 (8.3)</td>
<td>60.8 (8.8)</td>
<td>47.3 (7.9)</td>
<td>44.4 (7.0)</td>
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<td>PROMIS Anxiety (T score)</td>
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<td>45.1 (7.9)</td>
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<td>&lt;0.001</td>
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<td>Perceived Stress Scale</td>
<td>10.9 (7.0)</td>
<td>13.6 (7.2)</td>
<td>16.7 (6.9)</td>
<td>8.4 (5.9)</td>
<td>&lt;0.001</td>
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<td>Childhood Traumatic Events Scale</td>
<td>65%</td>
<td>65%</td>
<td>67%</td>
<td>59%</td>
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<tr>
<td>Childhood Traumatic Sexual Experience</td>
<td>7%</td>
<td>10%</td>
<td>5%</td>
<td>7%</td>
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<td>-</td>
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</table>

*p-value from chi-square or non-parametric ANOVA test of at least one pairwise difference between the three groups.

*Responded sometimes, often, or almost always on at least 1 of 6 LUTS Tool questions related to incontinence (excludes question related to PV/UI).

2Responded sometimes, often, or almost always to PVD and/or PV/UI question and never or rarely to remaining 6 LUTS Tool questions related to incontinence.

3Responded never or rarely to all 7 questions related to incontinence and 1 question related to PVD on LUTS Tool.
Introduction: Holmium laser enucleation of the prostate (HoLEP) is a commonly performed procedure for treatment of benign prostatic hyperplasia (BPH). Transient stress urinary incontinence (SUI) is a known phenomenon occurring in a small percentage of the patients undergoing a HoLEP. Persistent SUI after HoLEP is rare but a debilitating complication for the patient. Management of persistent SUI after HoLEP is not well described. We sought to determine the incidence and management of persistent SUI after HoLEP at our institution.

Methods: A retrospective review, from an IRB approved database, of all patients that underwent a HoLEP at our institution between February 2010 and September 2017 was performed. A total of 481 patients met inclusion criteria. Data regarding SUI post procedure was collected. Continued SUI beyond 3 months after surgery was defined as persistent SUI. Transient SUI was defined as incontinence that resolved within 3 months after surgery. Each patient with persistent SUI underwent injection of periurethral bulking agent Coaptite. The technique employed involved endoscopic injection of 2-4 ml of Coaptite in the distal prostatic urethra adjacent to the verumontanum. Change in their SUI was assessed by number of pads used per day.

Results: Of the 481 patients who underwent HoLEP, only 4 patients (0.008%) had significant persistent SUI. Transient SUI was present in roughly 15-20% of the patients. Preoperative urodynamic evaluation (UDS) of all 4 patients with persistent SUI revealed bladder outlet obstruction without any evidence of intrinsic sphincter deficiency or SUI. All 4 of these patients had significant bother from their SUI and required more than 2 pads per day. All 4 patients failed pelvic floor physiotherapy and underwent injection of periurethral bulking agent. After Coaptite injection, all 4 patients had significant improvement in their SUI, using less than 1 pad daily. This improvement in SUI after Coaptite injection was noted to last 7-12 months, with 2 patients requiring repeat injections at 7 months and 8 months respectively. Interestingly, 2 of the 4 patients with persistent SUI had neurological comorbidities – one with Multiple Sclerosis and one with Myasthenia Gravis.

Conclusion: Persistent SUI is a rare complication after HoLEP. Endoscopic injection of periurethral bulking agent is a viable surgical option for those patients that have bothersome persistent SUI. Preoperative UDS does not help in predicting SUI post HoLEP.
Poster #NM71

ADVANCE SLING IN PATIENTS WITH PREVIOUS PROSTATE RADIATION

Laura Nguyen, MD, Natalie Gaines, MD, Allison Gurney-McMaster, Esther Han, DO, Kenneth Peters, MD, Jason Gilleran, MD, Melissa Fischer, MD, Judith Boura, MS and Larry Sirls, MD

1San Antonio, TX; 2Rochester, MI; 3Royal Oak, MI

Presented By: Laura Nguyen, MD

Introduction: Advance slings are used to treat male stress urinary incontinence, often after prostate treatment. Our objective was to evaluate the effect of prior prostate radiation therapy (RT) on outcomes after Advance sling.

Methods: We retrospectively reviewed patients who underwent Advance sling placement from 2006 to 2016 at a large-volume teaching institution. Men were divided into groups by history of RT then compared. We defined cure as 0 pads per day or 1 safety pad or report of 100% dry, improvement as 1-2 pads/day and >50% improvement in leakage, and failure as >2 pads/day or <50% improvement in leakage.

Results: 134 men underwent Advance sling with complete data available. 36 patients (26.9%) had had RT (31 radical prostatectomy [RP] and RT, 2 transurethral resection of prostate [TURP] and RT, 3 RT only), while 98 did not (91 RP, 4 TURP, 3 no prior prostate treatment). Mean age was not different between groups (RT 61 years v. no RT 62 years, p=0.48). Preoperative number of pads and pad weight were higher in patients with previous RT but these differences were not statistically significant (number of pads: RT n=24, 2.4 pads v. no RT n=77, 2.0 pads, p=0.18; pad weight: RT n=4, 322g v. no RT n=28, 198g, p=0.12).

Overall rates of cure, improvement and failure were 53%, 33% and 14%, respectively. These rates did not significantly differ between groups (p=0.07). However, when cured and improved patients were grouped (“success”), outcomes were better in patients without prior prostate radiation (RT 27/36, 75% v. no RT 88/98, 90%; p=0.03; Table 1). Rates of complications and reoperation for sling revision/replacement were not different between groups. Reoperation for artificial urinary sphincter placement was more common in the RT group but this difference was not statistically significant (RT 8/34, 24% v. no RT 9/93, 10%; p=0.07).

Conclusion: Men with prior prostate RT had decreased success after Advance sling compared to men without prior RT, however 40% were cured and an additional 35% were improved. Advance sling is a viable option for appropriately selected patients after RT.

Funding: Philanthropy, Ministrelli Program for Urology Research and Education (MPURE)

<table>
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<tr>
<th>Outcome</th>
<th>Radiation (n=36)</th>
<th>No radiation (n=98)</th>
<th>p-value</th>
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<td>Cure</td>
<td>15 (41.7%)</td>
<td>56 (57.1%)</td>
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<tr>
<td>Improvement</td>
<td>12 (33.3%)</td>
<td>32 (32.7%)</td>
<td></td>
</tr>
<tr>
<td>Failure</td>
<td>9 (25.0%)</td>
<td>10 (10.2%)</td>
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</table>

Cure vs. improvement vs. failure 0.072
Cure or improvement vs. failure 0.030*
Poster #NM72
EVALUATING SUCCESS RATES AFTER ARTIFICIAL URINARY SPHINCTER PLACEMENT: A COMPARISON OF CLINICAL DEFINITIONS
Brian Linder, MD, Laureano Rangel and Daniel Elliott Mayo Clinic, Rochester, MN
Presented By: Brian J. Linder, MD

Introduction: To assess success rates of primary artificial urinary sphincter implantation using various objective, subjective, or retreatment definitions.
Methods: We identified 320 male patients who underwent primary AUS placement at the Mayo Clinic from 2010-2016. Of those, 222 had not undergone repeat surgery, and were sent a mailed, 148/222 (66.7%) responded. Eleven definitions of success were evaluated among responders. Associations between the definitions and patient-reported success were assessed via logistic regression and c-statistic.
Results: Treatment success rates were highly variable depending the definition used(14.8%-86.7%). Median follow-up was 24 months (IQR 8,40), during which 72% did not undergo reoperation. Among survey respondents, 87% felt at least "much better", and 47% reported surgery was “very successful”. Roughly 15% reported zero pad use. Patient-reported success was most strongly associated with the Patient Global Impression of Improvement (PGI-I) score (OR 0.07, 95%CI 0.02-0.19;p<0.0001. c=0.88). The largest difference in Michigan Incontinence Symptom Index score between treatment successes and failures was noted when success was defined by PGI-I as well (success group M-ISI 11 versus failure group M-ISI 24.15; OR 0.48, 95%CI 0.37-0.63; p<0.0001. c=0.97). In terms of pad count, use of a security pad or less was most closely associated with patient-reported success (OR 0.18, 95%CI 0.10-0.35; p<0.0001. c=0.75).
Conclusion: The “success rate” after primary AUS implantation varies widely depending on the definition used. While most patients report that surgery was beneficial, zero pad count was less common. Among definitions evaluated, the PGI-I had the strongest association with patients’ evaluation of surgical success.
Source of funding: None
Poster #NM73
BULKAMID INJECTION IN MEN – OPERATIVE TECHNIQUE AND PUTATIVE MECHANISM OF ACTION
Tamsin Greenwell, MD, FRCS, MB ChB¹, Jeremy Ockrim, MD, FRCS, MB ChB² and Eskinder Solomon, MSc³
¹UCLH Urology; ²UCLH Urology, UCLH, London UK; ³Dept. Medical Science, Guys Hospital, London, UK
Presented By: Tamsin Jillian Greenwell, MBChB, MD FRCS(Urol)

Introduction: Post-prostatectomy incontinence (PPI) is relatively common and of variable degree. Treatment of small volume persistent PPI with male sling or an artificial urinary sphincter is over invasive and the concept of intraurethral injection is very appealing in this situation. Bulkamid is a none particulate polyacrylamide and water polymer gel which is being used successfully in female stress urinary incontinence. We have assessed the feasibility and effects of a 4 point intra-urethral technique on maximum urethral closing pressure (MUCP) in male cadavers.

Methods: Urethral pressure profile (UPP) was measured twice on 2 male fresh frozen cadaver models before and after a 4 point injection of 2mls of Bulkamid intraurethrally at sphincteric level in 0.5mls aliquots using a 7Fr flexible needle (Olympus 00126).

Results: A clear UPP trace was recordable in both cadavers. The mean MUCP at baseline was 38 cm H2O and the mean MUCP following Bulkamid intraurethral injection was significantly increased to 51.25 cm H2O. (P<0.05)

Conclusion: Bulkamid intraurethral injection in male cadavers is a simple technique significantly increases MUCP. This raised MUCP may allow for treatment of PPI in men following prostate cancer treatment and warrants further study in the clinical situation.
Poster #NM74
LONG-TERM OUTCOMES OF ARTIFICIAL URINARY SPHINETER IMPLANTATION: A SINGLE CENTER EXPERIENCE
Alejandro Abello, MD and Anurag K. Das, MD, FACS
Beth Israel Deaconess Medical Center, Boston, MA
Presented By: Alejandro Abello, MD

Introduction: The artificial urinary sphincter (AUS) remains one of the most effective treatments for male stress urinary incontinence (SUI) generally occurring after prostatectomy. There are relatively few studies looking at long-term effectiveness and complications of AUS implantation. We present a ≥5 year follow-up of outcomes evaluating efficacy and complications in male patients with SUI post AUS implantation.

Methods: After IRB approval, we retrospectively analyzed all patients with AUS implantation and follow-up of at least 5 years. We recorded device effectiveness including pads per day and complications including device revisions and explantations. Survival analysis was performed using Kaplan-Meier curves.

Results: Between 1992 and 2012, adequate follow-up data were available for thirty-four male patients. 70% had a previous history of radical retropubic prostatectomy (RRP) alone and 20% had RRP + radiation therapy. The remaining 10% had assorted causes. The mean age was 69 years old with a mean follow-up after implantation of 116.5 months (Range: 60-285). Baseline mean pads per day use was 3.6 (Range: 1-10) and 44% had a previous history of bladder neck contractures with a mean number of dilations or incisions of 3.7. AUS implantation was performed through a classic two-incision technique using a single AMS 800 ™ cuff with bulbar urethral placement. Twelve patients required between 1-3 device revisions and one patient required 5. The device revision-free survival was 76% (CI 58-87%) at 5 years and 56% (CI 32-75%) at 15 years. Common causes for revisions were persistent incontinence or device malfunction in 68%, erosions in 16%, trauma in 12% and infection in 4%. The rates were similar between patients with and without radiotherapy. Explantation after 5 years was done in four patients for device erosion at 60, 69, 153 and 200 months. Mean pads per day use as a measure of continence was 0.6 at 1 year, 1.1 at 5 years and 1.0 at last visit.

Conclusion: The AUS provides excellent long-term outcomes with less than 25% of patients requiring revisions at 5 years and less than 50% at 10 years. Although the numbers are relatively small, radiated patients did not show worse outcomes.
Poster #NM75
PATIENTS WITH PRIOR PUDENDAL NERVE ENTRAPMENT SURGERY CAN BENEFIT FROM PUDENDAL NEUROMODULATION
Kenneth Peters, MD1, Patrick Vecellio2, Kim Killinger1,2, Esther Han, DO1, Laura Nguyen, MD1 and Judith Boura1,2
1Beaumont Health-Royal Oak, Royal Oak, MI; 2Oakland University Wm. Beaumont School of Medicine, Rochester, MI;
Presented By: Kenneth M. Peters, MD

Introduction: Patients with intractable pain in the distribution of the pudendal nerve may benefit from pudendal neuromodulation. However, some of these patients have previously undergone pudendal nerve entrapment surgery (PNES), which may alter the anatomy and function of the pudendal nerve. We examined pudendal neuromodulation outcomes in patients with prior PNES.

Methods: Patients with a history of PNES and quadripolar, tined pudendal lead placement for urogenital pain were reviewed. Symptom and short-term outcomes were collected from existing medical records. Patients undergoing pudendal neuromodulation with a history of prior PNES were compared to patients with no prior PNES that also had a pudendal lead placed. Data were examined with descriptive statistics, Fisher’s exact tests, and Wilcoxon rank sum tests.

Results: 15 patients with a history of 1, 2 or 3 prior PNES (n= 13, 1, and 1, respectively) were evaluated. Most (10; 67%) were female, with bilateral pain (9; 60%), and symptoms of 5 to 26 years duration. Precipitating events reported in 12 patients were fall/trauma (6; 50%), prolonged sitting (4; 33%), and a surgical procedure (2; 17%). During pudendal lead placement, nerve stimulation (compound muscle action potential, CMAP) was demonstrated on 1, 2, 3, and 4 electrodes in 1, 5, 3, and 6 patients respectively; 2 patients had a second lead placed for bilateral stimulation (each lead had 3 active electrodes). Two lead implantations were noted to be difficult due to prior surgery/scar tissue. After trialing the lead for approximately two weeks, bladder symptoms and pain were improved in 8/12 and 9/14 patients, respectively, and 80% of patients (12/15) underwent permanent generator implantation. When prior PNES patients were compared to those with pudendal lead placement and no prior PNES (n=43), gender (67% vs. 77% female; p=0.50), age (median 63 vs. 58 years; p=0.80), and median lead implant time (48 vs. 50 minutes; p=0.65) were similar; however, BMI differed (mean 24 vs. 29; p=0.008) and a lower proportion (12/15; 80% vs. 42/43; 98%; p=0.049) had generator implantation.

Conclusion: Chronic neuromodulation via quadripolar lead placement at the pudendal nerve can be a viable treatment option in patients with prior pudendal nerve entrapment surgery.
Funding: Philanthropy (Ministrelli Program for Urology Research and Education-MPURE)
Poster #NM76
DETRUSOR OVERACTIVITY IN PATIENTS WITH ADJUNCTIVE BOTULINUM TOXIN A INJECTION AFTER NEUROMODULATION
Jason Gilleran, MD, Brian Yuhan, BS1, Kim Killinger, MSN2, Jamie Bartley, DO2, Laura Nguyen, MD2, Esther Han, MD2, Larry Sirls, MD2, Judy Boura, MSN2 and Kenneth Peters, MD2
1Rochester, MI; 2Royal Oak, MI
Presented By: Jason P. Gilleran, MD

Introduction: Concomitant use of sacral neuromodulation (SN) and botulinum toxin (BTX) is uncommon, but may be considered in cases of severe refractory overactive bladder (OAB). We have previously shown that detrusor overactivity (DO) was seen more often in those receiving BTX after SN, and studied if the degree of DO was a factor in requiring BTX treatment.

Methods: We retrospectively reviewed patients in our prospective neuromodulation database who underwent adjunctive BTX injections after successful staged SN implantation, and compared them to those who did not receive BTX. We reviewed urodynamic tracings (UDT) of only those who had DO on their pretreatment UDT. Parameters included presence of DO leak, volume at first DO (VH2O first DO), maximum amplitude of DO (Max Pdet DO), volume at maximum amplitude (VH2O maxPdet DO), and maximum cystometric capacity (MCC). Descriptive statistics were performed.

Results: Of 281 patients, we identified 57 patients with complete UDT for review and DO - 46 with SN only and 11 with SN + BTX. Demographics, primary indication for neuromodulation, and treatments prior to neuromodulation did not significantly differ between groups except that a higher proportion in the BTX group were men (10.9% vs 45.5%, p = 0.017). Primary diagnosis was 81% OAB wet in SN vs 100% in the SN + BTX group. Presence of DO leak was seen in 63% and 81% in SN vs SN+BTX. There were no significant differences in any urodynamic parameters associated with DO between the two groups (Table).

Conclusion: Despite the finding of DO at baseline UDT, there were no parameters associated with the DO to identify who would require additional BTX. The finding of more men requiring BTX may give consideration to this treatment in men with DO on UDT. More studies are required to corroborate these findings.

Funding: Philanthropy; Ministrelli Program for Urology Research and Education (MPURE)

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<tr>
<th>Table Median (Range)</th>
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<th>SN+Botox N=11</th>
<th>p-values</th>
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<td>VH2O at first DO</td>
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<tr>
<td>Pdet at first DO</td>
<td>18 (7-72)</td>
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<td>VH2O first leak</td>
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<td>Max Pdet DO</td>
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<td>VH2O maxPdet DO</td>
<td>233 (6-510)</td>
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<td>MCC</td>
<td>306 (70-838)</td>
<td>229 (171-424)</td>
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Poster #NM77

SALVAGE SACRAL NERVE STIMULATION AFTER INADEQUATE RESPONSE TO ONABOTULINUUMTOXIN A FOR THE TREATMENT OF OVERACTIVE BLADDER – IS THERE HOPE AFTER CROSSOVER?

Shree Agarwal, BS1, Patricia Zahner, MD2, Laura Giusto, MD2, Jessica Lloyd, MD2, Juan Guzman, MD2, Courtenay Moore, MD2, Raymond Rackley, MD2, Sandip Vasavada, MD2 and Howard Goldman, MD2

1Cleveland Clinic, Cleveland, OH; 2Cleveland, OH

Presented By: Shree Agarwal, BS

Introduction: OnabotulinumtoxinA (BTX-A) injections and sacral nerve stimulation (SNS) are commonly used third-line therapies for the treatment of overactive bladder. Randomized controlled trials have examined the efficacy and safety of these therapies; however, the rate of treatment crossover among those who receive both therapies has yet to be reported. We examine the treatment efficacy of SNS in patients initially receiving BTX-A injections.

Methods: A retrospective review of adult patients who underwent BTX-A injections and SNS implantation at a tertiary care center from January 2007 to September 2017 was conducted. We identified 74 patients who underwent SNS and BTX-A therapy and selected patients who had SNS device implantation after receiving BTX-A previously. We assessed clinical characteristics such as etiology and indications for therapy, the number, dose, and duration of BTX-A injections prior to undergoing implantation of the SNS device, and subsequent outcomes by chi-square analysis and t-test analyses.

Results: Thirty-two patients underwent BTX-A injection prior to SNS implantation, with a mean follow up after implantation of 34 months. The median age was 69 years (IQR 52-76), with median BMI 29 kg/m^2 (IQR 24-34), and 91% were female. The most common indications for implantation were urinary frequency (94%), urge urinary incontinence (94%), and diagnosis of neurogenic bladder (25%). Among patients who underwent urodynamics (94%), 59% demonstrated detrusor overactivity, 13% low compliance, and 3% detrusor sphincter dyssynergia. Prior to implantation, patients received an average of two injections/year over a mean duration of 15 months. The mean time between final botox injection and SNS implantation was 14 months. Complications following SNS implantation occurred in four patients (13%), two of whom were catheter dependent at baseline (p = 0.05). Following SNS implantation, 63% of patients reported improved urinary symptoms. Among the five patients who returned to BTX-A following implantation (16%), three had neurogenic bladder (p = 0.05), two had urinary retention following initial BTX-A (p = 0.01), and four required SNS re-operation (p = 0.01).

Conclusion: SNS implantation after BTX-A therapy is a viable treatment option, with a majority of patients reporting an improved outcome. In our series, 16% of patients elected to undergo post-SNS implantation BTX-A, suggesting a role for dual therapy in this subgroup.
Poster #NM78
TRENDS IN THIRD LINE OAB THERAPIES: AN ANALYSIS OF OF CASE LOGS
Siri Drangsholt, MD, Jeremy Slawin, MD and Benjamin Brucker, MD
NYU, New York, New York
Presented By: Siri T. Drangsholt, MD

Introduction: The purpose of this study is to investigate current trends in third line treatments for Overactive Bladder (OAB) including sacral neuromodulation (NM), percutaneous tibial nerve stimulation (PTNS) and chemodenervation (CD) and explore how surgeon characteristics may influence these trends.

Methods: Data on third line OAB treatment procedures performed between 2010 and 2016 by certifying and recertifying non-pediatric urologists were obtained from The American Board of Urology annualized case logs. CPT codes 64581 (NM), 64561 (NM), 64553 (PTNS), 64566 (PTNS) and 52287 (CD) were collected. It should be noted that 52287 was new in 2013. Demographic data of the physicians were collected. Univariate analyses between surgeon characteristics and number of procedures were performed.

Results: From 2010 to 2016, 5,499 non pediatric case logs were examined. 1,236 urologists performed CD or NM, no urologists logged PTNS cases. Practitioners performed an average of 12 NM and 8 CD procedures during the 6 month case log. General urologists accounted for the highest overall volume of third line procedures in aggregate, whereas academic urologists performed the most on a per-person basis. Univariate analysis revealed FPMRS specialty vs general urology (P<0.001) and recertification vs primary certification (P<0.01) were significant predictors of third line volume. Practice size, gender and years in practice were not significantly associated with number of procedures performed. Since 2010, usage of third line therapies has increased. NM usage peaked in 2012 and has since been declining (figure 1). Early adopters of CD were not found to be those already performing NS. The case mix is unknown for both CD and NM procedures.

Conclusion: Third line therapies have increased considerably in the past 6 years. PTNS procedures were likely not logged due to only recent insurance coverage. The number of CD (generally onabotulinum toxinA) procedures increased rapidly and are now more common than NM, likely driven by the increased use of botox. Urologists that perform CD appear to be a different group than those who perform NM encouraging further research to explain why surgeons perform one particular therapy.
Poster #NM79
SACRAL NEUROMODULATION TINED LEAD INFECTION RATE AT 5 YEARS POST-IMPLANT
Steven Siegel, MD1, Jason Bennett, MD2, Jeffrey Mangel, MD3, Craig Comiter, MD4, Samuel Zylstra, MD5, Tomas L. Griebling, MD6, Erin T. Bird, MD7, Suzette E. Sutherland, MD8, Fangyu Kan, MS9 and Kellie Chase Berg, MS9
1Metro Urology; 2Female Pelvic Medicine, Grand Rapids, MI; 3MetroHealth Medical Center, Cleveland, OH; 4Stanford University, Stanford, CA; 5Milford Regional Medical Center, Whitinsville, MA; 6University of Kansas, Kansas City, KS; 7Scott and White Healthcare, Temple, TX; 8University of Washington, Seattle, WA; 9Medtronic, Minneapolis, MN
Presented By: Steven W. Siegel, MD

Introduction: InSite is a prospective, multicenter post-approval study of sacral neuromodulation (SNM) with the InterStim™ system to 5 years. Subjects with bothersome symptoms of OAB including urinary urge incontinence (UI) and/or urgency-frequency (UF), who had not exhausted all medication options (failed at least 1 anticholinergic medication and had at least 1 medication not tried) were included. This analysis reports the cumulative infection rate associated with the tined lead at 5 years.

Methods: Subjects completed test stimulation with an external neurostimulator and if successful went on to full InterStim system implant. Implanted subjects were followed at 3, 6, 12 months, and then annually to 5 years. Adverse events including infections were collected at scheduled and unscheduled visits. Months from full system implant to first infection due to the tined lead in each subject was the outcome metric, regardless of when the subject was implanted during the study. An infection associated with the tined lead was defined as any adverse event with an etiology of lead tract or lead introducer site. Subjects lost-to-follow-up or who did not experience such events were treated as censored observations. Results are reported as the Kaplan-Meier estimate of the survival function at 5 years with the Greenwood standard error. All implanted subjects were included in the analysis.

Results: Of the 340 subjects who went through test stimulation, 272 were implanted and of these, mean age was 57 years and 91% were female. At 5 years, the infection rate associated with the tined lead was 1.2% (95% CI: 0.0% - 2.5%). A total of four adverse events of infections associated with the tined lead occurred in 3 subjects on or after neurostimulator implant. All four adverse events were due to implant site infection. Two subjects experienced 1 adverse event each; in both cases the neurostimulator and lead were explanted. One subject experienced 2 adverse events; they were originally treated with oral antibiotics but subsequently had the neurostimulator and lead explanted. The four infections occurred at 1 month, 3 months, 10 months and 18 months post-implant. All events were resolved without sequelae.

Conclusion: In subjects implanted with the InterStim system, a 5-year tined lead infection rate of 1.2% is low. In this current large, multicenter study a low and acceptable lead infection adverse rate has been demonstrated.
Poster #NM80
DEVELOPMENT OF A NEUROSTIMULATOR IMPLANT TECHNIQUE FOR TIBIAL NERVE STIMULATION
George Stone, MD¹, Daniel Gruber, MD² and Jerome Buller, MD, MBA³
¹Walter Reed National Military Medical Center; ²Walter Reed National Military Medical Center, Bethesda, MD; ³Uniformed Services University of Health Sciences, Bethesda, MD
Presented By: George W. Stone, MD

Introduction: An implantable neurostimulator may carry similar efficacy as posterior tibial nerve stimulation without the burden of inconvenience. Our objective is to explore the lower legs of cadaveric specimens to gain a thorough understanding of the course of the tibial nerve, its relationships to adjacent anatomy; to identify the optimal location(s) for placement of an implantable electrical stimulation device; and to develop a surgical technique to minimize risk to future patients. The design is anatomic dissection & proof of concept study.

Methods: Surgical exploration of the tibial nerve and adjacent structures was performed on preserved lower extremity specimens. The course of the tibial nerve and the relationship to adjacent anatomical structures was carefully identified from the popliteal fossa distal toward the ankle. Fresh specimens were utilized to begin the development of surgical implantation procedures for optimal placement of a small implantable electrical stimulation device adjacent to the tibial nerve.

Results: The nerve travels superficially at the confluence of the medial border of the soleus and the flexor digitorum longus, where it then travels parallel to the calcaneal tendon inferiorly towards the foot and just beneath the flexor retinaculum. This superficial path length varied in all dissections, from 5-8cm, with proximal emergence from beneath the soleus accounting for variation.

The prominence of the medial malleolus was the ideal anatomic landmark for locating the tibial nerve, as the nerve passed 3cm posterior to this site in all specimens, and remained superficially accessible cephalad to this point, travelling parallel to the calcaneal tendon. A proposed procedure for implantation of a quarter-sized implantable tibial nerve stimulation device was developed, with the center of the device resting at a point 3cm cephalad and 3cm posterior to the medial malleolus. By creating a horizontal incision cephalad to this point, and dissecting through the subcutaneous tissue, the device could be bluntly slid down to the implantation site atop the underlying fascia without disrupting neurovascular structures.

Conclusion: This study identified the important and relevant landmarks surrounding the tibial nerve. Additionally, a small implantable device could be surgically inserted and centered above the tibial nerve in a safe, reliable fashion.
Introduction: Overactive Bladder syndrome (OAB) affects roughly 16.6% of the population. Third-line therapies for those refractory to medical therapy include percutaneous tibial nerve stimulation (PTNS). There is a paucity of data that looks at whether patients continue with PTNS therapy or if they move on to other therapies at the completion of their initial 12 weekly sessions. The aim of this study was to evaluate the characteristics at the patient global impression of improvement (PGII) scores of those who complete PTNS treatment and those who continue post treatment neuromodulation versus other therapeutic options.

Methods: This is a case control study at a single academic institution. Subjects filled out an initial patient global impression of severity (PGIS) questionnaire and treatment satisfaction was monitored with PGII at each visit. Following the 12 sessions, subjects were given the option to continue maintenance PTNS, to pursue other third line options, or resume medication. Final PGII scores were correlated with post-PTNS treatment choice.

Results: Sixty eight subjects were eligible for treatment completion and 75% (51/68) completed 12 weekly sessions. Subjects were more likely to continue monthly maintenance therapy than any other treatment choice (56.9%, p<0.01); 13.7% opted for onabotulinumtoxinA (OnaBot) or sacral neuromodulation (SNS). Those who continued monthly PTNS had significantly greater perceived improvement at 12 weeks than those who did not [PGII 2.70 (+1.06) vs 3.81(+1.07); p=0.01]. Those who continued with any neuromodulation (PTNS or SNS) also had greater perceived improvement than those who did not [2.73(+1.06) vs 3.81(+1.01); p=0.04].

Conclusion: Subjects who initially chose PTNS as a third line therapy were more likely to continue monthly PTNS than to change to an alternate therapy. Greater improvement, as measured by PGII scores, correlated with continuation of neuromodulation therapy. The majority of patients (52.9%) who started PTNS continued with some form of 3rd line OAB treatment. Of those that did not continue with monthly PTNS, 10.3% went on to OnaBot or SNS.
Poster #NM82
LONG-TERM (> 8Y.) FUNCTIONAL OUTCOMES OF S3 SACRAL NEUROMODULATION FOR THE TREATMENT OF IDIOPATHIC OVERACTIVE BLADDER
Emmanuel Chartier-Kastler, MD, PhD1, Salima Ismail, MD2, Marie-Aimée Perrouin-Verbe, MD2, Johan Rose Dit Modestine, MD2, Pierre Denys, MD, PhD1 and Veronique Phe, MD, PhD2
1Urology, Paris 6, France; 2Pitié-Salpêtrière Hospital, AP-HP, Paris, France
Presented By: Emmanuel J. Chartier-Kastler, MD, PhD, FEBU

Introduction: To assess the long-term functional outcomes of sacral neuromodulation (SNM) in the treatment of refractory idiopathic overactive bladder (IOAB) and to determine predictive factors for success.

Methods: All consecutive patients suffering from IOAB and treated by SNM at a single tertiary care center, from 1996 to 2004, were included in this study. Data regarding patient demographics, past medical and surgical history, bladder diary, complications according to the Clavien-Dindo classification as well as device revision and removal rates were collected. Success was defined as an improvement ≥50% of any clinical parameter.

Results: Overall, 34 patients (31 women and 3 men), with a median age of 57.8 years (IQR 44.8-65.7) were included. The median duration of urinary symptoms before SNM implantation was of 60.0 months (IQR 31.5-120.0). PNE and tined lead evaluation were used in 15 (44.1%) and 19 (55.9%) patients, respectively. Immediately after definitive implantation, 2 (5.9%) patients were lost to follow-up. An early postoperative complication, classified as Clavien-Dindo grade I (pain), occurred in 1 (3.1%) patient. After a mean follow-up of 8.3 years (±5.1), SNM was considered successful in 20 (62.5%) patients. Moreover, 31 (96.9%) patients reported having a significant improvement at six weeks postoperatively. The efficacy decreased in 12 (37.5%) patients after a mean of 4.3 years (±4.0). The mean amount of protections/24h used was significantly decreased (4.1 versus 1.8 at the last follow-up visit, p=0.02). Devices were removed in 2 (6.2%) patients due to pain and lack of efficacy. Twenty-two revision surgeries were performed in 15 (46.9%) patients. The first revision surgery occurred after a mean of 6.2 years (±3.1). The five- and ten-year revision-free survival rates were of 77.6% and 30.1%, respectively. The reasons for the revision surgeries were as follows: end of battery life/device dysfunction (n=18, 81.8%), electrode displacement (n=2, 9.1%), device displacement (n=1, 4.5%) and bilateral implantation (n=1, 4.5%) for decreased efficacy. No significant predictor for success was identified.

Conclusion: Long-term data on implantable medical devices are much needed. Limited long-term data from nation-wide registries are currently available (≤ 5 y.). This retrospective SNM study reports a 62.5% efficacy rate for the treatment of refractory IOAB. Moreover, it is a well-tolerated and minimally invasive therapy.
Poster #NM83
SUPER REFRACTORY OVERACTIVE BLADDER: A CHALLENGING PATIENT POPULATION WITH A HIGH DEGREE OF PELVIC FLOOR COMORBIDITY
Dena Moskowitz, MD1, Karmon Janssen, DO2, Katherine Amin, MD1, Alvaro Lucioni, MD1, Kathleen Kobashi, MD1 and Una Lee, MD1
1Virginia Mason Medical Center, Seattle, WA; 2Madigan Army Medical Center, Tacoma, WA
Presented By: Dena Moskowitz, MD

Introduction: Third line therapies are effective treatment for patients who are refractory to more conservative measures, and include sacral neuromodulation (SNM), percutaneous tibial nerve stimulation (PTNS), and intradetrusor injection of onabotulinumtoxinA (BTX). A minority of patients do not respond well to 3rd line therapy and require additional treatment. We describe this population of super refractory (SR) OAB patients at our tertiary referral center.

Methods: A query of our electronic medical record identified all patients who underwent multiple 3rd line therapies from 8/1/12 to 8/1/17. Patients were excluded if their primary indication was urinary retention. A retrospective chart review identified clinical characteristics, urodynamic parameters, and reason for multiple third line therapies. We used our prospectively collected database to examine Patient Global Impression of Improvement (PGI-I), percent improvement, and patient satisfaction.

Results: 54 patients were identified, 51 of whom met inclusion criteria, representing 10% of 3rd line therapy patients. 40 had BTX/SNM, 5 had BTX/PTNS, 3 had SNM/PTNS, and 3 had BTX/SNM/PTNS. First therapy was BTX in 31%, SNM in 57%, and PTNS in 12%. 53% of patients were followed for more than 5 years. 37% had previous pelvic floor surgery, and 35% had surgery at our institution for pelvic floor dysfunction other than OAB. Psychiatric and chronic pain diagnoses were seen in 41% and 43%. The most common reason for additional 3rd line therapy was lack of improvement, followed by augmentation of current therapy, patient preference, side effects, and requirement for MRI. Median (IQR) PGI-I score, percent improvement, and satisfaction were 3 (2,4.25), 20 (-10,72.5), and 4 (2,9) with median (range) follow up of 12.5 (4-90) months.

Conclusion: Our data describe a unique population of OAB patients with a high incidence of concomitant pelvic floor disorders, as well as psychiatric and chronic pain diagnoses. SR-OAB patients are a challenging population who continue to pursue treatment options most commonly due to dissatisfaction with symptom control. This SR-OAB population is an opportunity to study and improve our understanding of the heterogeneity of OAB.

<table>
<thead>
<tr>
<th></th>
<th>n=51</th>
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<tbody>
<tr>
<td>Age at first procedure, years, median (IQR)</td>
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<td>Gender, n</td>
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</tr>
<tr>
<td>Male: 6</td>
<td></td>
</tr>
<tr>
<td>Female: 45</td>
<td></td>
</tr>
<tr>
<td>BMI, kg/m², mean (SD)</td>
<td>29.7 (6)</td>
</tr>
<tr>
<td>Chronic pain diagnosis, n (%)</td>
<td>22 (43)</td>
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<tr>
<td>Psychiatric diagnosis, n (%)</td>
<td>21 (41)</td>
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<tr>
<td>Major depressive disorder: 15 (29)</td>
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<tr>
<td>Anxiety: 8 (16)</td>
<td></td>
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<tr>
<td>Bipolar disorder: 2 (4)</td>
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<tr>
<td>Post-traumatic stress disorder: 3 (6)</td>
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<tr>
<td>Neurologic diagnosis, n (%)</td>
<td>14 (27)</td>
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<tr>
<td>Detrusor overactivity, n (%)</td>
<td>19 (39)</td>
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<tr>
<td>First 3rd line therapy received, n (%)</td>
<td>35 (69)</td>
</tr>
<tr>
<td>BTX: 16 (31)</td>
<td></td>
</tr>
<tr>
<td>SNM: 29 (57)</td>
<td></td>
</tr>
<tr>
<td>PTNS: 6 (12)</td>
<td></td>
</tr>
<tr>
<td>Reason for additional third line treatment, n</td>
<td>Not improved: 35</td>
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<tr>
<td>Augmentation of current treatment: 7</td>
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<tr>
<td>Side effect of previous treatment: 4</td>
<td></td>
</tr>
<tr>
<td>MRI needed: 2</td>
<td></td>
</tr>
<tr>
<td>Patient Preference: 6</td>
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</tr>
<tr>
<td>Currently taking OAB medication, n (%)</td>
<td>18 (37)</td>
</tr>
<tr>
<td>Total OAB treatment time, months, median (IQR)</td>
<td>64 (31.5,169.5)</td>
</tr>
<tr>
<td>PGI-I, median (IQR), n=20</td>
<td>3 (2.4.25)</td>
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<tr>
<td>Percent improvement, median (IQR)</td>
<td>20 (10,72.5)</td>
</tr>
<tr>
<td>Satisfaction, median (IQR)</td>
<td>4 (2.9)</td>
</tr>
</tbody>
</table>

Table 1. Demographic and clinical factors as well as outcomes in SR-OAB patients
Introduction: Percutaneous tibial nerve stimulation (PTNS) is an efficacious treatment for overactive bladder (OAB). Outside of clinical trials, no study to date characterizes treatment compliance or etiology of dropout during the initial 12 weekly sessions. Our objective was to characterize common etiologies of discontinuation of therapy in a cohort of patients undergoing PTNS in an outpatient office-based setting.

Methods: All patients who underwent PTNS from January 2014 to June 2017 were identified by CPT code 64566. Demographic and visit data were collected. Patients who completed all 12 sessions were compared to those who did not. Patients were queried to determine reasons for discontinuing therapy. Multiple variables were tested for correlation with dropout.

Results: 100 patients were identified. 71% (71/100) completed all 12 sessions. There was no significant difference in demographic variables between groups. Patients who dropped out completed a median of 8 sessions (IQR 8-9). The most common reasons for dropout were perceived lack of efficacy (n=11), required time commitment (n=6), and other medical comorbidities precluding treatment (n=5). There was no significant difference between groups in distance to clinic (10.9 vs 11.1 miles p=0.8), marital status (61% vs 72% p=0.18), or employment status (31% vs 31% p=0.9). Significant differences included subjective symptomatic improvement (87% vs 48% p<0.01) and active smoking status (6% vs 21% p=0.02). In a multivariate logistic regression model, smoking status (OR 0.05 p<0.01) and perceived symptomatic improvement (OR 24.46 p<0.01) remained significantly associated with noncompliance. Male gender was negatively associated with session completion (OR 0.13 p=0.02).

Conclusion: Overall, 71% of patients completed 12 weekly sessions. Of those that completed, 87% reported symptom improvement. The leading predictor of compliance was subjective symptomatic improvement. Active smoking and male gender appear to have a negative influence on treatment completion. Lack of efficacy and time commitment were the most commonly cited reasons for dropout.

Source of funding: None
Poster #NM85
DO URODYNAMICS ADD ANYTHING WHEN CONSIDERING NEUROMODULATION IN MEN?
Bradley Gill, MD, MS, Elidi Dielubanza, MD, Shree Agrawal, BS, Jessica Lloyd, MD, Juan Guzman, MD, Courtenay Moore, MD, Howard B. Goldman, MD, Sandip Vasavada, MD and Raymond Rackley, MD
Cleveland Clinic
Presented By: Bradley C. Gill, MD, MS

Introduction: Literature regarding sacral neuromodulation (SNM) in men is sparse, despite it being an effective therapy for refractory lower urinary tract symptoms. The role of urodynamic (UDS) testing prior to SNM in men is unknown. This study assessed for associations between UDS findings prior to SNM and subsequent utilization of the therapy.

Methods: All men undergoing SNM procedures from 2011-2015 within a large tertiary system were retrospectively reviewed. The sample was stratified by men having UDS 12 or fewer months before SNM (+UDS) and those without (-UDS). Demographics, comorbidities, prior urologic treatments, SNM indication, SNM utilization, and UDS diagnoses were collected. Descriptive and comparative statistics (t-test or chi-square test, as appropriate) were calculated. Logistic regressions of clinical and UDS parameters were used to identify factors related to SNM utilization.

Results: Of 56 men who underwent SNM, 28 were UDS+ and indications included OAB-wet (N=24), OAB-dry (N=20), and non-obstructive retention (N=12). Besides a significantly greater UDS+ BMI (30.4+6.5 v 27.3+4.6, p 0.045), age and other comorbidities did not differ between UDS+ and UDS- groups, nor did the prevalence of prior transurethral prostate procedures (17.9% v 25%, respectively). No men had stress urinary incontinence, but detrusor overactivity was present in 50% (N=14) of UDS+ men with 25% (N=7) having associated urgency urinary incontinence. Rates of obstruction (N=1), poor compliance (N=1), and hypocontractility (N=1) were low. Staged implants (N=53) were most common in UDS+ and UDS- men with no difference in Stage 1 trial success rates. Likewise, Stage 2 completion rates in UDS+ and UDS- (95.2% v 94.1%, respectively) did not differ. Of the 2 UDS+ and 1 UDS- peripheral nerve evaluations, all were successful SNM trials. Neither device revision nor explant rates differed by UDS status. The presence or absence of a UDS-proven diagnosis was not associated with Stage 1 success, Stage 2 completion, device revision, or device explant.

Conclusion: Sacral neuromodulation is a feasible and effective treatment for men with refractory lower urinary tract symptoms. Neither preoperative urodynamics, nor urodynamically-proven diagnoses were associated with clinical responses to sacral neuromodulation testing or utilization of the therapy. These findings suggest sacral neuromodulation may be safely used in men without the need for urodynamics.
Poster #NM86
EFFECTIVENESS OF INTRADETRUSOR ONABOTULINUM TOXIN A INJECTIONS IN MANAGING OVERACTIVE BLADDER AFTER INITIAL SACRAL NEUROMODULATION THERAPY
Hamilton Trinh, BS, Vicki Irish, CNP, Mierya Diaz-Insua, PhD and Humphrey Atiemo, MD
Detroit, Michigan
Presented By: Hamilton Trinh, BS

Introduction: Third-line therapies for treatment of overactive bladder (OAB) include sacral neuromodulation (SNM) and intradetrusor Onabotulinum toxin A (Botox) injections. While the success rate of Botox has been reported as 70-80% in the initial treatment setting, data is lacking on the predictors and efficacy of treatment success for Botox in patients who have failed SNM treatment. This study aims to measure the effectiveness of Botox in OAB patients where SNM has failed.

Methods: A retrospective chart review was performed of all patients treated with intradetrusor Botox injections from January 2013 to December 2016 in a single provider’s clinic after failing initial SNM. Pre-treatment bladder capacity and average volume of uninhibited detrusor contractions were recorded. Daily pad usage, daytime voiding frequency, AUA symptom scores, Quality of Life (QOL), and Michigan Incontinence Severity Index (m-ISI) severity and bother scores pre/post Botox treatment were compared using nonparametric and chi square tests (SPSS) to determine Botox efficacy in managing SNM failures. Post treatment values were recorded 2 months after the latest Botox injection. Successes were defined as patient willingness to continue Botox and failures were defined as patient discontinuation of Botox.

Results: 18 patients were identified that met our inclusion criteria. 7 patients were categorized as success, and 11 as failures. Patients in the success group showed a statistically significant improvement in daytime voiding frequency (pre-Botox median: 11 voids/day vs post-Botox: 7 voids/day, p=0.042). The fail group showed no statistically significant change in daytime voiding frequency. No statistically significant change in daily pad usage, AUASS, QOL, m-ISI severity and bother were observed in both the success and fail groups. Initial failure of SNM was associated with a high rate of failing subsequent Botox injection. $\chi^2(1) = 5.8$, p=0.016, OR = 3.6.

Conclusion: This study demonstrates the efficacy of Botox injections for OAB patients who fail initial SNM, where an improvement in daytime voiding frequency is observed. However, this success rate is lower than in SNM naïve patients.
Poster #NM87

OPTIMIZED SACRAL NEUROMODULATION LEAD PLACEMENT IS FEASIBLE AND DOES NOT INCREASE OPERATIVE TIMES

James Connor BA, BS 1, Amy Long, MSN 2 and Colin Goudelocke, MD 3
1 Lincoln Memorial University − DeBusk College of Osteopathic Medicine, Harrogate, TN; 2 Erlanger Health System; 3 Department of Urology, University of Tennessee - Erlanger, Chattanooga, Tennessee
Presented By: Colin Murrah Goudelocke, MD

Introduction: While there is no proven link to improved efficacy, optimized sacral neuromodulation (SNM) lead placement may result in increased implantable pulse generator (IPG) longevity, greater number of programming options or increased patient comfort with stimulation. Strategies for ideal lead placement have been described as have the characteristics of optimal lead implantation. However, concerns have been expressed as to how feasible it is to achieve these characteristics and of the effect on operative efficiency. We sought to evaluate achievability of ideal lead placement and the effect on operative times.

Methods: This is a retrospective review of SNM leads placed from November 2011 through February 2017 by a single surgeon at one institution. In November 2013, a transition was made to optimized lead placement using the techniques described by other authors and defined as opening motor thresholds at 2 volts or less on all four contacts. Only the presence or absence of motor response was recorded prior to transition; thereafter, motor threshold voltage was recorded. Operative times were available for the duration of the review. Only staged lead placements were compared.

Results: A total of 37 staged lead placements prior to transition and 140 after were reviewed. Before transition, the mean number of contacts yielding any motor response at any voltage was 2.76 [95% CI 2.56-2.96] and the percentage of lead placements with all four contacts demonstrating motor response was 10.8% (4/37). After transition, all but two leads (138/140) had a motor response on all four contacts at any voltage and most (88.6%) had opening threshold of motor response less than or equal to 2 V on all electrodes with 50% less than or equal to 1V. There was a significant progression in improvement in lead optimization after the first 35 leads placed. Mean placement time was 43.9 minutes [95% CI 40.3-47.5] before transition compared to mean of 42.1 minutes [95% CI 40.5-43.7] after. Only the first 10 leads (54.3 minutes [95% CI 44.4-64.2]) differed significantly from the mean of the overall series.

Conclusion: A strategy for optimized lead placement is feasible and has no long-term effect on operative time. Most leads placed met expectations for lead optimization. It remains to be seen whether this will positively affect short or long-term outcomes for SNM and whether benefits such as increased IPG longevity and patient comfort can be realized.
Poster #NM88
EDUCATION PRIOR TO URODYNAMICS INCREASES PATIENT SATISFACTION
Julia Han, MD, Russell Terry, MD, Mohit Gupta, MD, Aaron Braffman, MD, Anja Zann, MD, Andrew Rabley, MD and Louis Moy, MD
University of Florida Department of Urology
Presented By: Julia Han, MD

Introduction: Urologists often utilize urodynamic testing (UDS) in the evaluation of complex voiding problems, and this can be both physically and emotionally uncomfortable for some patients. Our group sought to create a tool to help supplement patient–physician conversations about UDS and to increase patient preparedness for the procedure.

Methods: We created a short educational video which can be accessed at the following link: https://www.youtube.com/watch?v=GK_iOuWjVY4. All patients who underwent first−time UDS in our clinic during a 3 month period were eligible for inclusion. The patients completed a 5−item questionnaire prior to watching the video in order to gauge their baseline understanding of UDS. They then watched the video, underwent the procedure, and completed a post−procedure 4−item survey to assess their preparedness for the procedure in relation to what they had learned from the video.

Results: A total of 24 patients participated, which represented all of the eligible patients to whom the surveys and video were offered. The pre−video questionnaire (Table 1) demonstrated a mixed understanding of the indications and steps involved in UDS. 62.5% of patients stated that they understood why the test was being performed, and only 33.3% felt that they understood what was going to happen during the test. 45.8% reported receiving helpful pre−procedural information from our clinic, and only 25% of patients reported seeking out information on their own prior to the procedure. The post−procedure survey (Table 2) demonstrated that >95% of the patients felt well−prepared for the procedure and 83% felt that the procedure aligned with their expectations. 100% agreed that the video provided useful information, and >95% would recommend the video to anyone prior to undergoing UDS.

Conclusion: Prior to watching the video, a large proportion of patients had a poor understanding of how UDS works and why it is performed. They did appear to have a general interest in learning more about the process, as evidenced by the 100% participation rate. Satisfaction with the video and feeling well−prepared retrospectively suggest that the video achieved its goal.

<table>
<thead>
<tr>
<th>Table 1: Pre-video and UDS Questionnaire</th>
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<tbody>
<tr>
<td>1. Do you understand what will happen during the urodynamic testing today?</td>
</tr>
<tr>
<td>a. Yes</td>
</tr>
<tr>
<td>b. No</td>
</tr>
<tr>
<td>c. Somewhat</td>
</tr>
<tr>
<td>2. Do you understand why the test is being done?</td>
</tr>
<tr>
<td>a. Yes</td>
</tr>
<tr>
<td>b. No</td>
</tr>
<tr>
<td>c. Somewhat</td>
</tr>
<tr>
<td>3. Did you receive any information from clinic to help you prepare?</td>
</tr>
<tr>
<td>a. Yes</td>
</tr>
<tr>
<td>b. No</td>
</tr>
<tr>
<td>c. Cannot remember</td>
</tr>
<tr>
<td>4. Did you look up any information on your own, such as an internet search?</td>
</tr>
<tr>
<td>a. Yes</td>
</tr>
<tr>
<td>b. No</td>
</tr>
<tr>
<td>c. Cannot remember</td>
</tr>
<tr>
<td>5. Do you agree to watch a short informational video?</td>
</tr>
<tr>
<td>a. Yes</td>
</tr>
<tr>
<td>b. No</td>
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<table>
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<th>Table 2: Post-video and UDS Survey</th>
</tr>
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<tbody>
<tr>
<td>1. Was the testing experience what you had anticipated?</td>
</tr>
<tr>
<td>a. Yes</td>
</tr>
<tr>
<td>b. No</td>
</tr>
<tr>
<td>c. Undecided</td>
</tr>
<tr>
<td>2. Did you feel adequately prepared?</td>
</tr>
<tr>
<td>a. Yes</td>
</tr>
<tr>
<td>b. No</td>
</tr>
<tr>
<td>c. Undecided</td>
</tr>
<tr>
<td>3. Did the video provide useful information before the exam?</td>
</tr>
<tr>
<td>a. Yes</td>
</tr>
<tr>
<td>b. No</td>
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<tr>
<td>c. Undecided</td>
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<tr>
<td>4. Would you recommend the video be viewed by everyone having this testing done?</td>
</tr>
<tr>
<td>a. Yes</td>
</tr>
<tr>
<td>b. No</td>
</tr>
<tr>
<td>c. Undecided</td>
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</table>
Poster #NM89*
CHARACTERIZATION OF BLADDER SENSATION EVENT DESCRIPTIONS DURING NON-INVASIVE ORAL HYDRATION IN HEALTHY ADULTS

Hameeda Naimi1, Anna S. Nagle, PhD2, Naomi N. Vinod1, Hiren Kolli1, Derek Sheen1, Uzoma Anele, MD1, Stefan G. De Wachter, MD, PhD3, John E. Speich, PhD2 and Adam P. Klausner, MD4
1Department of Surgery/Division of Urology, Virginia Commonwealth University School of Medicine, Richmond, VA; 2Department of Mechanical & Nuclear Engineering, Virginia Commonwealth University School of Engineering, Richmond, VA; 3Department of Urology, University Hospital Antwerpen, Edegem, University of Antwerpen, Wilrijk, Belgium; 4Department of Surgery/Division of Urology Hunter Holmes McGuire Veterans Affairs Medical Center, Richmond, VA
Presented By: Hameeda A. Naimi, BS
*SUFU Clinical Essay Winner

Introduction: Aside from ICS-defined verbal sensory thresholds, there is currently no standardized method of characterizing changes in bladder sensation during filling. The purpose of this investigation was to characterize real-time bladder sensation events using bladder sensation meter during oral hydration in individuals with normal bladder function.

Methods: Participants were enrolled in an accelerated hydration study consisting of three consecutive visits, 1 week apart. Participants drank 2L Gatorade-G2® and utilized a previously developed sensation meter to record real-time bladder sensation (0-100%), verbal sensory thresholds, and newly added sensation descriptors of “tense,” “pressure,” “tingling,” “painful,” and “other” for two consecutive fill-void cycles.

Results: Data from 21 participants (12 female/9 male) was obtained and demonstrated an average of 8-9 sensation events per fill with no differences in the total number of sensation events and volume between sensation events (fill 1 vs. fill 2). An increased number of sensation events occurred at higher capacity quartiles. Event descriptors of “pressure” and “tingling” were the most commonly chosen descriptors in both fills (Figure 1).

Conclusion: Our new sensation meter, updated to include sensation event descriptors of “tense,” “tingling,” “pressure,” and “pain,” enables a more comprehensive understanding of bladder sensation as well as real-time identification, quantification, and characterization of sensation events. The study demonstrates increased events per fill compared to ICS standards, acceleration of sensation during filling, and unique sensation event descriptor patterns. This technology may be useful in the identification of novel sensation patterns associated with OAB and aging.

![Figure 1](image_url)
Poster #NM90
DOES URODYNAMICS CHANGE DIAGNOSIS AND MANAGEMENT?
Keara English¹, Melissa Laudano, MD² and Nitya Abraham, MD²
¹Albert Einstein College of Medicine; ²Montefiore Medical Center, Bronx, NY
Presented By: Keara English, BA

Introduction: The literature supports that urodynamic studies (UDS) are not necessary to proceed to surgery in women who have demonstrable stress urinary incontinence (SUI). However, it is not clear whether UDS is necessary to guide diagnosis and treatment for other conditions. The objective of our study was to evaluate the indication for performing UDS and whether the findings changed the diagnosis or management.

Methods: This is a retrospective review of men and women who underwent UDS for any indication in our urology and urogynecology practices from 2014-2016. The indication for UDS was obtained from the office note preceding the study or from the indication listed in the UDS procedure note. Both the pre and post-procedure diagnoses were recorded. Additionally, any change in the treatment offered to the patient based on UDS findings was recorded. Change in diagnosis and treatment were reviewed independently and agreed upon by two voiding specialists. Chi-square was used to compare categorical variables. All p values were 2-sided and a level of .05 was considered statistically significant.

Results: 179 patients were included (33.5% men and 66.5% women.) Median age at time of UDS was 57 (IQR 50-68). Indications for UDS included differentiation of bladder outlet obstruction vs detrusor underactivity as the cause of urinary retention (34.6%), evaluation of whether mixed urinary incontinence was predominantly stress or urgency incontinence (20.7%), evaluation of neurogenic lower urinary tract dysfunction (NLUTD) (16.3%), evaluation of overactive bladder (14%), ruling out occult SUI in women with pelvic organ prolapse (12.3%), or other reasons (1.7%). The diagnosis before and after UDS and change in management varied by indication for the study. See table.

Conclusion: The diagnosis and management were least likely to change when UDS was performed for evaluation of overactive bladder, followed by mixed urinary incontinence. UDS seems to be most useful when performed to evaluate NLUTD. This data suggests that UDS could potentially be omitted in patients with uncomplicated overactive bladder.

<table>
<thead>
<tr>
<th>Indication for UDS</th>
<th>Change in Diagnosis after UDS</th>
<th>Change in Management after UDS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes (%)</td>
<td>No (%)</td>
</tr>
<tr>
<td>BOO or UAB n=62</td>
<td>53 (85)</td>
<td>6 (10)</td>
</tr>
<tr>
<td>MUI n=37</td>
<td>19 (51)</td>
<td>10 (27)</td>
</tr>
<tr>
<td>NLUTD n=30</td>
<td>29 (97)</td>
<td>1 (3)</td>
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<td>OAB n=25</td>
<td>3 (12)</td>
<td>19 (76)</td>
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<tr>
<td>SUI n=22</td>
<td>13 (59)</td>
<td>8 (36)</td>
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Poster #NM91
COMPARISON OF SIMPLE CYSTOMETRY VERSUS MULTICHANNEL URODYNAMIC EVALUATION
Hillary Wagner, MD, Julie Cheng, MD, MAE and Junchan Yune, MD
Loma Linda, CA
Presented By: Hillary Wagner, MD

Introduction: Both simple and multichannel cystometry provide bladder sensation and capacity, post-void residual (PVR), and stress test in a similar fashion. Although multichannel cystometry can measure detrusor pressure, detrusor overactivity (DO), and bladder compliance, it requires specialized equipment and can increase costs. The purpose of our study was to compare different urodynamic parameters between simple and multichannel cystometry.

Methods: The medical records of patients that underwent both simple and multichannel cystometry at our institution were reviewed. In our practice, most patients had simple cystometry during an initial visit and multichannel cystometry would be ordered per clinician discretion. Patients that underwent urologic interventions between testing were excluded. Both tests were conducted by the same clinical nurses and the same questionnaire was used for bladder sensation. Stress test (ST) and PVR were conducted in the same fashion except that ST was repeated after catheter removal in simple cystometry. Detrusor overactivity during simple cystometry was diagnosed when there was an obvious rise of water level or leakage without ST.

Results: A total of 487 patients were identified. The average interval between the two tests was 4 weeks. The mean PVR was 53.0 mL in simple cystometry and 82.5 mL in multichannel cystometry with an average difference of 29.5 mL. There was a greater than 150mL difference in PVR in 6.6% of subjects. With an abnormal PVR defined as greater than 150mL, 14.3% of subjects showed a discrepancy in PVR between the two tests. The average difference of first sensation, first desire to void, and strong desire to void was 18.0mL, 35.6mL, and 72.7mL, respectively. With abnormal capacity defined as strong desire to void at less than 300 mL, 62.2% of subjects had discrepancies in capacity between the two tests. Positive ST was found in 51.1% during simple cystometry and 48.9% in multichannel cystometry. Among the urodynamic stress urinary incontinence patients, only 34.7% (n=169) had a positive stress test in both simple cystometry and multichannel cystometry. The sensitivity of simple cystometry for diagnosis of DO was 31.7% using multichannel cystometry as the gold standard.

Conclusion: The reproducibility of PVR, bladder sensation, capacity, and ST for stress urinary incontinence was low between simple and multichannel cystometry.

FUNDING: None
Poster #NM92
DO AMBULATORY URODYNAMIC STUDIES CHANGE URODYNAMIC OR CLINICAL DIAGNOSIS AND/OR TREATMENT IN PATIENTS WITH NONE-DIAGNOSTIC OR SYMPTOMATICALLY CONTRADICTORY BASELINE URODYNAMICS.
Richard Axell, MSc1, Vahit Guzelburc, MD, FEBU², Megan Duffy, MSc³, Sarah Itam, MD, FRCS , MB ChB³, Mahreen Pakzad, MD, FRCS , MB ChB³, Rizwan Hamid, MSc, FRCS , MB ChB³, Jeremy Ockrim, MD, FRCS , MB ChB³ and Tamsin Greenwell, MD, FRCS , MB ChB³
¹UCLH Urology; ²Istanbul, Turkey; ³UCLH Urology, UCLH, London, UK
Presented By: Richard Axell, BEng, MSc, PhD

Introduction: To assess whether ambulatory urodynamic studies change in urodynamic diagnosis, clinical diagnosis and/or treatment in patients with none-diagnostic or symptomatically contradictory baseline urodynamics.

Methods: The baseline urodynamic diagnosis and treatment in 84 consecutive patients of median age 50.5 years having ambulatory urodynamics between 1st January 2015 and 31st December 2015 were reviewed and compared with the ambulatory urodynamic diagnosis and ensuing treatment. 2 (2%) patients were diagnosed as having ‘normal’ ambulatory urodynamics.

Statistical analysis was by Students T-Test for parametric and Mann Whitney U Test for None Parametric Data.

Results: Change in primary urodynamic diagnosis occurred in 66 (79%) patients. Change is clinical diagnosis occurred following ambulatory urodynamics in 59/66 (89%) patients who had their urodynamic diagnosis changed on ambulatory urodynamics, of whom 55/59 (93%) also had their management changed. Change in clinical diagnosis occurred following ambulatory urodynamics in 10/18 (56%) who did not have their urodynamic diagnosis changed on ambulatory urodynamics of whom 10/10 (100%) had their management changed.

Management was also changed in 4/8 (50%) of patients with no change in their urodynamic or clinical diagnosis post ambulatory urodynamics

Conclusion: Ambulatory urodynamics resulted in change of; primary urodynamic diagnosis in 79% of patients, clinical diagnosis in 82% of patients and management in 82% of patients.
Poster #NM93
INCORPORATION OF MINDFULNESS EXERCISES TO REDUCE ANXIETY AND PAIN DURING URODYNAMIC TESTING: A RANDOMIZED CONTROLLED PILOT STUDY
Pansy Uberoi, MD, MPH, Anna Smitherman, PhD and Forrest Jellison, MD
San Antonio, TX
Presented By: Pansy Uberoi, MD, MPH

Introduction: Mindfulness exercises have shown improvement in emotional coping and reduction of anxiety, leading to their incorporation into treatment for acute and chronic pain conditions. The present trial compares the impact of mindfulness exercises as they pertain to anxiety and pain levels among patients undergoing invasive in-office urodynamics.

Methods: Fourteen patients were randomized to either psychologist led mindfulness exercises or an empty quiet room prior to undergoing urodynamic testing. The personnel performing urodynamics were blinded to the intervention. The primary outcome, reduction of anxiety after urodynamics, was measured by the state-trait anxiety inventory (STAI-6). STAI-6 consists of questions regarding positive aspects of mood and negative aspects of mood. Secondary outcome of pain was measured by the visual analog scale (VAS). Participants completed questionnaires at baseline, after control/study intervention, and immediately after urodynamic testing. Wilcoxon-Mann-Whitney test was performed for difference between anxiety and pain between groups. Secondary analyses were performed with Wilcoxon sign rank test to measure differences in changes within each group.

Results: Demographics, past medical history and presenting symptoms were similar between the groups. After undergoing intervention, there was no statistically significant difference in anxiety in the mindfulness or control group at baseline (p=0.44), after intervention (p=0.29), or after urodynamics (p=0.65). Secondary outcomes of anxiety, fear, discomfort and pain measured on a Likert scale were similar between groups. Similarly, the reduction in anxiety was not significant from baseline to after urodynamics among the mindfulness (p=0.52) or control (p=0.53) group. Changes in VAS were not significant between both groups.

Conclusion: This pilot study exhibits a potentially promising method of improving the patients’ anxiety and pain during urodynamics procedure. No significant differences were noted in this pilot study. We continue to enroll subjects to investigate the impact of mindfulness exercises prior to undergoing urodynamics. Further studies in larger scale may help better elucidate the specific demographic to target with mindfulness exercises.

Source of Funding: None
Poster #NM94
DIFFERENCES IN BLADDER GEOMETRY DURING FILLING BETWEEN OVERACTIVE BLADDER PATIENTS AND HEALTHY VOLUNTEERS
Anna Nagle, PhD, Stephanie Clark, MD, Rachel Bernardo, BS, Naomi Vinod, Laura Carucci, MD, Ashley Carrol, MD, John Speich, PhD, and Adam Klausner, MD
1Department of Mechanical & Nuclear Engineering, Virginia Commonwealth University; 2Department of Urogynecology, Virginia Commonwealth University, Richmond, VA; 3Department of Biomedical Engineering, Virginia Commonwealth University, Richmond, VA; 4Department of Surgery, Virginia Commonwealth University, Richmond, VA; 5Department of Mechanical & Nuclear Engineering, Virginia Commonwealth University, Richmond, VA; 6Department of Surgery, Virginia Commonwealth University, Richmond, VA and Department of Surgery Hunter Holmes McGuire Veterans Affairs Medical Center, Richmond, VA
Presented By: Anna S. Nagle, PhD

Introduction: Overactive bladder (OAB) is characterized by changes in the filling phase of the bladder. Changes in geometry during filling may play a role in the development of bladder urgency, because tension sensitive afferent nerves relay filling sensation. The purpose of this study was to describe dynamic changes in bladder geometry over the course of filling, and to compare the pattern of changes in filling between OAB patients and volunteers with normal bladder function.

Methods: Fourteen female patients with OAB and twelve healthy volunteers (7 male, 5 female) were enrolled in this prospective study. The OAB patients underwent extended urodynamic testing with concurrent 3D ultrasound with a GE Voluson E8 system using a 4-8 MHz transabdominal probe. Images were acquired once every minute during bladder filling at an infusion rate of 10% cystometric capacity per minute. The healthy volunteers drank 2L Gatorade-G2® and had images acquired every five minutes as their bladders filled by ureteric diuresis. Perimeters were measured manually in the transverse, sagittal, and coronal planes using the GE 4D View software.

Results: Figure 1 shows how average bladder perimeter increased in the three planes for the normal (left) and OAB (right) groups. In the normal group, the largest amount of change was seen in the transverse plane, which became much larger than the perimeters of the other planes over the course of filling. In contrast, in the OAB group the largest degree of change was seen in the sagittal plane. By the end of filling, the perimeters in all three planes were nearly identical in this group.

Conclusion: Overall, perimeters in the normal group were larger than those seen in the OAB group, which is unsurprising as this group had much higher bladder capacities. The pattern of perimeter increase was not very different between OAB and normal participants in the sagittal and coronal planes, but the transverse perimeter increased greatly in the normal but not the OAB. Altered bladder filling geometry data may help identify some likely to develop OAB and to subtype certain OAB patients.
Poster #NM95
URETHRAL PRESSURE MEASUREMENT AS A TOOL FOR THE URODYNAMIC DIAGNOSIS OF DETRUSOR SPHINCTER DYSSYNERGIA AND STRATIFICATION OF BLADDER PHYSIOLOGY
Lauren Corona, MD, Anne Pelletier Cameron, MD, J. Quentin Clemens, MD, Yongmei Qin, MD, MS and John Stoffel, MD
Ann Arbor, MI
Presented By: Lauren E. Corona, MD

Introduction: Detrusor Sphincter Dyssynergia (DSD) is defined as loss of coordination between detrusor and urinary sphincters. We describe a technique for urodynamic diagnosis of DSD using urethral pressure measurements and examine associations between urethral pressure and bladder physiology among patients with DSD.

Methods: Multiple sclerosis and spinal cord injured patients with DSD on urodynamics (EMG or VCUG) were retrospectively identified. All had previous standardized urodynamic testing with a triple lumen catheter which used both bladder and urethral pressure sensors. Urethral pressure DSD was defined as an involuntary >20 cmH20 urethral pressure rise in amplitude during detrusor contraction. Data from SCI and MS patients with detrusor overactivity (DO) without DSD were abstracted as a control group.

Results: Seventy-two patients (56 SCI, 16 MS) with DSD were identified. Sixty-two (86%) had >20 cmH20 urethral pressure rise during DSD episode. By comparison, 5/23 (22%) of the control group had >20 cmH20 during episode of DO, and 3 of these may have had unrecognized DSD on re-review of urodynamics. Mean duration of urethral pressure DSD episode was 66 seconds (range 10 to 500 seconds) and mean urethral pressure rise was 72.8 cmH2O (range 1 to 256 cmH2O). Longer (>30 seconds) DSD episodes were significantly associated with male sex (80.7% v 50%, p 0.013) and higher bladder capacity (389 ml v 219 ml, p 0.0004), trended toward improved bladder compliance (72.42 v 39.97 ml/cmH2O, p 0.129), and toward having less detrusor overactivity (76.9% v 92.1%, p 0.08). Urethral pressure amplitude measurements during DSD or were not associated with significant urodynamic variables or neurologic pathology.

Conclusion: Urethral pressure rise of >20 cmH20 during DSD episode occurred in 86% of patients with known DSD. Longer DSD episodes may be associated with more favorable bladder physiology. These findings suggest that urethral pressure measurements could stratify bladder physiology for patients with DSD.
FINANCIAL FUNDING: None
NOVEL METRICS FOR SENSATION KINETICS DURING URODYNAMICS

Andrew Colhoun, MD, Adam Klausner, MD1, Jacqueline Morin, BS1, Zachary Cullingsworth, BS1, David Rapp, MD2, Stefan De Wachter, MD, PhD3 and John Speich, PhD1

1Virginia Commonwealth University, Richmond, VA; 2Virginia Urology, Richmond, VA; 3University of Antwerp, Antwerp, Belgium

Presented By: Andrew F. Colhoun, MD

Introduction: During urodynamics (UD), measurement of patient sensation during the filling phase is currently constrained to the ICS sensory thresholds. There is a need to develop more objective, reproducible methods with higher resolution data to characterize real-time sensation during UD. We aim to use a real-time sensation meter to evaluate sensation kinetics during the filling phase of UD in order to develop novel metrics to sub-stratify filling phase pathology.

Methods: After IRB approval, individuals undergoing UD for any indication recorded real-time sensation changes during filling from 0-100%. Prior to testing, all patients completed the ICIQ–OAB questionnaire and were instructed on the use of the meter. Patients with incontinence during filling, non-continuous filling or not reaching 100% sensation were excluded from analysis. Sensation data was time-linked with infused volumes to generate sensation-capacity curves for each patient which were divided into quartiles. Sensation velocity (Δsensation/Δcapacity) was calculated at quartile midpoints. A sensation index (SI) was calculated for each patient and defined as 4th quartile sensation velocity/1st quartile sensation velocity (v4/v1). Patients were grouped via ICIQ-OAB urgency scores for analysis.

Results: 49 consecutive patients participated with 28 meeting criteria for analysis. Patients were grouped by urgency scores as follows: n=5,9,9,5, corresponding to urgency scores of 0,1,2,3, respectively. No patients had urgency scores >3. There were no differences in cystometric capacity or First Sensation between the 4 groups. Patients with elevated urgency had an accelerating sensation velocity through the 4 filling quartiles (β=0.39, p<0.001) not seen for lower urgency groups. Sensation velocity was inversely proportional to urgency score in the 1st (β=-0.25, p=0.005) and 2nd (β=-0.12, p=0.03) quartiles. SI was significantly elevated in urgency group 3 compared to lower urgency groups (p=0.02).

Conclusion: Sensation meter data demonstrated that patients with elevated chronic urgency have accelerating sensation during filling. Patients without chronic urgency had high sensation velocities early and then decelerated. These findings suggest that individuals without chronic urgency are able to recognize the sensation of filling but then have sensory accommodation. These new metrics may allow for more targeted therapy of storage disorders.
Poster #NM97
DOES RECORDING PATIENT PERCEPTION OF URGENCY IMPROVE INTER-READER RELIABILITY FOR IDENTIFYING DETRUSOR OVERACTIVITY ON URODYNAMIC TRACINGS?
Dianne Glass, MD, PhD¹, Siri Drangsholt, MD², Dominique Malacarne, MD², Victor Nitti, MD² and Benjamin Brucker, MD²
¹University of Chicago Medicine, Department of Gynecology, Chicago, Illinois; ²New York University Langone Medical Center, Department of Urology, New York, New York
Presented By: Dianne Glass, MD, PhD

Introduction: Involuntary detrusor contractions (IDCs) during filling cystometry are the urodynamic (UDS) observation that define detrusor overactivity (DO). In some, the demonstration of DO can be clinically relevant and affect treatment while in others it may be insignificant or merely artifact. This study sought to use a novel device (Patient Perception of Urgency meter (PPU)) to record the patient’s urgency during filling cystometry during UDS to explore if it improved inter reviewer reliability (IRR) when identifying IDCs on UDS tracings.

Methods: The PPU reflects the strength of a patient’s urgency and records this in real time on the UDS. A prospective observational study was conducted, and enrolled subjects undergoing UDS who had clinical symptoms of OAB. Neurogenic patients were excluded. Subjects filled out two validated questionnaires. They were then asked to use the PPU during the UDS. Three FPMRS urologists and 3 senior urology residents were asked to review each UDS. The urology residents to serve as less experienced reviewers. Each study was duplicated with the PPU removed. After randomly assorting the masked and unmasked studies reviewers marked each IDC with a degree of confidence (“sure” vs. “unsure”). Intra class correlation and the Kappa statistic were used to evaluate IRR between the reviewers when PPU tracings were masked and unmasked. Confidence was scored as the percentage of IDCs marked “sure” averaged within subjects for the reviewer groups. The confidence score was compared with the PPU tracing masked and unmasked with a paired T test.

Results: 30 subjects were enrolled. They were 61.3 +/- 14.7 years old, 86.7% female, 86.7% Caucasian. The IRR for identification of the number of IDCs in a given study was good at 0.787 for the Urologists and moderate at 0.583 for the residents. The addition of the PPU tracing did not significantly alter either group, but did increase the resident IRR to 0.721. The reviewers reported that they were confident 48.6% (urologists) and 59.5% (residents) of their marked IDCs were true IDCs with the PPU tracing masked, and this rose to 59.3% (urologist) and 68.2% (resident) with it unmasked. Though neither reached significance.

Conclusion: Anecdotally reviewers found the PPU information helpful. Though a significant improvement in IRR was not proven, more experience resulted in more IRR of IDCs. In the less experienced group, using the PPU information is trending towards improved IRR.
Poster #NM98
MIDURETHRAL SLING EXPLANT IMPROVES URODYNAMIC BLADDER OUTLET OBSTRUCTION
Casey G. Kowalik, MD, Jorge Jaunarena, MD, Benjamin Dropkin, MD, Sophia Delpe, MD, W. Staurt Reynolds, MD, MPH, Roger R. Dmochowski, MD and Melissa R Kaufman, MD, PhD
Nashville, TN
Presented By: Benjamin Dropkin, MD

Introduction: Women electing for midurethral sling (MUS) explant often present with severe voiding dysfunction, which may persist after explant. We sought to evaluate the urodynamic characteristics of patients before and after MUS explant.

Methods: Data from medical records was collected in an IRB approved retrospective review of women undergoing MUS explant between January 2011 and March 2016. Inclusion criteria included prior synthetic MUS, complete sub-urethral sling removal, and urodynamic (UDS) evaluation before and after explant. Exclusion criteria included concomitant surgery at mesh excision. Clinical symptoms, validated questionnaire scores, and UDS findings before and after explant were compared using Wilcoxon signed-rank test for continuous variables and McNemar’s test for categorical variables. Bladder outlet obstruction index (BOOI) was defined as Pdet@qmax - 2.2*Qmax and bladder contractility index (BCI) was Pdet@qmax + 5*Qmax.

Results: Thirty-eight women were identified for analysis. Post-explant UDS (UDS-2) was performed at a median of 7 months after the pre-operative UDS (UDS-1) (range 4-37). At UDS-2, women reported significantly more urgency, urge urinary incontinence (UUI), and stress urinary incontinence (SUI) symptoms compared to UDS-1, but showed improvements in median American Urological Association Symptom Index (p= 0.001) and quality of life scores (p=0.02). Table 1 shows the pre- and post-explant UDS findings. Following sling explant, there was a significant increase in patients with urodynamic SUI and a significant decrease in BOOI. Following UDS-2, 28 (74%) women underwent 16 secondary procedures for SUI and 19 secondary procedures for UUI.

Conclusion: Following MUS explant, women often display continued lower urinary tract symptoms prompting further evaluation with UDS. Women in this study demonstrated significant improvements in bladder outlet obstruction indices after sling explant, reflective of lower detrusor pressures at maximum flow. There was also an increase in urodynamic SUI following explant. The majority of women underwent secondary procedures for incontinence explaining the higher rates of symptoms at UDS-2.

<table>
<thead>
<tr>
<th>Table 1. Pre- and post-sling explant urodynamic data</th>
<th>UDS-1</th>
<th>UDS-2</th>
<th>p-value</th>
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<tbody>
<tr>
<td>Detrusor overactivity, no. (%)</td>
<td>13 (34)</td>
<td>14 (37)</td>
<td>1</td>
</tr>
<tr>
<td>Urodynamic SUI, no. (%)</td>
<td>13 (34)</td>
<td>24 (63)</td>
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<tr>
<td>Capacity, ml, median (IQR)</td>
<td>298 (205,398)</td>
<td>348 (228,525)</td>
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<tr>
<td>Qmax, mL/s, median, (IQR)</td>
<td>10.5(7.9,15.2)</td>
<td>10(7,16.3)</td>
<td>0.548</td>
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<tr>
<td>pdet@qmax, cmH2O, median (IQR)</td>
<td>27.5 (18,38)</td>
<td>19.5(13,31)</td>
<td>0.015</td>
</tr>
<tr>
<td>BOOI, median (IQR)</td>
<td>1.9 (-8.8,16.8)</td>
<td>-7.2(-21,6,0.2)</td>
<td>0.012</td>
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<tr>
<td>BCI, median (IQR)</td>
<td>87 (67.5,119.5)</td>
<td>70 (53.6,112.8)</td>
<td>0.245</td>
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Poster #NM99
VALIDATION OF A REAL-TIME BLADDER SENSATION METER DURING ORAL HYDRATION IN HEALTHY ADULTS: EFFECTS OF TRAINING AND ULTRASOUND PROBE PRESSURE
Derek Sheen¹, Anna S. Nagle, PhD², Hiren Kolli¹, Naomi N. Vinod¹, Hameeda A. Naimi¹, Uzoma A. Anele¹, Stefan G. De Wachter, MD, PhD³, John E. Speich, PhD² and Adam P. Klausner, MD¹
¹Department of Surgery/Division of Urology, Virginia Commonwealth University School of Medicine, Richmond, VA; ²Department of Mechanical & Nuclear Engineering, Virginia Commonwealth University School of Engineering, Richmond, VA; ³Department of Urology, University Hospital Antwerpen, Edegem, University of Antwerpen, Wilrijk, Belgium; ⁴Department of Surgery/Division of Urology Hunter Holmes McGuire Veterans Affairs Medical Center, Richmond, VA
Presented By: Derek Sheen, BS in Biology

Introduction: Currently there are no real-time objective measures of sensation during the micturition filling phase other than ICS-defined verbal sensory thresholds. We developed a non-invasive protocol to objectively measure real-time bladder sensation by using 3D ultrasound to measure bladder volume/shape/rhythm along with a sensation meter. This repeatability study validates the protocol by measuring the effects of participant training and ultrasound probe pressure during oral hydration studies.

Methods: Healthy volunteers without urinary symptoms (IClq-OAB scores) were recruited into an oral hydration study. Participants used a touch-screen sensation meter, drank 2L Gatorade G2, and completed 2 fill/void cycles. The study was repeated 3 times (Visits A, B, and C) each one week apart. In visits A and B, ultrasound images were obtained every 5min. In visit C, ultrasound was withheld. During visit A, participants used the sensation meter to record real-time bladder sensation (0-100%). Bladder volumes were calculated in 5% sensation increments, assuming constant filling (bladder capacity/time).

Results: 10 participants (3 male/7 female) completed all visits. Fig1 shows %sensation vs. %capacity. Compared to untrained participants receiving ultrasound (A1), there was decreased sensation (left shift) occurring mainly at low capacities (5-50%) in A2, B1, and B2. This likely represents the effect of participant training. With the removal of the ultrasound (C1 and C2), there is a further decrease in sensation (left shift). This likely represents the additional sensation effect from the ultrasound probe.

Conclusion: Because visits A and B were identical (both with ultrasound), the decreased sensation (left shift) at low capacities likely represents the effects of participant training. With the removal of ultrasound (probe withheld during visit C) also caused decreased sensation (left shift), likely due to the probe pressure (Fig 1, blue arrow). This validation study demonstrates the effects of training and ultrasound probe pressure on real-time bladder sensation during oral hydration and may allow for development of non-invasive metrics for filling phase function.

Figure 1

![Sensation vs % Capacity](image.png)

Fig 1: Effects of training and ultrasound probe pressure. Fill1 Visits A-C (blue, orange, and black solid lines). Fill2 Visits A-C (dashed lines). Red Arrow demonstrates effect of training (left shift). Blue Arrow demonstrates effect of removing ultrasound probe (left shift).
Poster #NM100
COST-EFFECTIVENESS OF GREENLIGHT PHOTOSELECTIVE VAPORIZATION OF THE PROSTATE COMPARED TO TRANSURETHRAL RESECTION OF THE PROSTATE FOR BENIGN PROSTATIC HYPERPLASIA
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Presented By: Dean S. Elterman, MD, MSc, FRCSC

Introduction: Benign prostatic hypertrophy (BPH) is a non-cancerous enlargement of the prostate that affects up to 50% of men ≥50 years of age, & frequently leads to bothersome lower urinary tract symptoms (LUTS). Transurethral resection of the prostate (TURP) is the leading intervention used to ablate prostate tissue & restore normal urinary function. A newer energy based alternative called the Greenlight laser photosel ective vaporization of the prostate (PVP) is less invasive, has a shorter surgical procedure, faster symptom improvement, & decreased morbidity compared to TURP. The present study compares case costs & complication rates of both the Greenlight laser photosel ective vaporization of the prostate (PVP) & the transurethral resection of the prostate (TURP) methods.

Methods: A retrospective cost analysis was conducted of perioperative Hospital costs of patients who underwent GreenLight PVP, TURP, or TURP with Olympus PlasmaButton. Patients who had surgeries conducted between September 2013 & September 2015 at the Toronto Western Hospital (Toronto, Ontario), were included in the study. The time horizon of this study was 60 days post-procedure. Through medical chart review, data were collected on: patient age, Charlson Comorbidity Index, distance from patient’s home to clinic (using postal codes), whether the patient was on anticoagulation therapy, past medical therapy for BPH, & diagnosis of prostate cancer. Data on type of procedure, length of hospital stay, procedure costs, & costs of readmissions at 30 & 60 days post-procedure were captured through the Toronto Western Hospital administrative database. For each patient, both direct & indirect Hospital costs were obtained. A cost per patient was calculated & expressed in 2015 Canadian dollars. Multiple linear regression analysis was performed to identify predictors of total cost (initial procedure + readmission)

Results: There were 147 BPH surgical cases. PVP, TURP, & TURP with OP accounted for 29%, 62%, & 10% of cases, respectively. Notably, only 10% of PVP surgeries required in-patient hospital stays, whereas nearly all TURP cases were hospitalized. When cost of surgical procedure & hospital stay were calculated, PVP offered total cost savings over TURP & TURP OP of 30.2% & 33.4%, respectively. Furthermore, readmission rates within 60 days were 0% for PVP patients & 14% for TURP (due to mechanical or medical complications).

The speaker has received a research grant from Boston Scientific.
CORRELATION BETWEEN NOCTURIA AND SEXUAL FUNCTION IN BENIGN PROSTATIC HYPERPLASIA

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Presented By: DongWan Sohn, MD

Introduction: Sleep quality is one of predisposing factors associated with sexual function. Therefore we hypothesized nocturia and other sleep quality might be related to sexual dysfunction in patients with benign prostatic hyperplasia (BPH), and improvement of those factors after surgical procedure could enhance sexual function.

Methods: From March 2014 to March 2016, 75 patients aged between 50 and 80 years were participated. Questionnaires such as International Prostate Symptom Score (IPSS), Pittsburgh Sleep Quality Index (PSQI), International Index of Erection Function (IIEF-5) were conducted before and 6 months after Holmium Laser Enucleation of the prostate (HoLEP).

Results: Mean age (years), body mass index (kg/m2), testosterone (ng/dl) and prostate size (g) were 68.96±5.94, 24.63±2.82, 3.97±1.49 and 64.89±23.58, respectively. Before HoLEP, IIEF-5 item 1 was related to nocturia in IPSS item 7 (p=0.008). IIEF-5 item 1 also related to PSQI item 5-b and 5-c (p=0.019 and p=0.030). IIEF-5 item 2, 3 and total IIEF-5 score were related to PSQI item 5-b (p=0.019, p=0.014 and p=0.034, respectively). After HoLEP, IPSS item 7, PSQI item 5-c, and IIEF-5 item 1 were improved (p<0.001, p<0.001 and p=0.017, respectively). Among sleep quality related item such as IPSS item 7 and PSQI items, only the difference of PSQI item 5-b before and after surgery was significantly related to the differences of IIEF-5 item 2,3,4 and 5score before and after surgery (p=0.016, 0.002, 0.028 and 0.046, respectively). However, PSQI item 5-b and IIEF item 2,3,4 and 5 were not significantly improved.

Conclusion: In BPH patients, nocturia (IPSS item 7 and PSQI item 5-c) and/or to wake up in the middle of the night or early morning (IPSS item 5-b) were related to male sexual function. The changes of PSQI item 5-b and IIEF-5 item 2,3,4 and 5 were not significant after BPH surgery, but the change of PSQI item 5-b was significantly related to the changes of IIEF-5 item 2,3,4 and 5. The improvement of nocturia by itself after BPH surgery may not enhance sexual function.
Poster #NM102
REGIONAL VARIATION IN TRANSURETHRAL RESECTION OF PROSTATE (TURP) DECLINE IN THE MODERN SURGICAL ERA
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Presented By: Elisabeth Sebesta, MD

Introduction: Transurethral resection of prostate (TURP) has declined with the advent of more effective medical and less invasive surgical therapies. However, it is not known how TURP decline has varied between healthcare regions, reflecting different rates of adoption of new treatments and technologies. We evaluated temporal trends in TURP decline between regions to determine the extent of variation, and whether high initial surgical volume was associated with the extent of change.

Methods: Using publicly available longitudinal Medicare data from the Dartmouth Institute’s Diffusion of Medical Procedures and Technology Database we examined the annual incidence of TURP (inpatient discharge) across hospital referral regions (HRR) between 1992-2010 (data were insufficient post-2010 due to low rates). TURP rates were adjusted for age and race. Regional rates of inpatient TURP per year, and absolute and percent changes over time were identified. Pearson correlations were calculated to determine whether baseline regional volume was associated with the magnitude of change.

Results: The mean rate of inpatient TURP per 1,000 male Medicare beneficiaries per HRR in 1992 was 14.08+/−2.83 (13.89 to 26.45). The mean absolute decrease in volume from 1992-2010 was -11.58 (median -11.48), range -5.08 to -21.23. There was a mean change of -82% (median -83%), range -54% to -96%. Regional volume in 1992 was highly correlated with the absolute decrease in TURP volume over the study period (r=-0.93, p<0.01) (Fig. 1A). Initial volume was more modestly correlated with the percent decrease in volume (r=-0.23, p<0.01); this correlation is below the threshold for meaningful correlation (r<0.5) (Fig. 1B). There were no regions that experienced an increase in volume, however some regions had a relatively stable trend.

Conclusion: There is substantial regional variation in both rates of TURP and in extent of decline over time. The percent change in TURP rate varied regionally, and was poorly correlated with initial volume, implying there are unrecognized systemic and cultural factors that impact regions’ adoption of newer technologies. Further study of factors influencing the diffusion of novel therapies in this area is needed.

Figure 1: Decline in inpatient TURP per hospital referral region (HRR) from 1992-2010, versus baseline volume (1992-2010)
Poster #NM103
THE TEMPORARY IMPLANTABLE NITINOL DEVICE (ITIND) FOR THE MINIMALLY INVASIVE TREATMENT OF BPH: COMPARISON OF 3-YEAR OUTCOMES & COST IN CANADA
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Presented By: Dean S. Elterman, MD, MSc, FRCSC

Introduction: The iTind (MediTate Ltd) device, comprised of 3 nitinol struts & an anchoring leaflet, is deployed in the prostatic urethra where it exp&ses, resulting in ischemic incisions & a re-shaping of the bladder neck & prostate. The device is implanted in 5 minutes using a rigid cystoscope. After 5 days it is removed through a 22F catheter. The device is Health Canada approved. Three-year clinical outcomes & economic comparisons are made to the prostatic urethral lift (PUL) system (UroLift – NeoTract Inc.).

Methods: A one-arm single-centre, prospective study of the iTind in 32 men was conducted (1 yr results). Similarly, the L.I.F.T. study, a multi-centre, sham-controlled prospective study with similar inclusion criteria & outcomes examining the PUL has published its 3yr results.

Results: At baseline patient’s mean (SD) total prostate volume (TPV), IPSS score, QoL & Qmax were 29.5 (+7.4), 19 (14-23), 3 (3-4), & 7.6 (2.2) ml/sec. After 36 months IPSS score, QoL & Qmax were 12 (6-24), 2 (1-4) & 10.4 ml/sec. Only 1 patient (3.1%) required TURP. By comparison, the PUL study baseline patient’s mean (SD) TPV, IPSS score, QoL, & Qmax were 44.5 (+12.47), 22.3 (13-35), 4.6 (4.4-4.8), 7.9 (3-13) ml/sec. After 36 months IPSS score, QoL, & Qmax were 12.7 (11-14), 2.2 (1.9-2.6), & 11.8 (10.6-13) ml/sec. The iTind resulted in superior Qmax (p=0.033) & similar IPSS (p=0.098) & QoL (p=0.192) improvements compared to PUL implant at 3 years. In Canada the iTind device cost is approx. $2500 CAD & 1 device is used per case. The approx. cost of a PUL implant is $800 CAD/implant & the mean number of PUL implants used in the L.I.F.T. study was 5.2. Thus in Canada the approx. cost per PUL procedure will be $4160 CAD.

Conclusion: The iTind demonstrates equivalent or superior 3 year outcomes compared to the UroLift & is a lower cost option in Canada.
The speaker has no financial conflicts.
Poster #NM104
CHANGES IN TOTAL GLAND AND CENTRAL ZONE VOLUMES FOLLOWING PROSTATE ARTERY EMBOLIZATION: RESULTS FROM A PROSPECTIVE STUDY
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Presented By: John Hairston, MD

Introduction: To assess the change in volume of prostate and imaging findings following prostate artery embolization (PAE) for benign prostate hyperplasia (BPH).

Methods and Materials: With IRB approval, we analyzed prospectively acquired imaging data pre- and post-PAE at baseline and 6-months follow-up. We calculated the total volume (TV) and central zone volumes (CZ) of prostate using DynaCAD (Invivo Royal Philips, FL) and measured percentage change in volume following PAE. Additionally, post-PAE imaging changes including changes in signal intensity, enhancement, evidence of infection, and infarction were recorded. Data was compared using Fisher Exact test and paired t-test with a p-value of <0.05 considered significant.

Results: Thirty-two patients (n=32) treated with PAE were included in our study. Median TV at baseline was 86 cc (range: 29.4-190.5) and 82 cc (range: 25.3-158.2) at 6 months post PAE. Median CZ at baseline was 54.4 cc (range: 12.9-165.5) and 48 cc (range: 7.1-131.6) at 6 months post PAE. Median decrease in TV was 19.9% (CI: 15.2-35.1) (p=0.0001) and median decrease in CZ was 37.2% (CI: 23.7 – 56.9) (p=0.0001). Larger prostates (>80 cc) had a more significant decrease in volume than smaller prostates (<80 cc) (p=0.021). At 6-month follow-up imaging review, 28% (9/32) showed infarction, 84% (27/32) had decrease in T2-signal intensity, and 47% (15/32) showed decrease in enhancement. There were no imaging signs of infection following PAE.

Conclusion: This prospective study demonstrates that PAE produces significant reduction in TV. Interestingly, this is the first report of CZ volume reduction following PAE. These changes are most significant in patients with prostates > 80 cc in volume.

Poster #NM105
WITHDRAWN
Poster #NM106
CHARACTERISTICS OF CLINICAL TRIALS FOR BENIGN PROSTATIC HYPERPLASIA
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Presented By: Dominique D. M. Thomas, BS

Introduction: Benign prostatic hyperplasia (BPH) affects a significant percentage of aging men and often leads to reduction in a patient's quality of life (QoL). Clinical trials are a helpful indicator of the variety of available treatment modalities for a given disease. Without this information, clinical trials may not have the resources to productively guide the research and development of BPH treatments. The purpose of this paper is to review the current state of clinical trials studying BPH and to analyze the outcomes and intervention types being emphasized in the field.

Methods: We performed a search through Clinicaltrials.gov on studies conducted in the USA related to BPH from 2002 to 2017. Data on study eligibility, enrollment, recruitment, completion status, and was tabulated in Excel. To be included, studies needed to adequately define BPH as the primary condition of interest within their description or eligibility criteria in accordance with AUA guidelines.

Results: A total of 94 clinical trials were included in this study, with 50% of studies used AUASS/IPSS scores as a primary outcome measure. As a secondary outcome, AUASS/IPSS and Qmax were both present at equal rates (50%). The mean enrollment number was 259.75 (range 5 to 4,844). 49 studies tested a drug or biological treatment, while the remaining 45 were trials investigating a surgical, procedural, or other non-medical approach. 73% of subjects were enrolled in trials testing medical interventions, while all others participated in surgically or procedurally-oriented studies. Prior to 2012, most clinical trials for BPH tested medical interventions. Appropriate follow-up length was set to >36 months with 2% of medical trials and 4% of surgical trials fulfilling this criteria. Only 4 studies in Phase 3 or 4 had a follow-up >36 months. 27% of studies reported results, with 8% of all studies having published their data. 77% of all trials were industry-sponsored, while a minority were grant- or academic-sponsored. The longest length of follow-up in each trial was also recorded, with 42% of trials completing the last follow-up with subjects at 12 months.

Conclusion: We found there is an increasing number of surgically-oriented interventions being investigated, compared to pharmacological agents. Interestingly, surgery is a third-line therapy. Although the armamentarium of treatment options is continuously evolving, there needs to be a better balance of clinical trials for all interventions.
Poster #NM107
ROLE OF PHOTOVAPORIZATION OF THE PROSTATE (PVP) IN MEN WITH A PROSTATE VOLUME LESS THAN 40 GRAMS
Ramy Goueli, MD, MHS1, Dominique Thomas, BS1, Kevin Zorn, MD2, Malek Meskawi, MD2, Pierre-Alain Hueber, MD2, Vincent Misrai, MD2, Alexis Te, MD1 and Bilal Chughtai, MD1
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Presented By: Ramy S. Goueli, MD, MHS

Introduction: Benign Prostatic Hyperplasia (BPH) is a condition that affects the male aging population and is responsible for a bladder outlet obstructions (BOO). There is little evidence showing a long-term benefit of performing PVP in small volume prostates (<40grams), with no evidence in using 180-W XPS-greenlight system in this population. Our objective was to characterize the long term clinical and symptomatic benefit of the 180-W XPS-Greenlight laser in patients with small volume prostates.

Methods: A retrospective analysis was performed for 58 patients who underwent 180-W XPS-laser PVP vaporization of the prostate between 2012 and 2016 at three tertiary medical centers. We included all patients with prostates less than 40 grams with clinical evidence of bladder outlet obstruction and either failure or intolerance of medical therapy. International prostate symptom score (IPSS), maximum flow rate (Qmax), post-void residual volume (PVR) and quality of life (QoL) were all included are primary endpoints. Furthermore, prostate specific antigen (PSA) reduction was also included. The secondary endpoints evaluated the incidence of complications both intraoperatively and postoperatively. Post-operative complications were stratified using the Clavien-Dindo grading system.

Results: The average age of men who underwent PVP of the prostate was 67.8±10.9 years old, with an average BMI of 29.7±3.9. The average prostate volume was 29±6.7mL. All patients were discharged from the hospital within 48 hours of the procedure and 5 patients were discharged with a catheter. The median follow up time was 6 months (IQR 3-22.5). The IPSS score improved from 22.8±7 at baseline to 10.7±7 (p<0.01) and 6.31±4.4 (p<0.01) at 30 and 180 days, respectively. The maximal flow rate improved from 7.7±4.6 ml/sec at baseline to 17.25±9.3 mL/sec (p<0.01) and 19.14±7.19 (p<0.001) at 30 and 180 days, respectively, while the PVR improved from 216±271 mL pre-operatively to 32.8±45.3 (p<0.01) and 26.23±46 (p<0.01) at 30 and 180 days, respectively. The PSA drop from 1.97±1.76 ng/mL pre-operatively to 0.74±0.63 ng/mL 180 days, respectively.

Conclusion: This study demonstrates the 180-W GreenLight XPS system is a safe and effective for men with small prostates. This procedure produced durable improvement in symptomatic and clinical parameters and should be considered as a viable therapy for men who need surgical intervention.
Poster #NM108
EFFECT OF VAGINAL ESTROGEN ON ASYMPTOMATIC MICROHEMATURIA: A RANDOMIZED CONTROLLED TRIAL [EVER STUDY]
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1MedStar; 2MedStar Health Research Institute; 3MedStar Washington Hospital Center
Presented By: Allison R. Polland, MD

Introduction: The American Urological Association (AUA) guidelines recommend an extensive workup for asymptomatic microhematuria (AMH), without regard for gender-specific risk factors for hematuria. Menopause is a decreased estrogen state associated with friable changes in the genitourinary tissues. The effects of menopause and its treatment on AMH are unknown. The purpose of this study was to determine if vaginal estrogen use is associated with resolution of AMH in postmenopausal women.

Methods: This was a randomized double-blind trial of vaginal estrogen cream versus placebo in postmenopausal women with AMH. Funding was provided by Pfizer Inc. through an investigator-initiated grant. Eligible patients were postmenopausal women with AMH on a single urinalysis; these patients were randomized to vaginal estrogen or placebo cream while undergoing the recommended hematuria workup per AUA guidelines. The primary outcome was resolution of AMH after 8 weeks of cream use, with vaginal atrophy scores being a secondary outcome. Sample size calculation determined that 56 patients in each group would achieve an 81% power to detect a difference between the group proportions of 15%.

Results: A total of 27 patients were enrolled with 13 and 14 in the placebo and estrogen arms respectively before the study was stopped due to poor recruitment. Three patients in the placebo arm and 4 in the estrogen arm did not complete follow-up. There were no significant differences between groups with regard to age, BMI, ethnicity, years since menopause, prior use of hormonal therapy or smoking. The majority of patients had prolapse stage 2 or less. History of smoking did not affect AMH resolution. Although a significant difference could not be seen, more patients in the estrogen group as compared to placebo had resolution of AMH, 10 (71%) and 6 (46%) respectively. Atrophy scores appeared to improve in both groups. On hematuria workup, one patient was found to have a renal mass determined to be papillary renal cell carcinoma upon resection.

Conclusion: Because the study did not complete enrollment the lack of significance of many findings is difficult to interpret. While estrogen is known to decrease friability of genitourinary tissues, it is unclear from the results of this study whether vaginal estrogen use is associated with AMH resolution. Until further research is done, a trial of vaginal cream should not delay a complete hematuria workup.
**Poster #NM109**

**URINARY RETENTION IN OLDER WOMEN WITH LOWER URINARY TRACT SYMPTOMS: PREVALENCE, ASSOCIATED FACTORS AND IMPACT ON MANAGEMENT**

Rebecca Haddad, MD¹, Benoit Peyronnet, MD², Matthieu Mezzadri, MD³, Claire Hentzen, MS⁴, Françoise Valentini, MD¹, Gerard Amarenco, MD, PhD⁴ and Gilberte Robain, MD, PhD¹

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Presented By: Rebecca Haddad, MD

**Introduction:** Urinary retention (UR) in older patients may lead to complications. The association between UR and lower urinary tract symptoms (LUTS) is described, but in poorly characterized populations. The assessment of UR is recommended in international guidelines (1), but its usefulness in the management of LUTS was never determined. The objectives of this study are to determine the prevalence of UR in older women with LUTS, as well as the factors associated with UR and the impact of UR screening in the management of LUTS.

**Methods:** A cross-sectional multicentric study included all women over 65 years with LUTS, exclusion patients with neurological pathology or medical history of urological or pelvic cancer. A comprehensive geriatric assessment and a screening of UR (i.e., uroflowmetry with post-void residual volume (PVR) measurement) were performed. UR was considered as a continuous or a binary variable (i.e., PVR ≥ 100 mL). The association between characteristics of patients and UR were examined in linear or logistic regression models. The impact of UR screening was evaluated by the percentage of modification of the initial management.

**Results:** A total of 32 patients were included, with a mean (sd) age of 81.6 (5.8) years. Prevalence of UR was 9.7% and mean PVR was 31.9 (63.0) mL. Screening of UR led to a modification of the initial management in 4 cases. No association was found between UR and any type of LUTS. In univariate analysis, an association was found between UR as a binary variable and Mini Mental State (MMS) (p=0.006) and as a continuous variable and MMS (p=0.001) and risk of fall (p=0.01). In multivariate analysis, only association between UR as a continuous variable and MMS was sustained (β=−3.1, p=0.004).

**Conclusion:** UR was less frequent than described in other studies, maybe due to different measurement of PVR (2) or settings of inclusion (3). We did not find any association between UR and LUTS, which is consistent with literature (3). We found that a better cognitive function evaluated by MMS was an independent factor of less important PVR, which is a result found in another study (3). Finally, this is the first study to describe the impact of screening PVR in the management of LUTS in older patients.

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Poster #NM110
THE ROLE OF URODYNAMIC TESTING IN DIAGNOSIS AND MANAGEMENT OF VOIDING DYSFUNCTION IN ELDERLY FEMALE DIABETIC PATIENTS WITH URINARY RETENTION
Cristina Palmer, DO and Gamal Ghoniem, MD, FACS
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Presented By: Cristina J. Palmer, DO

Introduction: In the United States in 2015, it was estimated that 30.3 million Americans, or 9.4% of the population has Diabetes mellitus (DM), up from 4.9% in 1990. DM has an effect on bladder function and voiding; up to one fourth of patients have Urologic complications. Proposed etiologies are multifactorial, including smooth muscle dysfunction, urothelial cell damage, and/or neuronal injury. We seek to examine an elderly female population with DM presenting to our clinic with urinary retention.

Methods: We performed a retrospective chart review of female patients aged 65 or older undergoing urodynamic evaluation for urinary retention with DM at a single institution over a six-year period, with IRB approval. We examined clinicopathologic variables potentially associated with the outcomes of interest, which include characterization of clinical presentation, examination of urodynamic findings, history of pelvic surgery, with urinary tract infection, rates of concomitant overactive bladder symptoms, as well as history of treatment of overactive bladder.

Results: In total, 28 females over the age of 65 with DM presented with urinary retention (PVR > 100 mL). The average age was 75 years (range 65-86). Average BMI was 29.1 (range 21.6-37.8). Average parity was 5.2 (range 0-8). 23 patients identified with symptoms of OAB. 17 (60%) patients had been treated for OAB; 8 patients used an anticholinergic, 5 used a B-agonist, 3 had botox injections, 2 had PTNS, 3 had Interstim. 15 (53%) patients had a history of UTI and 15 had a history of prior pelvic surgery. The UDS data was consistent with 4 (14%) patients with detrusor hyperactivity with impaired contractility (DIIC), 1 patient with acontractile bladder, 11 (39%) with detrusor underactivity, 6 with stress urinary incontinence, 5 (18%) with detrusor overactivity, 1 with bladder outlet obstruction, and 2 with normal UDS parameters.

Conclusion: We found an elderly female population with DM and urinary retention with a wide range of UDS findings, single or in combination. While half of the patients had impaired bladder contractility, bladder acontractility is rare. OAB with or without NDO was common in this group. Over half of patients had history of UTI and the majority were symptomatic, with LUTS. This highlights the importance of UDS in this elderly population, to best formulate a treatment plan and decrease risk for infection and renal damage.
Poster #NM111
CLINICAL PRESENTATION OF AN ELDERLY FEMALE POPULATION WITH UNDERACTIVE BLADDER
Cristina Palmer, DO and Gamal Ghoniem, MD, FACS
University of California Irvine, Orange, California
Presented By: Cristina J. Palmer, DO

Introduction: Underactive bladder (UAB) is a relatively new concept. UAB is thought to be a series of symptoms associated with incomplete bladder emptying, with several different etiologies proposed. In contrast, the UDS finding that may or may not be associated with UAB, detrusor underactivity, is well defined in the literature. The prevalence of detrusor underactivity in men older than 70 years old has been estimated at 48% and for women, estimates range from 12-45%, however, we do not know the prevalence of underactive bladder. Therefore, we aim to describe the clinical presentation of underactive bladder in an elderly female population.

Methods: We performed a retrospective chart review of female patients aged 65 or older undergoing UDS evaluation for urinary retention at a single institution over a six-year period, with IRB approval. We examined clinicopathologic variables potentially associated with the outcomes of interest, which include characterization of clinical presentation of underactive bladder, comparison of underactive bladder to the urodynamic finding of detrusor underactivity, association with UTI, rates of anticholinergic use.

Results: In total, 122 females over the age of 65 presented with urinary retention (PVR > 100 mL). Ages ranged from 65-99, an average of 77.5 years. Average parity was 3.07 (range 0-10). 91 (75%) patients identified with symptoms of OAB. 36 (29.5%) patients had been treated for OAB; 27 patients had used an anticholinergic, 6 had botox injections, 6 had PTNS, and 3 had Interstim placement. 61 (50%) patients had a history of UTI and 76 (62%) had a history of prior pelvic surgery. The urodynamic data was consistent with 5 patients with acontractile bladder, 44 (36%) with detrusor underactivity, 38 (31%) with detrusor overactivity, 3 (2%) with bladder outlet obstruction.

Conclusion: The clinical presentation of underactive bladder is often complex. Our study shows that their voiding dysfunction is often multifactorial and complex in nature as well. In elderly female patients with a history of pelvic surgery, of those who present with urinary retention, we have a high clinical suspicion for underactive bladder. As there are a wide range of UDS findings, we advocate for performing UDS on these patients to delineate bladder function. Prevalence of UTI is high, therefore, close monitoring of this patient population may be necessary for optimal care.
Poster #NM112
PAINFUL URGENCY AND/OR PAINFUL FILLING PREDICTIVE OF SOMATIC SYMPTOMS AND CHRONIC PAIN IN WOMEN WITH OVERACTIVE BLADDER
Casey G. Kowalik, MD, Sophia Delpe, MD, Rachel Sosland, MD, Melissa R. Kaufman, MD, PhD, Roger R. Dmochowksi, MD and W. Stuart Reynolds, MD, MPH
Nashville, TN
Presented By: Casey Kowalik, MD

Introduction: Current theories hypothesize that overactive bladder (OAB) and IC/BPS comprise a spectrum of bladder hypersensitivity with overlapping symptoms. Symptoms of painful urgency and filling are common in women with OAB and may be correlated with more severe urologic symptoms and decreased quality of life. This analysis investigated the relationships of painful urgency and filling with somatic symptoms and chronic pain conditions in women with OAB without an IC/BPS diagnosis.

Methods: Women with OAB symptoms and without IC/BPS diagnosis were recruited to complete validated questionnaires assessing urinary symptoms (OAB symptom scale [OAB-ss] and Health Related Quality of Life [OABq-HRQL]), somatic symptoms, and pain syndromes. Participants were categorized into 3 groups, (1) Neither (2) Either or (3) Both, based on their report of painful urgency and/or painful filling. Multivariable regression analyses were performed to determine factors predictive of have either or both painful urgency and/or painful filling.

Results: Of 218 women with OAB symptoms, 46% (n=101) had neither painful urgency nor painful filling, 43% (n=94) had either, and 11% (n=23) had both. There was an increase in average OAB-SS, pain intensity, and somatic symptom score, and a decrease in OAB-HRQL from neither > either > both. Controlling for age, women with either or both urologic pain symptoms had an increase in somatic symptom score by 1.5 and 3 points and an increase in pain intensity by 3 and 6.5 points, respectively, compared to women in the neither group. Additionally, women with either or both symptoms were 2.9 and 3.5 times more likely to have irritable bowel syndrome and 3.3 and 4.5 times, respectively, more likely to have chronic pelvic pain.

Conclusion: In this group of women with OAB, without IC/BPS, the majority reported either painful urgency, painful filling, or both. Experiencing painful urgency and/or filling was associated with increased somatic symptom burden and pain intensity. Additionally, women with either or both symptoms were more likely to have chronic pain conditions, hypothesized to have a common central pathophysiology. These findings support the hypothesis that OAB and IC/BPS diagnoses may represent a continuum of bladder hypersensitivity with women experiencing pain being more likely to also have underlying central sensitization mechanisms.

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Poster #NM113
LONG TERM OUTCOMES OF TRIAMCINOLONE INJECTIONS IN INTERSTITIAL CYSTITIS/BLADDER PAIN SYNDROME
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Presented By: Iryna Crescenze, MD

Introduction: Triamcinolone injections are listed as a third line therapy for patients with ulcerative interstitial cystitis/painful bladder syndrome (IC/PBS) and as an alternative to fulguration alone. Limited data exists to date to demonstrate the symptom specific benefits of steroid injections, duration of benefit and need for repeat injection. This study aimed to describe the long-term outcomes of triamcinolone injection use in ulcerative IC/BPS.

Methods: Patients with IC/PBS undergoing cystoscopy with steroid injection (CPT 52283, 53899) from 04/2005 to 12/2015 were identified from an electronic medical record. Patients were excluded if they had ulcerations due to other causes such as radiation or scarring. Medical records were reviewed to assess baseline patient characteristics and treatment outcomes. Paired student t-test was used to compare outcomes prior to and after treatment.

Results: Thirty-one patients were followed for a median of 41 months (4-72). Median age was 65 years (45-96), 81%(25/31) were women, and median duration of symptoms was 3 years (0-13). All patients tried and failed multiple other treatment modalities and had biopsies confirming no malignancy and complete lesion fulgurations. Six were on cyclosporine at the time of injection. After first triamcinolone injection 90%(28/31) reported subjective overall improvement, 2 had marginal improvement, and 1 patient reported no improvement. Mean AUA symptom scores decreased from 17.1+/-6.9 to 12.6+/-7.8 (p=0.005) and quality of life scored from 4.5+/-1.5 to 3.2+/-2.0 (p<0.001). Specifically, frequency score decreased with injection from 3.8+/-1.3 to 2.7+/-1.6 (p=0.002) and nocturia from 3.6+/-1.2 to 2.9+/-1.07 (p=0.040). Eighty-one percent (25/31) had repeat injections. The median number of injections was 3 (1-11) with an average time between injections of 9.2+/-7.1 months. At the last follow up 32%(10/31) patients were planning for repeat injections for symptom recurrence and 42%(13/31) patients were on cyclosporine, of which 4 were managed with both injections and cyclosporine.

Conclusion: Triamcinolone injections are effective in reducing frequency and nocturia and improving overall quality of life in patients with ulcerative IC/PBS. The average duration of benefit is 9 months and >80% will require repeat injections for symptom recurrence. A third of the patients continue on long term therapy and which can be combined with medical management.

Funding: None
FEASIBILITY OF AN INFRARED SPECTROSCOPY DEVICE AS A DIAGNOSTIC TOOL FOR INTERSTITIAL CYSTITIS

Jennifer Locke, MD, PhD, Karla Rebullar, BSc, Babak Shadgan, MD, Lynn Stothers, MD, Joel Teichman, MD and Mark Nigro, MD
Vancouver, BC
Presented By: Jennifer A. Locke, MD, PhD

Introduction: Interstitial cystitis (IC) is currently a clinical diagnosis of exclusion. Clinicians often find diagnosis confusing as there is no gold standard diagnostic test. Transcutaneous near infrared spectroscopy (NIRS), a noninvasive optical tool that monitors tissue oxygenation, has the potential to differentiate IC from healthy controls by measuring differences in oxygen saturation of the bladder detrusor. We aim to assess patient satisfaction with and feasibility of the NIRS evaluation in the clinic setting among IC patients.

Methods: 20 subjects with IC diagnosis were recruited at two hospital sites. 11 healthy controls were recruited from the community. Participants were asked to complete the Interstitial Cystitis Symptom Index (ICSI), Problem Index (ICPI), Pain, Urgency and Frequency (PUF) score and a satisfaction survey. Ultrasound was used to verify bladder position and volume. NIRS was placed over the bladder and mid-thigh, as the control site, to collect tissue saturation index (TSI) and calculate TSI-diff (bladder TSI minus quadriceps TSI). Statistical analysis was used to compare measurements between the two groups. Qualitative analysis was used to study survey results.

Results: Mean age of IC subjects was 52.2 and 39.7 for controls. IC patients had higher symptom scores than asymptomatic controls. See Table 1.

No significant difference between the bladder TSI was observed in the two groups. TSI-diff was statistically different. See Table 2.

A representative TSI profile from an IC subject is shown in Figure 1 (Figure 2 control). This subject had an ICSI score 9. Satisfaction survey found that only two out of 20 IC patients preferred providing urine sample for urinalysis and culture over the transcutaneous NIRS. Participants rated their NIRS experience an average of 4.76/5.

Conclusion: This pilot study has demonstrated feasibility of NIRS in IC subjects. Subjects rated NIRS as having high acceptability. Limitations include small sample size, younger controls, and differences in bladder volume and symptomatology. Future work includes a larger study, more stringent criteria in subject inclusion, and evaluating infections.
Poster NM115
T1 MAPPING OF HUMAN BLADDER WALL USING NOVEL CONTRAST MIXTURE IN 3TESLA (T) SCANNER: APPLICATIONS IN BLADDER PAIN SYNDROME/INTERSTITIAL CYSTITIS (BPS/IC)
Pradeep Tyagi, PhD1, Joseph Janicki, BA2, Chan-Hong Moon, PhD3, Jonathan Kaufman, PhD2 and Christopher Chermansky, MD1
1Department of Urology, University of Pittsburgh School of Medicine; 2Lipella Pharmaceuticals Inc, Pittsburgh PA; 3Department of Radiology, University of Pittsburgh School of Medicine
Presented By: Christopher J. Chermansky, MD

Introduction: Available techniques to diagnose diffuse changes within the interstitial space of the bladder wall in BPS/IC patients are invasive, susceptible to site selection bias (biopsy), and expose patients to high doses of ionizing radiation. Magnetic Resonance Imaging (MRI) is a radiation free, non-invasive tomographic imaging technique that is gaining increased use within the pelvis in evaluating pelvic organ prolapse and more recently pelvic floor hypertonicity. T1 weighted MRI imaging of the human bladder suffers from poor contrast-to-noise ratio (CNR) and interference from motion and chemical shift artifacts in prolonged image acquisition. We recently reported that the instillation of a novel contrast mixture (NCM) within the rat bladder could achieve high CNR in differentiating the rat bladder wall from urine and the perivesical fat without artifact. In this study, we tested the clinical safety and feasibility of NCM enhanced MRI in evaluating patients with BPS/IC.

Methods: Six female subjects aged 25-78 years consented for a 3.0 Tesla MRI study involving transurethral instillation of a NCM composed of 4mM Gadobutrol (Gadolinium) and 5mM Ferumoxytol in 50mL of water. 2D fast low-angle-shot (FLASH) MR sequence with variable flip angles (3°–23°) was applied to measure T1 relaxation time of the bladder wall. The imaging parameters were optimized to minimize the motion and fat chemical shift artifacts.

Results: NCM instillation evoked neither pain nor discomfort, and the Ferumoxytol suppressed the Gadobutrol enhancement in the bladder lumen to afford a four-fold higher CNR in the bladder wall compared to pre-contrast images (57.84 ± 32.01 vs 12.34 ± 9.63, p<0.01). Chemical shift artifact from perivesical fat was minimized by high spatial resolution of 350μm x 350μm per pixel and the large readout bandwidth of 574 Hz/pixel, allowing for more accurate detection of bladder wall thickness that decreased from 3.39±0.74mm to 2.93±0.8mm in post-contrast images, p<0.05. Mean T1 relaxation times of bladder wall estimated from pre-contrast and post-contrast images were 1271 ± 201ms and 1000 ± 299.3ms, respectively.

Conclusion: Our findings demonstrate the safety and feasibility of instilled NCM enhanced MRI in distinguishing true enhancement of T1 contrast in bladder wall. These findings hold promise in the characterization of edema and fibrotic changes within the bladder wall for phenotyping BPS/IC.
This project was funded by NIDDK grant 1R41DK108397
Poster #NM116
ATYPICAL URETHRITIS: SHOULD WE BE TESTING FEMALE PATIENTS FOR THIS?
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\textsuperscript{1}Department of Urology, University of Tennessee Graduate School of Medicine, Knoxville, TN; \textsuperscript{2}University of Tennessee College of Medicine, Memphis, TN; \textsuperscript{3}Department of Surgery, University of Tennessee Graduate School of Medicine, Knoxville, TN
Presented By: Matthew Sorensen, MD

\textbf{Introduction:} Few studies have examined the infection rates of Ureaplasma urealyticum and Mycoplasma hominis in female patients with urinary symptoms. While U. urealyticum has been shown as an etiological agent in nongonococcal urethritis (NGU) in males, its role in NGU in females remains unclear. The primary aim of this study is to examine the prevalence of U. urealyticum and M. hominis in females presenting with urinary symptoms and to determine the rate of symptom improvement with antibiotic treatment.

\textbf{Methods:} We performed a retrospective review of all female patients from February 2017 through June 2017 who presented with urinary symptoms (including dysuria and/or bladder pain) and underwent testing for atypical urethritis with both U. urealyticum and M. hominis urine cultures. Patients were treated with doxycycline or azithromycin if cultures were positive. Demographics, clinical history, culture results, treatment regimen, and symptom resolution were recorded.

\textbf{Results:} Between February 2017 and June 2017, 110 women were tested for U. urealyticum and M. hominis. Of those tested, 6 (5.5\%) and 15 (13.6\%) women tested positive for M. hominis and U. urealyticum, respectively, and 1 (0.9\%) tested positive for both. Eleven (50\%) women had improvement of symptoms with antibiotic treatment. Eight (36.4\%) had persistent symptoms and three (13.6\%) were lost to follow up. No patient characteristics or demographics were predictive of positive atypical culture results or resolution of symptoms after therapy.

\textbf{Conclusion:} Based on our data, 20\% of women with dysuria and/or bladder pain tested positive for atypical urethritis. Fifty percent of the women had improvement in symptoms after antibiotic treatment. Testing and treating women for atypical urethritis when they present with dysuria and/or bladder pain may be worthwhile, though larger studies are warranted.
FINANCIAL BURDEN OF RECURRENT URINARY TRACT INFECTIONS IN WOMEN: A TIME-DRIVEN ACTIVITY-BASED COST ANALYSIS

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U. T Southwestern Medical Center
Presented By: Shivani Gaitonde

Introduction: To apply a Time-driven Activity-Based Costing (TDABC) [1] model to better define the financial burden of long-term management of uncomplicated recurrent urinary tract infections (RUTIs).

Methods: In order to quantify costs for RUTI, a care-delivery value chain was created to delineate each aspect of treatment for RUTI via process maps for: urologic visits, urinalysis and cultures, diagnostic testing, and acute and long-term therapies. RUTI was defined as ≥2 UTIs in 6 mth or ≥3 UTIs in 12 mth[2]. The treatment pathways included conservative measures (see table), antibiotic prophylaxis (post-coital, self-start or continuous) and cystoscopy with fulguration of trigonitis[3]. The practical capacity for each index pathway was derived from the cost summation of all resources utilized, per minute actively spent delivering care. Cost was estimated using the Medicare Physician Fee Schedule, average local pharmacy pricing, and institutional expenses for outpatient cystoscopy under anesthesia with fulguration of trigonitis.

Results: The baseline cost burden of RUTI, including initial evaluation, imaging, cystoscopy and urine cultures, was $1,100. Acute antibiotic treatment cost ranged widely, from $9 for 7 days of oral TMP-SMX to $3,970 for 14 days of IV Ertapenem via PICC. Additional yearly cost of long-term management varied considerably among conservative therapies, from $49 for D-mannose to $1,288 for vaginal estradiol ring. Among antibiotic prophylaxis, yearly cost ranged from $40 for self-start antibiotics, $57 for post-coital antibiotics, and $186 for 6-months continuous antibiotics. Cystoscopy with fulguration was costlier than any other pathway, $6,172. Finally, average practical capacity of each stage of care ranged from $0.003/min for urine culture to $80.49/min for estrogen ring.

Conclusion: Using a TDABC approach we found that women with RUTI have significant financial and time investment in the evaluation and treatment of their condition. This information will facilitate the comparison of various treatment pathways in RUTI management.

References:

Financial Funding: none

<table>
<thead>
<tr>
<th>Stages of Care-Delivery Value Chain</th>
<th>Estimated Cost</th>
<th>Mean Practical Capacity (Cost per time in minutes)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initial urologic appointment</td>
<td>$166 KUB: $60</td>
<td></td>
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<tr>
<td>Imaging</td>
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<td>Urinalysis</td>
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<td>Urine culture</td>
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<td>Acute antibiotic treatment (7d course)</td>
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<td>PO Nitrofurantoin 100mg BID</td>
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<td>Complex antibiotic treatment (14d course)</td>
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<td>PICC + IV Ertapenem 1g</td>
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<td>Vaginal estradiol ring</td>
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<td>Long-term antibiotic prophylaxis</td>
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<tr>
<td>Post-coitus**</td>
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<tr>
<td>Continuous***</td>
<td>$186</td>
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<tr>
<td>Cystoscopy under anesthesia with Fulguration of Trigonitis</td>
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<td></td>
</tr>
</tbody>
</table>

^ Institutional values obtained.
* 3-d course at treatment dose, with average 2.2 recurrent UTI episodes per year while on prophylaxis.
** 1 dose within 2 hours of coitus, with average 1 instance per week.
*** 6-mo course at low-dose.
EVALUATION OF THE URINARY MICROBIOME OF INTERSTITIAL CYSTITIS/BLADDER PAIN SYNDROME PATIENTS: IS THERE A CORRELATION WITH THE URINE CULTURE COLONY COUNT?
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1Drexel University College of Medicine, Philadelphia, PA; 2Albert Einstein Medical Center, Philadelphia, PA; 3Lake Erie College of Osteopathic Medicine, Bradenton, FL
Presented By: Rebecca Cori Rinko, DO

Introduction: Interstitial Cystitis/ Bladder Pain Syndrome (IC/BPS) is still incompletely understood. Recent work suggests that the urinary microbiome plays an important role. This biological data could have implications in the diagnosis and treatment of IC/BPS. During evaluation of urinary symptoms, a urine culture is collected to rule out a urinary tract infection. We propose that there may be a correlation between low level bacterial counts in urine cultures in IC/BPS in the absence of a clinical urinary tract infection, defined as >100,000 colony-forming units (CFU) of bacteria. The objective of this study is to examine the relationship between the findings of low colony-count cultures and patients with IC/BPS.

Methods: Patient charts were reviewed from February 2017 through July 2017. Patients with a diagnosis of IC/BPS based on ICD-10 coding, over the age of 18 were included in our analysis. Urine samples were sent for culture at each visit. These cultures were assessed for growth, CFU, and type of bacteria. Statistical analysis was used to compare urine culture results.

Results: Our cohort was comprised of 428 patients, with a total of 826 urine cultures. Twenty-one of the patients were males (5%), providing 38 (5%) of the urine culture results. The most common culture result was no growth, 561 (67.9%), followed by 10,000-50,000 CFU, (112, 13.6%), and then >100,000 CFU (66, 8.0%). The most common types of bacteria found in positive cultures were Enterococcus 26%, E. Coli 15%, Group B Strep (GBS) 13.6%, and Klebsiella 10.6%.

We compared CFU of the four most common bacteria types, Enterococcus, E. Coli, Group Beta Strep, and Klebsiella with a significance value of p< 0.0083. Enterococcus grew out at lower CFU levels, 10,000-50,000CFU more often than E. Coli (p=0.007). GBS more commonly grew at 100-1000CFU compared to E Coli (p<0.001) and Klebsiella (p=0.001). Males were more likely than females to have no growth and lower colony forming units. When bacteria did grow, excluding contaminated cultures, there was no difference between males and females for type of bacteria.

Conclusion: Our data show that in patients with IC/BPS, urine cultures were significantly more likely to grow bacteria with a lower CFU, most commonly 10-50,000 CFU. Enterococcus was the most common bacteria. The findings may be related to several factors including regional microbiome and requires further investigation.
Poster #NM119
DOES THE USE OF ANTIBIOTIC PROPHYLAXIS IN PATIENTS OVER 70 YEARS OF AGE PRIOR TO URODYNAMIC TESTING REDUCE THE RATE OF SYMPTOMATIC URINARY TRACT INFECTION?
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Presented By: Elisabeth Sebesta, MD

Introduction: In the 2017 SUFU Best Practice Statement on antibiotic prophylaxis in the non-index urodynamics (UDS) patient, it is recommended that patients older than 70 years old receive prophylactic antibiotics prior to UDS. As no randomized controlled trials in this patient population have been conducted, the recommendation is based on observational data that older age is a predictor for urinary tract infection (UTI) and bacteriuria, with the use of age as a marker of overall patient frailty. In this study, we examined our experience with prophylaxis in this patient population and the rate of symptomatic UTI following UDS.

Methods: We retrospectively reviewed all patients over 70 years old who underwent UDS from 6/2016 to 6/2017. Patients with indwelling catheters and who used intermittent self-catheterization were excluded. Patient comorbidities, use of pre- and post-UDS antibiotics, and rate of post-UDS symptomatic, culture-positive UTI were evaluated. Odds ratio (OR) and number needed to treat (NNT) were calculated.

Results: A total of 136 patients were included for analysis. 75 (55%) were female and mean age was 77.8 +/- 5.2 years. The majority of patients had multiple comorbidities, including diabetes (21%), cardiovascular disease (20%), chronic renal insufficiency (12%), and solid tumors (25%). Overall, 29/136 (21%) received prophylactic antibiotics. 95% of patients had a visit following UDS within a mean time of 19.7 +/- 19.9 (range 1 to 103) days from UDS. 15 patients (12%) received post-UDS antibiotics for presumed UTI, 6 of whom did not get pre-UDS prophylaxis. Among these 6 patients, only 3 had documented urinary symptoms with a positive urine culture; therefore, the symptomatic, culture-positive UTI rate after UDS without prophylaxis was 3%. The use of prophylactic antibiotics prior to UDS did not significantly reduce the rate of culture-positive, symptomatic UTI (OR 1.2 [p=0.88]), with NNT of 167 patients to prevent one UTI. No patient required inpatient treatment for UTI.

Conclusion: The SUFU Best Practice Statement recommends prophylactic antibiotics in all patients over 70 years of age prior to UDS. We observed a very low symptomatic, culture-positive UTI rate and found prophylactic antibiotics did not significantly reduce the risk of UTI following UDS. To avoid potentially numerous patients being unnecessarily exposed to antibiotics, further studies are needed in this patient population to better determine if prophylaxis is beneficial.
Poster #NM120
THE PREVALENCE, SEVERITY AND DISTRIBUTION OF PAIN AMONG OVERACTIVE BLADDER (OAB) PATIENTS ARE INTERMEDIATE BETWEEN INTERSTITIAL CYSTITIS (IC) AND CONTROLS
Maung Thu, MD, H. Henry Lai, MD and Joel Vetter, MS
St. Louis, MO
Presented By: J. Maung H. Thu, MD

Introduction: It has been long accepted that symptoms of overactive bladder (OAB) include urgency and frequency without bladder pain, and for interstitial cystitis (IC) the hallmark symptoms include bladder pain without urinary incontinence. However, recent studies suggested that the symptoms of the two conditions (OAB and IC) might overlap in some patients. Here we described the prevalence and characteristics of pain reported by patients who were diagnosed with OAB.

Methods: Data were obtained from 53 patients diagnosed with OAB, 26 diagnosed with IC, and 30 controls who participated in a questionnaire-based study of their pain and lower urinary tract symptoms. The following questionnaires were administrated: Interstitial Cystitis Symptom and Problem Indexes (ICSI, ICPI), Genito-Urinary Pain Index (GUPI), International Consultation on Incontinence Questionnaires (ICIQ-UI, ICIQ-OAB), Urinary Distress Inventory (UDI-6), Incontinence Impact Questionnaire (IIQ-7), a body pain map (BPI), genital pain map, OAB-q, and numerical rating scales of bladder pain and urinary symptoms (urgency, frequency).

Results: On the body pain map (BPI), about 33% of patients with OAB reported pain in the pelvic regions, compared to 0% in controls and 77% in IC (p<0.001). Among them, 28% of patients with OAB reported pain outside the pelvic regions, compared to 0% in controls and 67% in IC (p=0.003). On the genital map, similar trend was observed among females for genital pain sites (controls>OAB<IC, p<0.001). In terms of pain severity, a similar trend was also observed, i.e., the intensity of pain reported by OAB patients was intermediate between controls and IC (2.4 vs. 0.6 vs. 4.3 out of 10, p<0.001). In addition, among OAB patients, the pain severity (GUPI pain score) was positively correlated with urinary symptoms and bother (ICIQ-UI, ICIQ-OAB, UDI-6, IIQ-7, OABq-SS, OABq-QOL, p all<0.05)

Conclusion: Contrary to conventional wisdom, almost a third of patients with OAB reported pain in the pelvis. The prevalence, severity of pain, and distribution of pain sites among OAB patients were intermediate between IC and controls. The results suggest that OAB and IC might not be separate entities but rather represents a continuum of underlying disease processes with predominantly urgency and frequency symptoms in OAB and pelvic pain in IC.

Funding: none
Poster #NM121

URINARY TRACT INFECTION RATES BETWEEN VARIABLE ANTIBIOTIC PROTOCOLS AFTER ONABOTULINUMTOXINA INJECTIONS

Rachel Sosland, MD, Casey G Kowalik, MD, Sophia Delpe, MD, Doug Milam, MD, W. Stuart Reynolds, MD, MPH, Roger R. Dmochowski, MD and Melissa R Kaufman, MD, PhD
Nashville, TN
Presented By: Rachel Sosland, MD

Introduction: Antibiotic prophylaxis at the time of onabotulinumtoxin A (BTX-A) injection for overactive bladder (OAB) is considered standard of care to prevent urinary tract infections (UTI). However, wide variability exists in practice patterns with regards to antibiotic regimens. We hypothesized that peri-procedural antibiotics administration at the time of injection is equivalent to the administration of additional antibiotics either prior to or following injection to prevent symptomatic UTI.

Methods: A retrospective review of all adult patients undergoing intravesical BTX-A injection for idiopathic OAB was conducted. A total of 70 patients met inclusion criteria. Data from all injection events was abstracted from the medical record, for a cumulative 262 injections from 2004 to 2016. Patients with a history of neurologic disease, diabetes, renal transplant, catheter dependence, and UTI within one month of injection were excluded from analysis. Injection events were grouped based on antibiotic protocol used: 1) prophylactic antibiotics prior to procedure plus peri-procedural dose, 2) peri-procedural antibiotics only, and 3) peri-procedural dose plus post-injection antibiotics. UTI was defined as a culture proven infection in the setting of symptoms within four weeks of injection.

Results: 128 injection events were included in the analysis. Eighty-five (66%) injections were performed with only peri-procedural antibiotics, 27 (21%) injections were performed following prophylactic antibiotics and 16 (13%) were followed with a course of post-injection antibiotics. The overall UTI rate was 14.8%, with 7% (n=2) occurring in the pretreatment group, 15% (n=13) in the peri-procedural only group and 25% (n=4) in the post-procedural group, with no significant difference between the three groups (p=0.29). Patients with positive urinalysis on the day of injection were more likely to have received a course of pre-injection antibiotics in addition to peri-procedure antibiotics (p=0.05).

Conclusion: In this population of adults undergoing BTX-A injection for OAB there were no statistically significant differences in UTI events between the three groups following injection, indicating that a one-time dose of peri-procedural antibiotics may be sufficient to protect against UTI. This exploratory study provides the foundation for a randomized, controlled trial further assessing UTI risk among antibiotic protocols, which could have the potential to modify clinical practice.
Poster #NM122

INTERSTITIAL CYSTITIS/BLADDER PAIN SYNDROME: WHAT IS THE QUALITY OF THE INFORMATION PATIENTS FIND ON THE INTERNET??

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1Department of Urology, Columbia University Medical Center, New York, NY; 2Department of Biostatistics, Columbia University Medical Center, New York, NY
Presented By: Nina Mikkilineni, MD

Introduction: Information on the treatment of Interstitial cystitis/Bladder pain syndrome (IC/BPS) is often searched online by patients, with Google and Bing being the top-used search engines. Given that there is no cure for IC/BPS and several treatments exist, our goal was to determine the quality of online information available to patients.

Methods: Internet searches for the phrases “treatment for interstitial cystitis” and “treatment for bladder pain syndrome” were done using Google and Bing. The first 30 consecutive websites from each search were included. Duplicate sites within the same search were excluded. Each website was categorized as provider site, academic center, private practice, patient support, medical news, society website, industry/profit business, or other. Website content was scored on a 15-point scale based on the American Urological Association IC/BPS guidelines (15=most comprehensive) and were classified as “good” (>10 points), “average” (5-10 points), or “poor” (<5 points). Chi-square analysis was performed to compare Internet search results.

Results: We identified 120 websites among 4 different searches and 72 websites were unique hits (60%). Among unique hits, 2 were provider site (3%), 8 academic center (11%), 2 private practice (3%), 27 patient support (38%), 4 medical news (6%), 7 society website (10%), 6 industry/profit business (8%), and 16 other (22%). 36, 22, 14 sites were good, average, and poor (50%, 31%, 19%), respectively. When unique sites were divided into academic (n=30) vs. non-academic (n=42), there was no difference in the number of good, average, and poor websites (p=0.99). When comparing all unique Google hits (n=47) to all unique Bing hits (n=48), regardless of search term, Bing had more good, and less poor, hits compared to Google (p=0.34). When comparing all unique hits for IC (n=43) to all unique hits for BPS (n=48), regardless of search engine, IC had more good hits compared to BPS (p=0.60). No search had > 60% good sites.

Conclusion: Internet searches for treatment of IC/BPS yielded high quality information only half the time, regardless of search engine or search term. Interestingly, when selecting for academic-only sites, information quality did not change, as one would hope. With the Internet being a primary resource for patients, this incomplete and inaccurate information may confuse some patients and may make patient counseling more challenging for physicians.

Financial funding: none.
Poster #NM123
PATTERNS OF AND RISK FACTORS FOR ANTIMICROBIAL RESISTANCE IN FEMALE UROLOGICAL PATIENTS WITH URINARY TRACT INFECTIONS IN THE NEW YORK/NEW JERSEY METROPITAN AREA OUTPATIENT SETTING
Gina Kirkpatrick, DO, MPH1, Anat Zelmanovich, MD1, Cristina Cicogna, MD1, Themba Nyirenda, PhD1, Michelle Kim, MD1, Benjamin Press2, Mary Fakunle2, Alan Heish2 and Debra Fromer, MD1
1Hackensack University Medical Center, Hackensack, NJ; 2Rutgers-NJ Medical School, Newark, NJ
Presented By: Gina Kirkpatrick, DO, MPH, MBA

Introduction: The majority of community-acquired urinary tract infections (UTIs) occur most commonly in women, and are a common problem seen in the outpatient female urology practice. Given the increasing utilization of antibiotics in the community as well as the complexity of UTI in urological patients, we assessed the patterns of and risk factors for antimicrobial resistance in female patients with UTIs who had culture-proven bacteriuria.

Methods: Billing codes for UTI were used to identify all female patients with UTI in a predominantly female urology practice between January 2015 and December 2016. All patients with culture-proven bacteriuria were then characterized based on patient demographics at their index visit. Patterns of resistance to both oral and intravenous antibiotics were obtained per organism. Univariate analysis was used to determine potential risk factors for resistance to multiple oral antibiotics amongst the predominant organisms.

Results: 908 patients with UTI were identified, with 2,227 positive cultures. 32.3% of patients had 3 or more UTIs during the study period. The resistance patterns for the commonly presenting organisms varied according to organism. The predominant organism was E. coli, accounting for 1,170 cultures in 611 patients, followed by enterococcus in 357 cultures, klebsiella in 294 cultures, proteus in 114 cultures, enterobacter in 98 cultures and pseudomonas in 62 cultures. Of the patients with E. coli UTI, 29.5% were resistant to 3 or more oral antibiotics. Further, 39.5% of the E. coli encountered was resistant to fluoroquinolones and 34.4% were resistant to trimethoprim-sulfamethoxazole. Resistance to intravenous antibiotics within the E. coli group was as follows: cefazolin (13.7%), ceftazadime (7.1%), ceftriaxone (8.7%), aminoglycosides (13.8%), piperacillin/tazobactam (4.7%). Risk factors associated with E. coli resistance to 3 or more oral antibiotics included age ≥ 65 (p=0.0279), multiple sclerosis (p=0.0487), neurogenic bladder (p=0.0295), and 3 or more visits for UTI (p<0.0001).

Conclusion: In the outpatient female urology practice in our geographic region, antibiotic resistance of the predominant organisms causing UTI in the outpatient female urology practice is not uncommon. In fact, rates of resistance in this population to 3 or more oral antibiotics are as high as 29.5%. This finding underscores the problematic issues of antimicrobial resistance in the female urology patient with UTI.
Poster #NM124
LACK OF UNIFORMITY AMONG UNITED STATES GUIDELINES FOR DIAGNOSIS & MANAGEMENT OF ACUTE, UNCOMPLICATED CYSTITIS
Melissa Markowitz, Lauren Wood, MD, Andrew Medendorp, MD, Shlomo Raz, MD, David Haake, MD and Ja-Hong Kim, MD
Los Angeles, CA
Presented By: Melissa Markowitz, BA

Introduction: Acute, uncomplicated urinary tract infection (UTI) remains one of the most common bacterial infections seen in clinical settings in the United States. Since uncomplicated UTI is treated in a variety of different settings, guidelines from professional medical societies are expected to be well aligned. Our aim was to compare guidelines for diagnosis and treatment of acute, uncomplicated UTI from medical specialties in the U.S. and confirm uniformity.

Methods: The most up to date published guidelines within the fields of family medicine, obstetrics & gynecology, internal medicine, female pelvic medicine & reconstructive surgery, and infectious diseases in the U.S. were reviewed.

Results: All guidelines recommended the use of symptoms and urine dipstick only to diagnose uncomplicated UTI. Some societies did not recommend urine dipstick in cases of recurrent UTI or for patients with classic UTI symptoms with no underlying conditions or competing diagnoses. None recommend the use of urine culture to confirm diagnosis. All guidelines endorsed nitrofurantoin, trimethoprim-sulfamethoxazole, and fosfomycin as first-line agents. Discrepancies existed in the classification of fluoroquinolone and beta-lactam antimicrobials, with most guidelines describing them as second-line, while others considered them first or third-line agents. Amoxicillin and ampicillin, antibiotic agents with high resistance rates in the U.S., were described as important to avoid only by some U.S. guidelines. None mentioned the FDA black box warning for Cipro. (Table available for presentation).

Conclusion: Comparison of guidelines from various specialties revealed important differences in the approach to the treatment of acute, uncomplicated UTI. This lack of uniformity is likely to contribute to the varying clinical management of patients with UTI, emphasizing the need for more consistent guidelines that may improve physician adherence. With few exceptions, urine culture with sensitivity was not recommended for the diagnosis or treatment of UTI by any of the guidelines reviewed. However, the widespread use of empiric antibiotic therapy for UTI can contribute to growing antibacterial resistance pattern in the U.S. and impede efforts for antibiotic stewardship.
Introduction: Chronic pelvic pain and orchialgia are challenging conditions to treat in urologic practice. Recent research and treatment programs have begun to focus on musculoskeletal dysfunction as a major contributor to pelvic pain and orchialgia. Our objective was to assess the varying treatment modalities used in physical therapy for orchialgia.

Methods: A retrospective chart review was conducted on men who initially presented to our practice with orchialgia from January 2009 to June 2016 and referred for pelvic floor physical therapy. Each patient had a urologic assessment prior to physical therapy referral. Patients were evaluated and treated by our physical therapy team according to any presenting musculoskeletal impairments. Treatment included pelvic alignment exercises, therapeutic stretching/strengthening, manual therapy modalities, dry needling and biofeedback. Following treatment, a subjective global response measure was assessed based on patients’ self-reports of improvement in symptoms.

Results: A total of 392 patient charts met inclusion criteria for this retrospective study. Average age was 42.8 years with mean symptom longevity of 32.8 months. Pre-treatment average day pain was 4.5 (analog scale 1-10); worst day pain was 7.6. 83.2% of patients indicated their testicular pain was better, 16.1% reported no change and 0.7% reported worsening of their pain at average follow up of 6.4 months. Percentage utilization of each treatment modality is shown in Table 1. Mean number to therapy sessions was 9.9 and mean duration of treatment was 4.3 months.

Conclusion: Physical therapy serves as a valid and effective treatment option for patients with orchialgia. Percentage utilization of varying treatment modalities suggests that a multi-modal approach to physical therapy for orchialgia should be used.

<table>
<thead>
<tr>
<th>Treatment Modality</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Manual Therapy</td>
<td>37.8%</td>
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<tr>
<td>Hot/cold Therapy</td>
<td>87.9%</td>
</tr>
<tr>
<td>Manual Trigger Point Release</td>
<td>37%</td>
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<tr>
<td>Pelvic Muscle Rehabilitation</td>
<td>86.6%</td>
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<tr>
<td>Muscle Energy Technique</td>
<td>50.9%</td>
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<tr>
<td>Therapeutic Exercises</td>
<td>96.7%</td>
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<tr>
<td>Massage/TP Release/MF Release/Skin Rolling*</td>
<td>84%</td>
</tr>
<tr>
<td>Trigger Point Dry Needling</td>
<td>24%</td>
</tr>
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</table>

*Single modality or combination treatment with External Massage, Trigger point (TP) Release, myofascial (MF) Release, and/or Skin Rolling
Poster #NM126
PAIN RELIEVED BY VOIDING: A DISTINCT CLINICAL PHENOTYPE?
Casey G Kowalik, MD, Sophia Delpe, MD, Rachel Sosland, MD, Melissa R Kaufman, MD, PhD, Roger R Dmochoski, MD and W. Stuart Reynolds, MD, MPH
Nashville, TN
Presented By: Casey Kowalik, MD

Introduction: Urgency due to pain, pressure, or discomfort and pain with bladder filling have been found to be associated with more severe urological symptoms and decreased quality of life. Some women with painful urgency or filling experience improvements in their pain with voiding, however other women do not. We investigated the relationship between the symptom of ‘pain relieved by voiding’ and overactive bladder (OAB) symptoms, somatic symptoms, and chronic pain in a population of women with OAB.

Methods: Women with OAB symptoms were recruited to complete validated questionnaires assessing urinary symptoms (Overactive Bladder symptom scale [OAB-ss] and health related quality of life [OAB-HRQL]), pain, somatic symptoms, and chronic pain syndromes. Women without a history of neurologic condition, pelvic radiation, intestinal diversion, or IC/BPS were eligible. Participants were included in the analysis if they reported painful urgency or painful filling and were then grouped based upon reporting if their pain or discomfort was relieved by voiding.

Results: Overall, 117 women were included in the analysis and 95% (n=111) reported painful urgency, 24.8% (n=29) painful filling, or 19.7% (n=23) both. Of these 117 women, 36 (30.8%) reported pain relieved by voiding. Women with pain relieved by voiding were more likely to have chronic pelvic pain (30.6% v. 12.3%, p=0.018) and meet criteria for irritable bowel syndrome (58.3% v. 19.8%, p<0.0001) and fibromyalgia (13.9% v. 3.7%, p=0.04). Women with pain relieved by voiding had higher pain intensity scores (p=0.03). There was no significant difference in OABq-ss and OABq-HRQL between the groups.

Conclusion: Only 30% of women reporting painful urgency or filling have relief of pain upon voiding. Women whose pain was relieved by voiding were more likely to have chronic pelvic pain, fibromyalgia, and irritable bowel syndrome. Additionally, pain relieved by voiding was associated with increased overall body pain intensity. These findings suggest that pain relieved by voiding reflects an underlying central process and may represent a distinct clinical phenotype of women with painful urgency or painful filling.

Funding: NIH funding UL1TR000445, 1K23DK103910-01A1. SUFU Foundation grant
**Poster #NM127**

**DEFINITION OF RECURRENT URINARY TRACT INFECTIONS IN WOMEN: WHICH ONE TO ADOPT?**

Rena Malik, MD, Yuefeng Wu, BS and Philippe Zimmern, MD
UT Southwestern Medical Center, Dallas, TX
Presented By: Rena D. Malik, MD

**Introduction:** To systematically review the various definitions of Recurrent Urinary Tract Infection (RUTI) recommended by experts and specialty societies cited in biomedical literature.

**Methods:** A systematic review of RUTI in women was conducted using Medline, Embase, and Pubmed between 1966 and 2016 according to the Preferred Reporting Items for Systematic Review and Metaanalysis (PRISMA) Statement. Twenty-five publications were selected for inclusion in this analysis.

**Results:** From review of included publications, 14 definitions of RUTI were obtained. Each source was searched for a textual definition of RUTI as well as presence or absence of specific key elements including urinary symptoms, colony forming unit (CFU) count, bacterial species, number of UTIs/year, interval time between infections and a negative intervening culture. All data were reviewed by two separate investigators. The definition of RUTI was found highly variable in the literature. The tallying of key elements in included definitions suggests that a minimum RUTI definition should include urinary symptoms, urine culture CFU/ml threshold, differentiation of bacterial persistence vs reinfection by bacterial species, and number of UTIs per year.

**Conclusion:** This review of major RUTI definition recommendations by expert individuals and specialty societies underlines the lack of uniformity and the need for a more robust and generally agreeable RUTI definition for use in clinical and academic practice.

<table>
<thead>
<tr>
<th>Source</th>
<th>Year</th>
<th>Urinary Symptoms</th>
<th>CFU Count</th>
<th>Bacterial Species</th>
<th>Number UTIs/year</th>
<th>Negative Intervening Culture</th>
<th>Interval Time Between Infections</th>
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<td>8 (57)</td>
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Poster #NM128
RECURRENT URINARY TRACT INFECTION REFERRALS – DO PATIENTS TRULY HAVE RECURRENT INFECTIONS?
Rosa Park, MD¹ and Marisa Clifton, MD²
¹Hershey; ²Danville, PA
Presented By: Rosa Park, MD

Introduction: Many physicians refer patients to urology for evaluation of recurrent urinary tract infection (rUTI). Because of the limited data on this patient population, we aim to describe the demographics, symptomatology, exam findings and treatment strategies of patients referred to urology for rUTI, and to determine if these patients met criteria for the diagnosis of rUTI.

Methods: Retrospective analysis was conducted on a prospectively collected database of 50 consecutive patients referred to one urologic surgeon (MMC) for evaluation of rUTI from 8/1/2016-4/1/17. Women who were 18 years old and older with a referral complaint of rUTI were included. Patients previously evaluated in the department of urology within the past 3 years, and those with neurogenic bladder were excluded. For this study, recurrent UTI was defined as at least three symptomatic, urinalysis proven infections in the 12 months prior to evaluation in urology. Descriptive statistics are presented as percentages, means (standard deviations) or medians (interquartile range).

Results: Fifty patients were identified with a mean age of 58.3 (22.6) years. The presenting symptom was dysuria (80%). By history and chart review, approximately 42% of patients had at least one episode of asymptomatic bacteriuria. On exam, 34% of women had levator tension and 60% had vaginal atrophy. 52% of patients had upper tract imaging prior to their appointment, with only one patient having an identifiable urologic source for their recurrent infections. Less than 25% of the patients referred had true rUTI by definition. Of patients with follow-up, 36/43 (83.7%) had improvement of their chief complaint.

Conclusion: Careful history and pelvic examination are imperative to evaluate patients with rUTI. Less than a quarter of patients meet the definition of rUTI. Frequently, symptoms may be related to other diagnoses such as levator tension or vaginal atrophy. Once patients receive counseling and directed treatment to other conditions, over 80 percent have significant improvement in their symptoms.
Poster #NM129

WOMEN WITH UROLOGIC CHRONIC PELVIC PAIN SYNDROME (UCPPS) PRESENT WITH MORE SYSTEMIC PAIN OUTSIDE THE PELVIS, SEXUAL PAIN, AND MORE INTENSE PELVIC PAIN AND UROLOGIC SYMPTOMS COMPARED WITH MEN WITH UCPPS

H Henry Lai, MD1, Frederick Moh, BS2 and Joel Vetter, MS2
1Washington University School of Medicine; 2St Louis, MO

Presented By: H.Henry Lai, MD

Introduction: A recent study showed that men and women with urologic chronic pelvic pain syndrome (UCPPS) present with similar pelvic pain intensity, but that bladder-focused symptoms are more common in women (Clemens et al 2015). Here we examined the impact of gender on the clinical presentation of UCPPS in a large independent cohort of UCPPS patients (n=225), and expanded the comparison to include other non-urologic features (severity and distribution of systemic pain, chronic overlapping pain conditions, anxiety, depression) and sexual function.

Methods: Batteries of questionnaires were given to UCPPS patients to assess their urologic symptoms (urgency, frequency, nocturia), pelvic pain (pain intensity, bladder hypersensitivity), sexual function, and non-urologic features (severity and distribution of systemic pain, chronic overlapping pain conditions, anxiety and depression). The responses between men and women were compared using Student’s t-tests.

Results: 225 clinic patients (54 men, 171 women) with a diagnosis of UCPPS participated in this cross-sectional study. Women with UCPPS were more likely to report systemic pain outside the pelvis (p=0.006), higher intensity of systemic pain (p<0.001), and to have a history of depression (p=0.024), irritable bowel syndrome (p=0.004), and migraine headache (p<0.001) compared to male patients. There were no differences in fibromyalgia and chronic fatigue syndrome. About 68% of women and 69% of men were sexually active (p=0.93). Among those that were sexually active, women were more likely to report pain during or after sex (p<0.001) and more likely to avoid sexual intercourse (p<0.001) compared to men. In contrast to a previous study, women with UCPPS were likely to report more intense pelvic pain (p=0.004 on the 0-10 pain scale; p<0.001 for ICSI pain question, p<0.001 for ICPI pain question). Women were more likely to report that their pain was worse during bladder filling (p=0.003) and after urination (p=0.019). Women also reported more severe and bothersome urologic symptoms (urgency, frequency and nocturia, all p<0.05) compared to men.

Conclusion: In a large independent cohort of UCPPS patients, women with UCPPS were more likely to report systemic pain outside the pelvis, sexual pain, and more intense pelvic pain and urologic symptoms compared to men.

Source of Funding: none
Poster #NM130

PATIENTS WITH UROLOGIC CHRONIC PELVIC PAIN SYNDROME (UCPPS) WHO ARE YOUNGER PRESENT WITH MORE INTENSE PELVIC PAIN AND SYSTEMIC PAIN
H. Henry Lai, MD, Frederick Moh, BS and Joel Vetter, MS
Washington University School of Medicine, St Louis, MO
Presented By: H.Henry Lai, MD

Introduction: It has been hypothesized that patients with urologic chronic pelvic pain syndrome (UCPPS) who are younger might present with more severe symptoms. Here we examined the impact of patient age on the clinical presentation of UCPPS patients.

Methods: Batteries of questionnaires were given to UCPPS patients from our clinical practice to assess their urologic symptoms (urgency, frequency, nocturia), pelvic pain (pain intensity, bladder hypersensitivity), and non-urologic features (severity and distribution of systemic pain, chronic overlapping pain conditions, anxiety, and depression). The following questionnaires were administrated: Interstitial Cystitis Symptom and Problem Indexes (ICSI, ICPI), Pelvic Pain and Urgency/Frequency (PFU) Questionnaire, numeric ratings of pain, urgency, frequency, RICE Questionnaire, AUA Symptom Index (AUA-SI), body pain map, and history of chronic overlapping pain conditions, anxiety, and depression. One-way ANOVA comparisons were performed between the three patient age groups (age ≤30, >30 to 60, >60 year old).

Results: 225 clinic patients with a diagnosis of UCPPS participated in this cross-sectional study (54 men, 171 women). The numbers of patients in the three age groups were 59 (age ≤30), 120 (age >30 to 60), and 46 (age >60). Younger patients were likely to report more intense pelvic pain (p=0.046 on the 0-10 pain scale; p=0.021 for ICSI pain question, p=0.024 for ICPI pain question). Younger patients were also more likely to report that their pain was worse during urination (p=0.002) and after urination (p=0.005), but not worse during bladder filling (p=0.33). Patients in the 40 to 60 age group were more likely to report systemic pain outside the pelvis (p=0.002), higher intensity of systemic pain (p=0.047), and they were more likely to have a history of depression (p=0.022), fibromyalgia (p=0.029), and migraine headache (p=0.023). There were no differences in their urologic symptoms (urgency, frequency w nocturia) among the 3 age patient groups.

Conclusion: The clinical presentation of UCPPS patients varied with age. Younger patients were more likely to report more intense pelvic pain, more intense systemic pain, and more likely to report systemic pain outside the pelvis compared to older patients.

Source of Funding: none
**Poster #NM131**

**OBESITY DOES NOT INCREASE RISK OF PROLAPSE RECURRENT FOLLOWING SACRAL COLPOPEXY**

CR Powell, MD\(^1\), Isamu Tachibana, MD\(^2\), Bridget Eckrich, BS\(^2\), Jeffrey Rothenberg, MD\(^2\) and Thomas Gardner, MD\(^2\)

\(^1\)Indiana University School of Medicine Department of Urology; \(^2\)Indianapolis, IN

Presented By: Charles R. Powell II, MD

**Introduction:** Obesity has been associated with LUTS and may worsen long term success following robotic sacral colpopexy (RSC). We sought to determine the objective and subjective impact of obesity on outcomes following RSC. Sacral colpopexy has demonstrated superior outcomes in obese patients when compared to trans-vaginal mesh procedures [1].

**Methods:** Retrospective chart review was undertaken and subjects were grouped based on BMI at the time of RSC. BMI was stratified according to the NIH classification[2]. Apical failure was defined as descent of greater than 1cm, Anterior compartment failure was defined as POP-Q Ba point of >0, and Posterior compartment failure was defined as Bp point of >0. Patient reported outcomes included UDI-6 and QoL. 2-tail T-test and Chi-squared were used for analysis.

**Results:** 118 women underwent RSC between 2009 and 2016. Patients were divided into BMI<30 and BMI >=30 and had similar preoperative characteristics. Apical failure was noted in 3 (mean descent 2.0cm), Anterior failure was noted in 7 (average Ba +1.1 cm in failures), and Posterior failure was noted in 4 (mean Bp +1.0 cm) at 16 months' follow up. All failures occurred in the lower BMI category (Figure 1), p=0.01. Post-operative UDI-6 and QoL scores did not vary significantly between groups (5.0 vs. 5.6 and 2.6 vs. 3.1 respectively, p=0.54, p=0.96). Mean preoperative POP-Q scores were worse in the patients who would eventually fail in the apical, anterior, and posterior compartments (-1 vs. -3.5, +3.3 vs. +2.3, and +0.5 vs. +0.2, respectively) but logistic regression model using preoperative values did not predict failure (p=0.07). Preoperative Bp>0.5 was the most significant contributor to the model (OR 9.4, p=0.02). A history of prior prolapse surgery did not predict failure (p=0.95).

**Conclusion:** Obese patients undergoing RSC may not have increased risk of failure compared with non-obese patients. The low BMI group exhibited slightly more severe pre-operative prolapse than the high BMI group and suffered 100% of the failures. This may have contributed to the unexpected finding, but did not predict failure in a logistic regression model. This suggests obesity does not adversely affect failure rates.

![Table 1: Failure rates stratified by BMI following Robotic Sacral Colpopexy. All failures occurred in the BMI < 30 group. Significance was by 2-tailed T-test.](image)
Poster #NM132
PAIN IN SURGICAL VERSUS NONSURGICAL PATIENTS WITH PELVIC ORGAN PROLAPSE
Esther Han, DO, Laura Nguyen, MD, Jason Gilleran, MD, Jamie Bartley, DO, Kim Killinger, MSN, Kenneth Peters, MD, Judith Boura, MS and Larry Sirls, MD
Beaumont Health, Royal Oak, MI
Presented By: Esther Han, DO

Introduction: To evaluate pain in women with pelvic organ prolapse (POP) when comparing those who chose surgery (SGY) to those who did not choose SGY for management (N-SGY) of POP.

Methods: Adult women enrolled in a prospective POP database between 2008 and 2014 were reviewed. Baseline and outcomes data at one year after enrollment were collected including the Pelvic Floor Distress Inventory (PFDI). Pain was defined as a self-reported “yes” to question 20, “Do you usually experience pain or discomfort in the lower abdomen or genital region?” If “yes”, patients were asked to rank the degree of bother from 1 “not at all” to 4 “quite a bit”. Data were analyzed with descriptive statistics, Chi-square tests, Fisher’s Exact, and rank sum tests.

Results: 233 of 293 patients with prolapse had surgery within one year of enrollment; the N-SGY group had 60 patients (44/60 observation/undecided, 2/60 physical therapy, 14/60 pessary). The SGY group was significantly younger, 63 + 11 vs. 67 + 12 years (p = 0.009), but there were no differences in race (p = 0.29) or marital status (p = 0.38) between groups. At baseline, more patients in the SGY group reported pain than in the N-SGY group, 45.3% (105/233) vs. 28.3% (17/60), p = 0.018. At one year follow-up, however, less patients in the SGY group reported pain than in the N-SGY group 11.9% (21/177) vs. 23.9% (11/46), p = 0.038. In patients who reported pain, groups did not differ significantly in degree of bother (p = 0.570).

Three subgroup analyses of the SGY group were performed: 1) vaginal (n = 142) or abdominal (n = 75) approach, 2) mesh (n = 177) or no mesh (n=56) use during prolapse repair and 3) with (n = 68) or without (n = 165) concurrent hysterectomy at the time of prolapse repair. Self-reported pain and bother from pain were no different at baseline nor at 1 year post-surgery in all three sub-analyses.

Conclusion: Pain, associated bother, and younger age, may have influenced women to choose surgical management of prolapse. We found that prolapse surgery whether with an abdominal or vaginal approach, with or without mesh, or with or without concomitant hysterectomy significantly improved patient reported lower abdominal and genital pain at 1 year.

Funding: Ministrelli Program for Urology Research and Education (MPURE-Philanthropy)
Poster #NM133
PATIENT SATISFACTION AND QUALITY OF LIFE AFTER ROBOTIC SACROCOLPOPEXY FOR PELVIC ORGAN PROLAPSE.
Nimesh Patel, BSc¹, Kim Killinger, MSN², Kanika Thapar, BSc¹, Patrick Karabon, MS¹ and Pradeep Nagaraju, MD²
¹Oakland University William Beaumont School of Medicine, Auburn Hills, MI; ²William Beaumont Hospital, Royal Oak, MI
Presented By: Nimesh Patel, BSc (Hons)

Introduction: When evaluating repair outcomes for robotic sacrocolpopexy (RSC) for the treatment of pelvic organ prolapse (POP), it has become evident that surgeons have focused on anatomical improvements and neglected equally important parameters of patient satisfaction and quality of life (QoL). Investigating these factors would aid in achieving a more patient-centered approach to treatment. This study aims to investigate QoL and satisfaction outcomes in women after RSC.

Methods: This study analyzed self-reported patient data after RSC for POP performed between October 2009 to February 2017 by a single, female reconstructive fellowship trained urologist group. These patients received a survey to assess overall satisfaction and QoL, as well as contributing factors, such as changes in bladder and bowel function, vaginal bulge, and vaginal pain on a 7-point Likert scale (markedly worse to markedly improved). Positive treatment response was defined as scores of 6 or 7, whereas negative response was defined as scores 1 to 5. Data was examined using multivariate regression analysis.

Results: The response rate was 41% (156/380) with a median age of 69 years (IQR: 63, 73). 98.7% self-reported as Caucasian, with 73% currently in a significant relationship. The median duration of time since RSC was 2.12 years (IQR: 1.17, 3.92). Of the survey respondents a positive response was 88.5% (123/139), 66% (103/156), 61.7% (37/60), and 29% (37/155) for vaginal bulge, bladder function, vaginal pain, and bowel function, respectively. Furthermore, 70% (108/155) of women had improved QoL, 85% (132/156) reported improved overall satisfaction, and 92.3% (144/156) stated they would recommend RSC to a friend. After controlling for significant covariates, results of a multivariate analysis demonstrated positive treatment response for bladder function (OR: 5.57; P = 0.002), bowel function (OR: 9.70; P = 0.021), and vaginal bulge (OR: 68.0; P = 0.017) significantly associated with increased odds of having improved QoL, whereas vaginal bulge (OR: 26.9; P = 0.023) positive treatment response and recommending RSC to a friend (OR: 132; P = 0.017) is associated with positive overall satisfaction.

Conclusion: These results support the use of RSC surgery, specifically from patient QoL improvement and overall satisfaction perspective. This study may help surgeons utilize a surgical modality that incorporates the patient’s own treatment desires and help patients set realistic goals for treatment.
Poster #NM134
COMPARING TWO VOIDING TRIALS AFTER PELVIC ORGAN PROLAPSE RECONSTRUCTION: A RANDOMIZED CONTROLLED TRIAL
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Presented By: Marjorie Pilkinton, MD

Introduction: A standardized universal protocol to assess postoperative voiding dysfunction (VD) in women undergoing pelvic reconstructive surgery does not exist. The objective was to compare the safety and efficacy of urinary force of stream (FOS) method to a standard fill voiding trial (SVT) for the assessment of postoperative VD following inpatient pelvic organ prolapse (POP) surgery.

Methods: A non-inferiority randomized controlled trial was conducted in postoperative women comparing FOS or SVT inpatient voiding trials following vaginal or abdominal POP surgery. Prior to discharge, both groups were backfilled with 300cc normal saline. Successful voiding criteria in the FOS group was a subjective FOS 50 or greater using a visual analog scale. Reporting <50 prompted a bladder scan and successful voiding was defined by a PVR <500cc. For the SVT group, voiding 2/3 the instilled amount indicated success. Subjects completed the Urinary Distress Inventory (UDI-6) and the American Urological Association Symptom Score (AUASS) questionnaires at baseline, 2 and 6 weeks postoperatively. The primary endpoint was the rate of catheterization within 6 weeks in those patients discharged home without a catheter. Secondary endpoints included rates of voiding success, incidence of urinary tract infections (UTI), and questionnaire symptom scores postoperatively.

Results: 184 patients were enrolled with 174 patients randomized (FOS 86 and SVT 88). No differences were found between groups in terms of demographic, baseline, and perioperative characteristics except for rates of stage 2 apical prolapse in 52% (FOS) versus 36% (SVT) subjects (p<0.02). The number of patients discharged without a catheter who subsequently needed recatheterization for VD were similar (FOS, 2.8% [2/71], vs SVT, 3.1% [2/64], difference, -0.3%; 90%CI,-7.35% to 6.73%). The incidence of voiding trial failures at discharge were similar (FOS, 17.4% [15/86] vs SVT, 26.4% [23/87], RR, 0.65; 95% CI 0.37 to 1.18, p<0.2). No significant difference in the incidence of UTI was observed (FOS, 9% [8/86] vs SVT 7% [6/87], p<0.59). UDI-6 and AUA-SS scores improved postoperatively for both groups (p<0.01) with no difference in patterns of improvement.

Conclusion: In patients requiring catheter reinsertions for VD after POP surgery, the FOS method was not inferior to SVT. The FOS method is a safe and equally effective alternative to SVT in identifying inpatient postoperative VD with fewer patients discharged with a catheter.
Poster #NM135
ROBOTIC SACROCOLPOPEXY: ADVERSE EVENTS REPORTED TO THE FDA OVER THE LAST DECADE
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Presented By: Colby Perkins Souders, MD

Introduction: As urologists annually increase their robotic surgical volume and they become more experienced, there should be a subsequent decrease in the number of adverse events. Further, as Intuitive Surgical modifies and improves their technology, adverse events should also decrease. We aim to assess trends in adverse event reporting for robotic sacrocolpopexies over the past decade.

Methods: We performed a search of the FDA Manufacturer and User Facility Device Experience (MAUDE) database. All entries with the manufacturer “Intuitive Surgical” were exported from the years 2007 to 2017. All entries with “sacrocolpopexy” were then isolated and analyzed. The event type was reclassified based on event text if appropriate. Duplicate entries were removed.

Results: There were a total of 334 reported adverse events from 2008 to 2017 to date. 5 (1.50%) were categorized as death; 33 (9.88%) categorized as injury, and 296 (88.62%) were categorized as malfunction (Table 1). There was no evidence of system or mechanical malfunction in the 5 reported deaths. Of these 33 reported injuries, only 3 (9.09%) were explained by instrument or system malfunction and 2 of these 3 could have been prevented with better maintenance and software understanding. An analysis of the malfunction reports found that 15/296 (5.07%) were converted to open surgery, 4/296 (1.3%) were converted to laparoscopic surgery, 4/296 (1.3%) cases were aborted, and finally, 6/296 (2.03%) malfunctions resulted in patient injury. The number of adverse events reported for robotic sacrocolpopexies peaked in 2013 and 2014, at 107 and 124, respectively. In 2015 and 2016, the number dropped to 11 and 7, respectively.

Conclusion: The number of adverse events reported for robotic sacrocolpopexies peaked in 2013 and 2014, and has decreased annually since. This could be due to improved proficiency of the surgeon and staff in working with the surgical robot, as well as improvements in the hardware and software of the robot. When malfunctions do occur, they rarely cause injury or impact the surgical approach. Preventing bowel injuries and mechanical failures with needle drivers should be an area of focus for training efforts.
**Poster #NM136**

**RATES OF CONCURRENT ADNEXAL SURGERY AT THE TIME OF VAGINAL HYSTERECTOMY**

Dominique Malacarne, MD, Nancy Ringel, MD and Kimberly Ferrante, MD  
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Presented By: Nancy Ringel, MD

**Introduction:** The American College of Obstetricians and Gynecologists (ACOG) recommends removal of the fallopian tubes at the time of benign hysterectomy to prevent epithelial ovarian cancer. Surgeons performing hysterectomy as part of prolapse repair should therefore be performing prophylactic salpingectomies as part of their routine practice. Many of these providers are urology-trained and may not be aware of this benefit, as the American Urologic Association (AUA) does not have similar guidelines. Our aim was to determine if gynecology-trained surgeons more often remove the adnexa at the time of hysterectomy than urology-trained surgeons.

**Methods:** The American College of Surgeons’ National Surgical Quality Improvement Program (NSQIP) database from 2010 to 2015 was analyzed. Patients who underwent benign vaginal hysterectomy with colpopexy were identified using CPT codes, and concurrent removal of the adnexa was determined based on CPT coding analysis. Cases were stratified based on surgeon specialty (urology or gynecology), and rates of adnexa removal were evaluated over time. Fisher’s exact and Chi squared tests were used where appropriate.

**Results:** 4818 cases with vaginal hysterectomy and colpopexy were identified from 2010-2015. 4776 (99%) of these procedures were performed by gynecologists. Of those performed, 1713 (36%) of total procedures included coding for adnexa removal. There was no difference in total rates of adnexa removal between gynecologists and urologists (36% vs 29%, p = 0.4). The percentage of concurrent adnexal surgery at the time of vaginal hysterectomy with colpopexy increased over time amongst gynecologists (p<0.001) but did not increase for urologists (p<0.8).

**Conclusion:** Both gynecology and urology-trained providers perform adnexal surgery at the time of vaginal hysterectomy infrequently, though gynecologists demonstrated a significant increase in rates over time. Measures should be taken to educate providers on importance of prophylactic salpingectomy at the time of hysterectomy when feasible. Further study is needed to determine the causes of low rates of adnexal surgery at the time of hysterectomy for prolapse repair.
 Poster #NM137  
A NEW CLINICAL DIAGNOSTIC TEST DEMONSTRATING UPSTAGING AND CHANGES IN ANATOMY IN PELVIC ORGAN PROLAPSE; DEFECTS DEMONSTRATED THROUGH 3D PELVIC RECONSTRUCTION AND CHANGES IN PELVIC REFERENCE LINES USING STANDING OPEN MRI  
Jennifer Locke, MD, PhD, Alex Kavanagh, MD, MSc, Andrew MacNab, MD and Lynn Stothers, MD  
Vancouver, BC  
Presented By: Jennifer A. Locke, MD, PhD  

Introduction: Pelvic organ prolapse (POP) is a prevalent condition affecting up to 50% of parous women. Despite this, our knowledge about the etiology and pathophysiology of POP is limited, as evaluation is based on physical examination using international guidelines. The levator ani muscle plays a significant role in pelvic organ support. Evaluation of the integrity of this element of the pelvic structures is particularly difficult, and clinical examination alone is insufficient. Imaging is recommended, and standard MRI systems study women in the lying position. Supine is also comfortable for most patients. However, the position and posture of a patient are relevant and may play a significant role in staging of POP and the interplay of the structures of the pelvic floor. Upright open MRI (MRO) systems provide information currently not available in the standard approach of supine MRI imaging and allow imaging of the patients in different positions: standing, sitting, and supine. The aim is to describe a new imaging modality to develop 3D models using MRO to identify the morphologic changes in POP.  

Methods: 1. A cohort of subjects with POP was recruited for MRO imaging.  
2. Open MRI of the pelvis was performed using a 0.5 T scanner.  
3. Patients completed a screening assessment tool to ensure there were no contraindications for MRI.  
4. The 3D analysis software (Analyze 12.0) was used.  
5. A 3D model of the pelvis was created by the transformation of 2D MRI data extracted from thin-section images.  
6. Each anatomic structure of the pelvis was individually outlined; all are presented in the 3D construction.  

Results: In the standing position, there was a higher incidence of cystocele as mild, moderate, and severe (50%, 40%, and 10% of patients, respectively). In the supine position, severe cystocele was absent, with mild and moderate in 90% and 10% of patients, respectively.  

Conclusion: The new advanced imaging technique can provide details of the female pelvic anatomy. It provides new levels of information for enhanced POP staging, and it can add to the accuracy of clinical staging of POP.  

Figure 1: A) Example of individual segmentations of structures. B) A sample of 3D reconstructed model, obturator internus (green, sacrum; torques, ilium; yellow, pubic bone; blue, coccyx; pink and coccygeus muscle; brown).
Poster #NM138

TITLE: TRENDS IN PELVIC ORGAN PROLAPSE REPAIR: DIFFERENCES IN PELVIC ORGAN PROLAPSE REPAIR APPROACH BY SPECIALTY BEFORE AND AFTER THE FDA MESH WARNING

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Presented By: Christina Escobar, MD

Introduction: While FPMRS surgeons are made up of both urologists and gynecologists, there may be variation in surgical training. There is a paucity of data examining variations in approach to surgical correction of prolapse. This study aims to compare differences in approach to pelvic organ prolapse repair by specialty. We also compare how the approach to pelvic organ prolapse repair has changed over time, given the 2011 FDA mesh warning.

Methods: Abdominal and vaginal colpopexies between 2010 and 2015 were extracted from the American College of Surgeons National Surgical Quality Improvement Program (ASC NSQIP) database using CPT-4 codes. Patients were stratified by surgeon type and were compared for differences in baseline characteristics and surgical approach. Statistical analysis was performed using chi-squared test and student t-test where applicable.

Results: Of 12,901 cases identified, 778 cases (6%) were performed by urologists and 12,122 (94%) were performed by gynecologists. Baseline characteristics were similar between the two groups with the exceptions that urologists operated on older patients (66.9 ±10.6 versus 60.1 ±12.6) (p<0.01) with a higher co-morbidity composite (1.0 versus 0.78) (p=0.003) when compared to gynecologists. Gynecologists chose a vaginal approach in 10,332 cases (85%), while urologists chose a vaginal approach in 628 cases (81%) (P<0.001). Gynecologists were more likely to perform hysterectomy at time of prolapse repair (6327, 51%) compared to urologists (60, 7%) (p <0.001). Urologists were more likely to use vaginal mesh for prolapse repair (290, 27% versus 1504, 13%) (p<0.001). For both urologists and gynecologists, the use of vaginal mesh trended downward each year (p <0.001). For gynecologists, the percent of abdominal colpopexies, which were presumably mostly sacrocolpopexies using mesh, trended downward each year (p<0.001).

Conclusion: These findings demonstrate that gynecologists perform the majority of pelvic organ prolapse repairs and are more likely to perform hysterectomy at time of repair. However, while the use of vaginal mesh has decreased for both specialties since the FDA mesh warning in 2011, urologists are more likely than gynecologists to use mesh, both vaginal and intra-abdominal. It is possible that these differences in practice stem from differences in training, however further investigation is needed.
Poster #NM139
USE OF AUTOLOGOUS VASTUS LATERALIS FASCIA FOR REPAIR OF RECURRENT CYSTOCELE
Andrew Medendorp, MD, Lauren Wood, MD, Victoria Scott, MD, My-Linh Nguyen, MD, Zachary Baxter, MD, Shlomo Raz, MD and Ja-Hong Kim, MD
University of California, Los Angeles
Presented By: Andrew R. Medendorp, MD

Introduction: The anterior vaginal wall is a common site for symptomatic pelvic organ prolapse. In spite of multiple surgical techniques for cystocele repair there is a high rate of recurrence. We describe a novel surgical technique for repair of recurrent symptomatic cystocele using autologous vastus lateralis fascia and review outcomes of patients undergoing this procedure at our institution.

Methods: Patients undergoing symptomatic recurrent cystocele repair with autologous vastus lateralis fascia at our institution from April 2015 to November 2016 were identified. All patients underwent harvest of a segment of fascia approximately 6cm x 4cm in size that was then used to support the central and lateral areas of the anterior vaginal wall. The electronic medical record was retrospectively reviewed to identify patient demographics, perioperative characteristics, complications within six weeks, and short term surgical outcomes. Preoperative cystocele grade was determined using the Baden-Walker system. Complications were graded using the Clavien-Dindo system and those with a grade ≥ 3 were classified as major complications.

Results: Forty patients were identified. Median patient age was 63 years (range 38-83 years). Median preoperative cystocele grade was 3 (range 1-4). The median number of prior pelvic reconstructive procedures was 4 (range 2-7). Twenty seven patients underwent concomitant pelvic reconstructive procedures at the time of fascia cystocele repair. Median operative time was 123 minutes (range 57-185 minutes). Median estimated blood loss was 100ml (range 50-300ml). Median length of stay was 1 day (range 1-6 days). The rate of minor complications within six weeks was 33%, the most common being transient elevated post-void residual requiring temporary use of clean intermittent catheterization. There was one major complication in a patient found to have left ureteral obstruction requiring subsequent reimplantation surgery. Median length of follow up was 270 days (range 5-788 days). 73% of patients reported no subsequent urinary symptoms. Three patients had subsequent symptomatic cystocele recurrence and underwent additional surgery for anterior vaginal wall prolapse.

Conclusion: Autologous vastus lateralis fascia use for repair of recurrent cystocele can be accomplished with reasonable safety and short term efficacy. Longer term follow up is needed to better assess anatomic durability and functional outcomes.
Poster #NM140
ROLE OF HYSTERECTOMY AT THE TIME OF NATIVE PELVIC ORGAN PROLAPSE (POP) REPAIR
Bilal Chughtai, MD, Dominique Thomas, BS, Jialin Mao, MD, MSc, Tirsi T Asfaw, MD and Art Sedrakyan, MD, PhD
Weill Cornell Medicine, New York, NY
Presented By: Dominique D. M. Thomas, BS

Introduction: Conventional wisdom is that preserving the uterus may increase the risk of recurrent prolapse due to an inability to adequately support the pelvic floor; hence, hysterectomy is often performed at the time of pelvic organ prolapse (POP) surgery. We sought to evaluate contemporary practices of uterine-preservation versus concomitant hysterectomy at the time of POP repair to determine the related outcomes.

Methods: This was an observational cohort study of inpatient and ambulatory surgery settings in New York State. Women younger than 55 without prior hysterectomies who underwent POP repair between 2009 and 2014. All POP repairs included apical support in an effort to equate grade of prolapse. Patients who underwent concomitant hysterectomy at the time of POP surgery were compared to those who had uterine-preserving surgery. 90-day safety events and re-intervention, urinary retention and pelvic pain within one year and three years following initial procedure were determined.

Results: There were 1564 (71.3%) patients who underwent concurrent hysterectomy at the time of POP surgery, while 629 (28.7%) had uterine-preserving surgery. No differences were found in re-interventions and pelvic pain within one year or three years after POP repair. Over the study period, we observed increased utilization of concurrent hysterectomy of 46.4% in the most recent study year (P=0.02). Patients who undergoing hysterectomy at the time of POP surgery were more likely to have the procedure performed in an inpatient setting than patients receiving uterine-preserving surgery (80.2% vs 41.2%). After propensity score matching, patients in the concurrent hysterectomy group had more surgical complications and more expensive charges (median charges: $15,013 vs $13,251).

Conclusion: To our knowledge this is the first major population cohort study addressing the comparative effectiveness of hysterectomy versus uterine-preservation in POP surgery. Concurrent hysterectomy was more expensive and had more surgical complications within 90 days of initial procedure when compared to uterine-preserving approach. Long-term outcomes were not compromised and did not lead to earlier reintervention when preserving the uterus.
Poster #NM141
IS VAGINAL VAULT PROLAPSE RECURRENCE AFFECTED BY USING ABSORBABLE SUTURE FOR SACRAL MESH ATTACHMENT DURING ROBOTIC ASSISTED SACROCOLPOPEXY?
Juan M. Guzman-Negron, MD1, Shree Agrawal, BS2, Jessica C. Lloyd, MD1, Patricia M. Zahner, MD1, Laura L. Giusto, MD1 and Howard B. Goldman, MD1
1Cleveland Clinic, Cleveland, Ohio; 2Case Western Reserve University School of Medicine, Cleveland, Ohio
Presented By: Juan Guzman-Negron, MD

Introduction: Literature regarding use of absorbable sutures for sacral mesh attachment during robotic assisted sacrocolpopexy (RASC) is sparse mainly due to concern for risk of mesh detachment from the sacrum. We assessed patient outcomes after RASC using absorbable sutures for sacral mesh attachment and whether the use of delayed absorbable sutures for sacral mesh attachment affects rates of vaginal vault prolapse recurrence.

Methods: We retrospectively reviewed the charts of 38 women who underwent RASC between August 2014 and December 2016. All cases were performed by a single surgeon using delayed absorbable suture for both sacral and vaginal mesh attachment. A minimum of 7 month postoperative follow up was required to be included in the analysis. Office visit or telephone call were used for postoperative follow up. Vaginal vault prolapse recurrence was defined as a postoperative C score ≥-4. Recurrent vaginal bulging symptoms, repeat prolapse surgery and pessary use for recurrent prolapse were surveyed during follow up. Anterior and posterior wall prolapse recurrence were also assessed and defined as Ba and Bp points ≥0. Descriptive statistics were calculated.

Results: In our series, the median age was 66 years and mean body mass index (BMI) was 27 kg/m2. Median postoperative follow up was 10 months. Fifty-eight percent (22/38) of patients had an office visit as their follow up. Median preoperative C score was 0 (IQR -2 - +1) and median postop C score was -9 (IQR -10 - -8). Two patients (5%) had vaginal vault prolapse recurrence and their postop C score was -3 and -4 each. Four patients had anterior prolapse recurrence and 5 had posterior prolapse recurrence. Median time to vaginal vault prolapse recurrence was 13 months and median time for recurrence of prolapse in any compartment was 15.5 months. One patient underwent repeat prolapse surgery with intraoperative findings consistent with sacral mesh detachment. Among the 8 patients found with objective prolapse recurrence, only 4 had recurrent vaginal bulge symptoms (11%). None of the patients were using pessaries for recurrent prolapse. There were no significant associations of prolapse recurrence with age, BMI, parity, diabetes, prior hysterectomy and smoking.

Conclusion: With a median follow up of 10 months, the use of absorbable sutures for sacral mesh attachment appears to be effective. Vaginal vault prolapse recurrence rates were within the acceptable range after RASC.
Poster #NM142

INFLUENCE OF OBSERVATION, SURGICAL APPROACH, AND CONCURRENT HYSTERECTOMY ON PROLAPSE AND URINARY SYMPTOMS

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Beaumont Health, Royal Oak, MI
Presented By: Esther Han, DO

Introduction: To evaluate the effect surgery has on Urinary Distress Inventory (UDI) and Pelvic Organ Prolapse Distress Inventory (POPDI) scores for women with pelvic organ prolapse (POP).

Methods: Adult women enrolled in a prospective POP database between 2008 and 2014 were reviewed. Baseline data and outcomes data one year after surgery were collected including the POPDI and the UDI. Patients were grouped by having surgery (SGY) in the first year or no surgery (N-SGY) and compared. Sub-analyses of the SGY group were then performed by surgical approach (vaginal (Va) or abdominal (Ab)), concurrent hysterectomy (HYS), and placement of mesh. Data were analyzed with descriptive statistics, Chi-square tests, Fisher’s exact tests, paired t-tests, and Wilcoxon rank sum tests.

Results: There were 233 SGY and 60 N-SGY of 293 prolapse patients. The SGY group was significantly younger, 63 + 11 vs. 67 + 12 years (p = 0.009), but there were no differences in race (p = 0.29) or marital status (p = 0.38) between groups.

SGY had significantly higher baseline (BL) POPDI and UDI than the N-SGY group. At 1 year (1y), however, SGY had significantly lower POPDI and UDI scores than N-SGY. Within group comparison showed that the SGY group at 1y had significantly lower POPDI and UDI scores not observed in the N-SGY group. (Table)

When comparing the vaginal vs. abdominal approach and with or without concurrent hysterectomy (HYS and N-HYS) there were no differences in BL nor 1y scores for either POPDI or UDI (table). For mesh vs no mesh, BL POPDI was significantly higher in the SGY group but there was no difference at 1 year. UDI for mesh vs no mesh was not significantly different for BL or 1y. Within group comparisons revealed significantly lower POPDI and UDI scores in all three subgroup analyses. (Table)

Conclusion: Overall, surgery significantly improved prolapse and urinary symptoms for patients with POP, but importantly, there were no significant differences with the surgical approach (abdominal vs. vaginal), the use of mesh vs no mesh nor with or without a concurrent hysterectomy.

Funding: Ministrelli Program for Urology Research and Education

<table>
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<th>Ab (n)</th>
<th>Va (n)</th>
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Table. All values are medians. POPDI and UDI scores at baseline (BL) and 1 year (1y) for surgery (SGY) vs no surgery (N-SGY), abdominal (Ab) vs vaginal (Va), with (HYS) or without (N-HYS) concurrent hysterectomy, and mesh vs no mesh.
Poster #NM143  
RELATIONSHIP BETWEEN PELVIC ORGAN PROLAPSE AND METABOLIC SYNDROME  
Solafa Elshatanoufy, PharmD, MD, Humphrey Atiemo, MD, David Richardson, MD and Ali Luck, MD  
Henry Ford Health Systems, Detroit, Michigan  
Presented By: Solafa Elshatanoufy, PharmD, MD

Introduction: The prevalence of pelvic organ prolapse (POP) has been increasing with the increase in the proportion of elderly patients. Metabolic Syndrome (MS) is a constellation of signs that are associated with insulin resistance and increased risk of cardiovascular disease. It also increases in prevalence with increasing age. In this study we sought to find if an association exists between MS and POP in the U.S population.

Methods: Patients were recruited from our urogynecology and female urology clinics. All the patients were referred to our clinics with various pelvic floor complaints. After written informed consent, a waist circumference was measured and recorded. The remaining MS criteria were collected from the chart including, blood pressure, fasting blood glucose; if not available glycated Hemoglobin; triglycerides, and high density lipoprotein. Other variables collected include age, gravity, parity, number of vaginal deliveries, body mass index, and history of previous pelvic organ prolapse surgery. A pelvic organ prolapse quantification was performed as part of our routine examination.

Results: A total of 142 patients were recruited. 138 were included in our analysis. The average age was 69 (±10.6). Metabolic Syndrome was not significantly associated with POP (OR: 0.827, 95% CI 0.421-1.625). None of the MS sub-categories were significantly associated with POP after controlling for other confounders such as age and number of vaginal deliveries. Age was significantly associated with POP (p=0.009). Body mass index, gravity, parity or number of vaginal deliveries were not independently associated with POP.

Conclusion: MS was not associated with POP. Only age was significantly associated with the development of pelvic organ prolapse.
Poster #NM144  
ANTERIOR ENTEROCELE ON MR DEFECOGRAPHY AS AN ETIOLOGY FOR ANTERIOR VAGINAL BULGE
Muhammad Aziz, Gaurav Khatri, MD, Deborah Hess, MD and Philippe Zimmer, MD  
UT Southwestern Medical Center  
Presented By: Muhammad Aziz

**Introduction:** Enteroceles typically occur in the rectovaginal space due to apical or posterior compartment weakness. Clinically, these typically present as posterior vaginal wall bulges and are difficult to differentiate from rectoceles on physical examination. The purpose of this exhibit is to describe anterior rather than the more common posterior enterocele as an etiology for anterior vaginal wall bulge, and to demonstrate the utility of MR Defecography (MRD) in diagnosis of anterior enterocele.

**Methods:** The institutional radiology report database was reviewed for patients with anterior enterocele on MRD. MRD was performed with patient supine in a 1.5T conventional magnet after instillation of 120cc of gel in the rectum. Images were obtained at rest, during kegel (squeeze), and active defecation. Imaging and clinical findings of patients with anterior enterocele were reviewed.

**Results:** 6 patients with anterior enterocele were identified. Pelvic organ prolapse quantification (POP-Q) score was assessed on 5 of these patients. All 5 patients had stage 2 prolapse. 3 of 5 patients were sexually active. 3 patients were multiparous while 2 were primiparous. Ages ranged from 58 - 81 years. 3 patients had prior total abdominal hysterectomy with bilateral salpingo-oophorectomy. 1 patient had prior cystectomy due to benign causes. On MRD, average length of H line was 7.5 cm. Average length of M line was 5.4 cm. 4 patients had cystoceles, all patients had grade 2-3 rectal prolapse, all patients had anterior enteroceles (3 with grade 1, 1 with grade 2; and 1 with grade 3), and all patients had grade 1 vaginal prolapse.

**Conclusion:** Anterior enterocele can present as an occult cause of anterior vaginal wall bulge. Prior cystectomy may be a risk factor for anterior enterocele; however, this entity may occur in patients without cystectomy and may be clinically occult. MRD plays an essential role in the characterization of this entity and differentiation from other forms of prolapse in order to optimize patient management.


Financial Funding: none
Poster #NM145
PELVIC ORGAN PROLAPSE REPAIR AFTER RADICAL CYSTECTOMY
Andrew Medendorp, MD and Christopher Tarnay, MD
University of California, Los Angeles
Presented By: Andrew R. Medendorp, MD

Introduction: Radical cystectomy with urinary diversion is widely considered to be standard of care treatment for muscle-invasive and recurrent high grade localized cancer of the bladder. An estimated that over 18,000 new diagnoses of bladder cancer in females will be made in 2017, many of these patients will go on to have extirpative surgery and cancer survivorship will become a key issue for these women. Since radical cystectomy in the female typically involves removal of the urethra and anterior vaginal wall, there are resultant anatomic changes that can predispose these patients to unique issues with regard to prolapse. While uncommon, dehiscence of the vaginal wall with prolapse or herniation of the peritoneal cavity is a late complication that can carry significant quality of life impact. We describe our experience with three patients treated for prolapse after radical cystectomy and ileal conduit urinary diversion and provide a review of the available literature on this topic.

Methods: Retrospective chart review was performed for each patient to identify patient demographics, perioperative characteristics, surgical management, and postoperative outcomes.

Results: All patients underwent urinary diversion with ileal conduit at the time of radical cystectomy. Two patients had undergone previous attempts at surgical treatment for prolapse prior to presenting to our institution, the third presented with evisceration through the vagina prompting emergent surgical intervention. All three patients underwent reconstruction at our institution involving reapproximation of the posterior vaginal wall to the posterior aspect of the pubic bone. As of most recent follow up all three had durable results with no recurrence of prolapse.

Conclusion: Prolapse after radical cystectomy and urethrectomy with ileal conduit presents an unusual and unique set of challenges. The absence of the usual fascial support structures can lead to decreased success of standard native tissue repairs, our technique may provide a durable option for prolapse repair in these women.
Abstract #NM146

ABDOMINAL MESH SACROCOLPOPEXY WITHOUT PROMONTORY FIXATION- THE PERITONEOCOLPOPEXY TECHNIQUE

Philippe Zimmern, MD
UT Southwestern Medical Center
Presented By: Philippe E. Zimmern, MD, FACS, FPMRS

Introduction: The anchoring of mesh during abdominal sacrocolpopexy (SCP) for apical prolapse can lead to devastating complications including massive hemorrhage and infective complications of osteomyelitis and discitis. We present our experience with a new technique for mesh anchorage during open sacrocolpopexy, termed peritoneocolpopexy.

Methods: Prospective patient study from an IRB approved sacrocolpopexy database that underwent a mesh peritoneocolpopexy (PCP) was analyzed. Data analyzed included complications, validated questionnaires, POP-Q examination and associated outcomes. Longer term outcome of the initial series reported in the Journal of Urology 193:2089, 2015 are reported.

Surgical technique:
Two 2-0 chromic catgut stay sutures are placed at the vaginal apex on each side of the midline and are left on stay clamps to be used later to assess the solidity of the apical repair. Following placement and fixation of a Marlex® mesh anteriorly and posteriorly to the vaginal apex, the tail of the mesh is positioned in a peritoneal groove extending towards the promontory. The mesh is secured to surrounding tissues (peritoneum and fat underneath) with 2 running 2-0 V-Loc® 180 sutures placed on either side of the mesh tail well below the promontory. This barbed suture keeps unidirectional tension, which will allow time for fibrous tissue in-growth to secure the mesh durably in place. At that point, strong traction on the pre-placed vaginal apex sutures is exerted to confirm the immobility of the vaginal apex. Following a negative cystoscopy, the peritoneum is closed over the mesh attached to the vaginal apex with several running 2-0 Vicryl sutures.

Results: Mean age and BMI were 60.5 years (28-82) and 27.8 (22.9-33.7). The median follow-up was 34 months (6-60) respectively. Mean preoperative C-point was -4.0 (+1 to -4) compared to -9 (-12 to -10) postoperatively (p < 0.003). Functional outcome improvement was found statistically significant for total UDI-6 score from 6 to 3.5 (p = 0.04), with improvement in QoL: 4.1 to 2.4 (p < 0.027) and IIQ-7: 6 to 3 (p = 0.3), respectively.

Conclusion: PCP performed reliably to correct symptomatic POP. The use of strong unidirectional and delayed absorbable sutures to secure the mesh to the peritoneum and surrounding fat around the vaginal apex resulted in satisfactory anatomic outcomes for apical support, with solid permanent integration of the mesh.
**Poster #NM147**

**AUTOLOGOUS RECTUS FASCIA PELVIC ORGAN PROLAPSE REPAIR: A MESH FREE SOLUTION FOR POP?**

Jai Seth, Bogdan Toia, Hazel Ecclestone, Mahreen Pakzad, Rizwan Hamid, Tamsin Greenwell and Jeremy Ockrim

Presented By: Jai Seth, FRCS

**Introduction:** 40% of women suffer pelvic organ prolapse (POP) in a lifetime. The current standard intervention for vault prolapse is a mesh colposacropexy or hysteropexy. However, patients and surgeons are increasingly hesitant of the use of mesh given recent UK and FDA warnings and litigation. A possible alternative is to use autologous tissue vault support as a mesh free solution. We report a series of four patients undergoing autologous POP repair (APOP) using rectus fascia.

**Methods:** 4 patients with a mean age of 53 (38-68) years underwent APOP between 2014-2016. All had previous urological/gynecological surgery and declined standard mesh repairs. All had pre-op videourodynamic and defecating MRI evaluation. Mean follow-up is 18 (11-28) months. The APOP was performed using 10-18 cm of rectus sheath with similar technique to that employing mesh to support the anterior-posterior vaginal walls or encircle the cervix and secured to the sacral promontory.

**Results:** Results are summarized in Figure 1. All patients have durable result at last follow up.

**Conclusion:** This is the first description in Europe of APOP. This series demonstrates feasibility of this technique with successful medium-term outcomes. APOP avoids the 10-15% risks of mesh-related complications. APOP has the potential of a cost-effective and safe alternative for women who wish to avoid mesh. Further studies of long-term durability are needed.

<table>
<thead>
<tr>
<th>Case</th>
<th>Clinical history</th>
<th>VCMG and MRI findings</th>
<th>Surgery performed</th>
<th>Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Colposuspension; anterior-posterior repair x2; TAH &amp; BSO; failed suture sacrocolpopexy Mixed pattern incontinence Grade IV vault prolapse Dyspareunia</td>
<td>DO Type IIH SUI MRI 4.5 cm vault descent from pubococcygeal line</td>
<td>Autologous-sacrocolpopexy &amp; colposuspension Abdominoplasty</td>
<td>No POP recurrence DO and SUI resolved Dyspareunia resolved</td>
</tr>
<tr>
<td>2</td>
<td>Colposuspension Sensory urgency Grade III cervical prolapse</td>
<td>Stable bladder No SUI MRI 5 cm vault descent from pubococcygeal line</td>
<td>Autologous-sacrocolpopexy</td>
<td>No POP recurrence Sensory urgency persist</td>
</tr>
<tr>
<td>3</td>
<td>TVT excision for BOO Mixed pattern incontinence Grade III cervix prolapse</td>
<td>DO with leak Type IIH SUI MRI 3 cm vault descent from pubococcygeal line</td>
<td>Autologous-sacrocolpopexy &amp; colposuspension Abdominoplasty</td>
<td>No POP recurrence 1 security pad/day Urgency resolved</td>
</tr>
<tr>
<td>4</td>
<td>TAH &amp; BSO with ureter injury; Boan flap x 2; nephrectomy; sacral nerve stimulator Stress incontinence Grade IV vault prolapse</td>
<td>Type IIH SUI Acontractile MRI 6 cm vault descent from pubococcygeal line</td>
<td>Autologous-sacrocolpopexy Take down Boan, excision remaining ureter</td>
<td>No POP recurrence SUI cured CIBC dependent</td>
</tr>
</tbody>
</table>
Impact of Adjuvant Radiation on Artificial Urinary Sphincter Durability in Post-Prostatectomy Patients

Arnav Srivastava, BA, MPH, Gregory Joice, MD, Hiten Patel, MD, MPH, Madeleine Manka, MD, Nikolai Sopko, MD, PhD and Edward Wright, MD
Johns Hopkins Hospital, Baltimore, MD
Presented By: Arnav Srivastava, BA, MPH

Introduction: Artificial urinary sphincter (AUS) placement is the gold standard treatment for post-prostatectomy stress urinary incontinence. Approximately 12% of patients may receive adjuvant radiotherapy after radical prostatectomy. Current literature is heterogeneous regarding AUS efficacy of post-prostatectomy patients who receive adjuvant radiation relative to surgery-only patients. To further understand the prognostic implications of adjuvant radiation, we measured relative AUS outcomes in prostatectomy patients receiving adjuvant radiation.

Methods: 158 post-prostatectomy patients, identified by retrospective chart review, underwent AUS placement by one surgeon from 2008 – 2016. Time-to-event analysis measured the effect of adjuvant radiation on all-cause failure and competing risks regression stratified failure by cause (infection/erosion, urethral atrophy, mechanical failure).

Results: Adjuvant radiation independently predicted all-cause failure over time (Multivariable HR = 4.32, p<0.01) When stratifying failure by cause, we find that adjuvant radiation patients have increased risk of infection/erosion complications (Multivariable HR = 4.48, p=0.03). However, there was no statistical increase in urethral atrophy (Multivariable HR = 1.48, p =0.49) or mechanical failure (Multivariable HR = 2.12, p = 0.09). Lastly, among patients who have urethral comorbidities (bladder neck contracture, prior urethral sling, or urethral stricture), those with radiation history have particularly poor outcomes (22.4% revision-free survival at 3 years).

Conclusion: In our series of post-prostatectomy patients, adjuvant radiation portends worse AUS device survival over time. Furthermore, this decrease in revision-free survival appears to be concentrated in an increase in infection/erosion complications. Patients with prior urethral injury or manipulation who have also undergone adjuvant radiation should be carefully selected when receiving an AUS as this subset of patients experiences low device survival.

Figure 1: All-Cause AUS Device Survival of by Adjuvant Radiation History

<table>
<thead>
<tr>
<th>Follow-up (years)</th>
<th>No Prior Radiation</th>
<th>+ Radiation History</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>90</td>
<td>33</td>
</tr>
<tr>
<td>1</td>
<td>78</td>
<td>23</td>
</tr>
<tr>
<td>2</td>
<td>61</td>
<td>12</td>
</tr>
<tr>
<td>3</td>
<td>51</td>
<td>11</td>
</tr>
<tr>
<td>4</td>
<td>40</td>
<td>11</td>
</tr>
<tr>
<td>5</td>
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</table>

log rank: p<0.01
Poster #NM149

ROBOTIC-ASSISTED LAPAROSCOPIC SURGERY FOR ICS/IUGA CATEGORY 4 COMPLICATIONS OF GENITOURINARY PROSTHESIS AND GRAFT: A SINGLE-CENTER EXPERIENCE

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University of Colorado, Aurora, Colorado
Presented By: Jason Warncke, MD

Introduction: We present our management of International Continence Society (ICS)/International Urogynecological Association (IUGA) category 4 genitourinary prosthesis complications (lower urinary tract graft perforation) with robotic-assisted laparoscopic (RAL) surgery at a single, tertiary referral center. The objective of this study is to assess the technical feasibility and effectiveness of RAL surgery for the management of lower urinary tract mesh and prosthesis perforation.

Methods: We retrospectively reviewed the records of 450 patients with ICS/IUGA category 1-4 complications after stress urinary incontinence and/or pelvic organ prolapse surgery. Of these patients, 97 had ICS/IUGA category 4 complications. 22 patients underwent total graft excision using a RAL surgical approach (with or without a combined transvaginal approach) and are the focus of this study. Patient characteristics and outcomes are reported. The primary endpoint was resolution of the graft complication in a single operation.

Results: RAL surgery was utilized for treatment of 22 females with ICS/IUGA category 4 complications with a mean follow-up of 10.8 months (range 1-37). The ICS/IUGA category 4 complications included: 10 patients (45.5%) with bladder perforation (2 with concomitant vesicovaginal fistula [VVF]), 10 patients (45.5%) with urethral perforation (1 with concomitant VVF, 1 with ureteral stricture), and 2 patients with both bladder and urethral perforation (9.1%). IUGA category 4 complications were due to mesh in 19 patients (86.4%), artificial urinary sphincter components in 2 (9.1%) and prolene suture in 1 (4.5%). Mean patient age was 54.7 years and mean BMI 29.4. A pure RAL approach was used to manage the complication in 7 cases (31.8%), while the remaining 15 cases (68.2%) required a combined RAL and transvaginal approach. No cases were converted to an open abdominal procedure. The mean post-operative hospital stay was 2.1 days. Resolution of the graft complication in a single operation was successful in 22/22 patients (100.0%). Post-operative complications occurred in 3 patients (13.6%), 2 Clavien-Dindo grade IIIa and 1 IIIb. Subsequent surgery for SUI or POP was required in 9 patients (40.9%).

Conclusion: RAL surgery is safe and effective in complete removal of the GU prosthesis in patients with ICS/IUGA category 4 complications. The majority of cases required a combined RAL and transvaginal approach, and subsequent surgery to treat SUI and/or POP is not uncommon.
Poster #NM150
OUTCOMES OF RECONSTRUCTIVE UROLOGICAL SURGERY IN RADIOTHERAPY PATIENTS
Bogdan Toia, Jai Seth, Hazel Ecclestone, Mahreen Pakzad, Rizwan Hamid, Tamsin Greenwell and Jeremy Ockrim
UCLH
Presented By: Bogdan Toia

Introduction: Pelvic radiotherapy for urogynaecological and colonic malignancies has chronic effects on the urinary tract. Radiation induced damage causes tissue fibrosis leading to urinary tract dysfunction. Tissue ischaemia poses a management challenge for reconstructive surgeons, with poor viability of urological and bowel systems. We examined the urological sequelaes of radiotherapy, types of reconstructive urological surgery (RUS) required, and functional outcomes

Methods: A retrospective review was performed of all radiotherapy patients who underwent RUS, at a national referral centre between 2015-2017. Details including time from radiotherapy, pre-operative assessments, type of surgery performed and functional outcome were analysed

Results: 27 patients were identified (3 men; 24 women, age 59 (27-83) yrs). The primary malignancy was cervical (19), rectal (5), urethral (1), vaginal (1) and pelvic sarcoma (1). Mean time between radiation and primary RUS was 8 years. All patients had videourodynamics, CT urography and MR bowel protocol to assess suitability for reconstruction. Primary dysfunction and RUS performed is shown on Table 1. 8/13 ureteric strictures were bilateral. Of the fistulae, 3 were vesicovaginal, one was neobladder to vagina. A total of 39 procedures was performed on 27 patients, and further revision surgery was required in 5/27 (19%) patients. 12 patients had renal impairment pre-operatively (mean GFR 53mls/min), but GFR was preserved in all patients subsequent to surgery. Two patients had continued incontinence, one after colposuspension, and another after ileocystoplasty. Two patients developed bowel obstruction; one required ileostomy formation, and there was one mortality subsequent to small bowel leakage. One patient developed a pulmonary embolus

Conclusion: This is a challenging cohort of patients, with significant compromise of lower urinary tract and bowel function. A variety of major RUS is required for management. Urinary continence was achieved in the majority, and renal function was preserved. However, this was at a cost of a re-intervention rate of 19% and significant morbidity in 14%. RUS in radiotherapy field should be performed in centres with experience.

Table 1: Urodynamic and imaging diagnoses and procedures performed

<table>
<thead>
<tr>
<th>Urodynamic / Imaging Diagnoses</th>
<th>Procedures Performed</th>
<th>Frequency n (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constricted bladders with compliance loss (mean bladder capacity was 179mls)</td>
<td>18 (67%)</td>
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</tr>
<tr>
<td>Vesicoureteric reflux (secondary to poor compliance)</td>
<td>12 (44%)</td>
<td></td>
</tr>
<tr>
<td>Ureteric stricture</td>
<td>13 (48%)</td>
<td></td>
</tr>
<tr>
<td>Urinary incontinence</td>
<td>12 (44%)</td>
<td></td>
</tr>
<tr>
<td>Urinary fistulae</td>
<td>4 (15%)</td>
<td></td>
</tr>
<tr>
<td>Intractable detrusor overactivity</td>
<td>13 (48%)</td>
<td></td>
</tr>
<tr>
<td>Ileal conduit diversion</td>
<td>14 (2 requiring further revision of anastomotic strictures; 1 conversion neobladder to conduit)</td>
<td></td>
</tr>
<tr>
<td>Ileocystoplasty</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Ileal interposition chute</td>
<td>7 (1 requiring further revision of anastomotic stricture)</td>
<td></td>
</tr>
<tr>
<td>Ureteric reimplantation</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Vesicovaginal fistula repair</td>
<td>3 (one neobladder to vagina fistula repair)</td>
<td></td>
</tr>
<tr>
<td>Colposuspension</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Bladder neck closure and Mitrofanoff</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>

Ureteric and bladder dysfunction were combined (complex) in all cases
Poster #NM151

NO INCREASED RISK OF CARCINOGENESIS WITH MESH-BASED HERNIA REPAIRS

Bilal Chughtai, MD¹, Art Sedrakyan, MD, PhD¹, Jialin Mao, MD, MSc¹, Dominique Thomas, BS¹, Karyn Eilber, MD², James Clemens, MD, FACS, MSCI³ and Jennifer Anger, MD²

¹Weill Cornell Medicine, New York, NY; ²Cedars-Sinai Medical Center, Beverly Hills, CA; ³The University of Michigan Medical Center, Ann Arbor, MI

Presented By: Dominique D. M. Thomas, BS

Introduction: Each year over 800,000 hernia repairs are performed in the United States. The use of synthetic mesh has been placed under considerable scrutiny on a number of consumer websites and by complications reported by the FDA. We sought to evaluate whether there is a link between placement of synthetic polypropylene mesh for hernia repair and a subsequent cancer diagnosis.

Methods: Adult men undergoing mesh-based hernia repair between January 2008 and December 2009 in New York State were identified using International Classification of Diseases, Ninth Revision, Modification (ICD-9-CM) procedure codes and Current Procedural Terminology Coding System, Fourth Edition (CPT-4) codes. Control cohorts of men undergoing cholecystectomy and total knee replacement were created as populations not exposed to mesh, to obtain baseline cancer diagnosis rates.

Results: 27,425 patients undergoing hernia repair between January 2008 and December 2009 were included in the final analysis. 13,339 men underwent cholecystectomy and 11,435 underwent total knee arthroplasty (TKA). 1,894 patients undergoing hernia repair, 912 patients in the cholecystectomy control cohort, and 1,099 in the TKA control cohort with a cancer diagnosis. In the matched analyses of mesh-based hernia repair and cholecystectomy patients 6.5% vs. 7.1% developed cancer. In the matched analysis of hernia patients and TKA patients, 9.3% vs. 9.1% developed cancer. No association between mesh-based hernia surgery and increased risk of cancer was found at any of the pre-specified time points for analyses.

Conclusion: Mesh-based hernia repair was not associated with an increased risk of subsequent development of cancer in men. This supports the safety of polypropylene and refutes the claims mesh-based hernia repair leads to cancer.
Poster #NM152
ADVERSE EVENTS REPORTED WITH DA VINCI SURGICAL SYSTEMS OVER THE LAST DECADE
Hanson H. Zhao, MD¹, Colby P. Perkins, MD¹, Farnoosh Nik-Ahd ², Bilal Chughtai, MD³ and Jennifer T. Anger, MD, MPH¹
¹Cedars-Sinai Medical Center; ²UCLA David Geffen School of Medicine, Los Angeles, CA; ³Weill Cornell Medical Center, New York City, NY
Presented By: Hanson H. Zhao, MD

Introduction: Since FDA approval of the Da Vinci Surgical System, there has been a rapid growth in the volume of robotic-assisted surgeries with 753,000 procedures performed worldwide in 2016. The goal of this work is to analyze reported adverse events associated with the surgical robots over the last ten years to identify target areas for quality improvement.

Methods: We performed a search of the FDA Manufacturer and User Facility Device Experience (MAUDE) database. All entries with the manufacturer “Intuitive Surgical” were exported from the years 2007 to 2017. The data was then organized by “Event Date” and “Event Type” and analyzed based on the total volume of robotic-assisted surgeries each year, which were obtained from Intuitive Surgical Annual Reports.

Results: A total of 21,129 adverse events were reported from 2007 to 2017. The adverse events were categorized as follows: 284 (1.34%) were “Death”; 1,888 (8.94%) were “Injury”; 17,830 (84.39%) “Malfunction,” and 1,127 (5.33%) were “Other.” The annual number of reported adverse events with surgical robots peaked in 2013 (5,866 events) and 2014 (6,165 events) with a subsequent large decline in 2015 (1,478 events) and 2016 (981 events), despite an annual increase in the number of cases performed. Adjusting for the case volume underscores these data trends—the rate of reported “Deaths” peaked in 2012 with 12.00 per 100,000 surgeries and declined to 1.46 in 2016. The rate of reported “Injuries” peaked in 2012 with 70.44 per 100,000 surgeries and declined to 17.80 in 2016. Finally, the rate of reported “Malfunctions” peaked in 2013 with 1033.46 per 100,000 surgeries and declined to 110.89 in 2016.

Conclusion: These data show a decrease in the rate of adverse events (deaths, injuries, and malfunctions) associated with robotic-assisted surgeries over the last few years. These findings may be explained by an increasing skill with the robotic system by surgeons and staff. In addition, proficiency with robotic surgery is now a focus for many training programs. Finally, newer robot models with software and hardware upgrades may be able to better optimize surgeries and minimize previously seen errors.

Da Vinci Surgical Reported Adverse Event Rate
Interview: Female urethral stricture is an uncommon yet debilitating condition. Although many operations have been described to treat this condition, buccal mucosal graft urethroplasty (BMG-U) has emerged as one of the most novel and effective techniques to treat female urethral stricture. While a few small series have reported on the patency rate after BMG-U none have focused on post-operative urinary incontinence and voiding dysfunction rate.

Methods: We performed a retrospective analysis of post operative voiding dysfunction in 22 patients who underwent BMG-U at our institution. From July 2011 to October 2017, we identified 22 female patients (Mean age = 52; range 24-79) who underwent BMG-U to manage female urethral stricture. Inclusion criteria for repair included: significant obstructive urinary symptoms, PVR greater than 100 ml, and stricture #8 French or less. All patients underwent outpatient female BMG-U using dorsal onlay (80%), ventral (10%), combination (ventral and dorsal onlay (10%), length of stricture (mean 1.5 cm; range, 0.5cm to 2.5 cm). All strictures were at the mid or proximal 1/3 of the urethra. Distal 1/3 urethral strictures were treated using distal graft-free meatoplasty. 20 of the 22 patients have complete data since a minimum follow up of 6 months is being reported.

Results: 18 out of 20 (90%) patients never required a second operation or instrumentation for the urethral stricture. 2 of the 20 patients required re-operation. One patient remained patent after a second BMG-U which was performed 6 months after a failed first BMG-U. Another patient required two subsequent urethroplasties with poor results. Post-operative voiding dysfunction was minimal in our small cohort. No post-operative stress urinary incontinence was noted.

Conclusion: Early results indicate that BMG for female urethral stricture is an effective surgical procedure. Stress urinary incontinence is not noted and post-op voiding dysfunction is rare. Long term data and larger series is warranted to support this retrospective observation.

Table 1: Outcomes of Female BMG Urethroplasty (N = 20)

<table>
<thead>
<tr>
<th></th>
<th>Range, 24-79</th>
<th>Mean = 55</th>
</tr>
</thead>
<tbody>
<tr>
<td>Follow up (months)</td>
<td>Range, 7-60</td>
<td>Mean = 30</td>
</tr>
<tr>
<td>Urinary Urgency</td>
<td>2/20</td>
<td>10%</td>
</tr>
<tr>
<td>Urinary Frequency</td>
<td>4/20</td>
<td>20%</td>
</tr>
<tr>
<td>Stress Urinary Incontinence</td>
<td>0/20</td>
<td>0%</td>
</tr>
<tr>
<td>Urgency Urinary Incontinence</td>
<td>2/20</td>
<td>10%</td>
</tr>
<tr>
<td>Resolution of Obstructive LUTS after 1st BMG-U</td>
<td>18/20</td>
<td>90%</td>
</tr>
<tr>
<td>Resolution of Obstructive LUTS after 2nd BMG-U</td>
<td>19/20</td>
<td>95%</td>
</tr>
</tbody>
</table>
INTRODUCTION: Urethral obstruction may occur to some degree in up to 20% of patients undergoing surgical therapy for stress urinary incontinence (SUI), and pain is fortunately a rare, but significant, complaint as well. With the establishment of midurethral slings as the preferred treatment for SUI, occasional urethral obstruction and pain are expected to follow. In women with severe/symptomatic retention or intractable symptoms, urethrolysis represents a suitable surgical modality. Our objective is to identify patient characteristics that predict higher success rates in those undergoing urethrolysis for urethral obstruction and pain, and to update the expected outcomes of this procedure.

METHODS: The surgical record from a single center was reviewed for all cases of urethrolysis from 2008-2017. Patient characteristics, urodynamic data, and symptom quantification were analyzed pre and postoperatively using descriptive analysis and paired T-Tests.

RESULTS: From 2008-2017, 81 patients underwent urethrolysis by a single surgeon. The average patient BMI was 27.2, and average age was 62 years. Preoperatively, the average preoperative sling duration was 45.8 months, with average 30 months symptom duration. Preoperative vs. postoperative data included: 100 vs. 62.8 milliliters (mL) post-void residual (PVR) (p=0.04), 15.9 vs 15.2 mL/s maximal flow rate (Qmax) (p=0.45), and 17.5 average detrusor pressure at maximum flow (Pdet Qmax). Patient global impression of severity (PGI-S) additionally improved from 2.9 to 2.0 (p<0.01). Sixty-one of the patients remained continent postoperatively (74%), and thirty one of the thirty eight patients who reported preoperative pain saw improvement/resolution of their pain.

CONCLUSION: In our case series, our patient population generally had a late presentation and long duration of symptoms, as they were often treated very conservatively by their original surgeon before making it to our tertiary center. Post void residual and PGI-S showed statistically significant improvements from preoperative to postoperative values. Seventy-four percent of the patients who underwent urethrolysis remained continent postoperatively, and eighty-one percent experienced improvement in pain. Our finding show that urethrolysis is a surgical option for severe urethral obstruction and offers favorable continence rates, with improvement in pain and patient-perceived severity of symptoms. No financial funding was used for this work.
A NOVEL BIOADHESIVE WRAP FOR URETHROVESICAL ANASTOMOSIS REINFORCEMENT
Bradley Gill, MD, MS, Andrew Baker, Eric Klein, MD and D Geoffrey Vince, PhD
Cleveland Clinic
Presented By: Bradley C. Gill, MD, MS

Introduction: Radical prostatectomy is now a relatively common procedure that can be challenged by urethrovesical anastomosis (UVA) leak and result in bothersome post-prostatectomy incontinence. The aim of this pilot study was to develop a bioadhesive wrap for UVA reinforcement and characterize its performance in preventing UVA leaks.

Methods: Upon protocol approval, 8 male Yorkshire pigs (35-40kg, 3-4 months) underwent prostatectomy and simulated robotic UVA using an 8 french catheter. Animals were randomized to a standard or reinforced UVA, which was loosely sutured. Baseline intravesical pressure at visualized UVA leak was measured by manually compressing the bladder. Animals randomized to receive a UVA reinforcement then had a polyethylene terephthalate ribbon soaked in non-crosslinked gelatin hydrogel placed circumferentially around the urethra, secured with a suture, and activated with 1 ml of 0.03% hydrogen peroxide to induce hydrogel crosslinking. Leak pressure testing was performed at 1, 4, 7, and 21 days after surgery. If no leak was noted, the pressure recorded was the maximal intravesical pressure achieved with bilateral ureteral clamping. Each UVA was sent en bloc for histologic analysis.

Results: Two pigs removed their catheters postoperatively and were excluded from analyses. Of the 6 remaining, there was one at each time point with a wrap and one at days 1 and 7 without wraps. All animals demonstrated higher leak pressures on the dates of testing compared to day of surgery baselines (Table 1). The relative increase from baseline leak pressure to the day of testing was greater in animals with a reinforced UVA than controls without wraps. At day 7 no leak occurred from the reinforced UVA, but did occur in the un-wrapped control. Histologic analysis showed gradual replacement of the hydrogel with inflammatory cells over the first week and fibrous tissue covering the wrap by three weeks.

Conclusion: A novel bioadhesive urethrovesical anastomotic wrap strengthened the simulated prostatectomy anastomosis and eliminated leakage under pressure by 1 week. The effects of such an anastomotic wrap on continence and urethral function remain unknown.

<table>
<thead>
<tr>
<th>Day</th>
<th>Baseline Leak Pressure (mmHg)</th>
<th>Test Date Leak Pressure (mmHg)</th>
<th>Change</th>
<th>Leak</th>
<th>Baseline Leak Pressure (mmHg)</th>
<th>Test Date Leak Pressure (mmHg)</th>
<th>Change</th>
<th>Leak</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>33</td>
<td>78</td>
<td>236%</td>
<td>Yes</td>
<td>26</td>
<td>73</td>
<td>201%</td>
<td>Yes</td>
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Poster #NM156
SIZE OF ARTIFICIAL URINARY SPHINCTER CUFF RELATIVE TO URETHRAL CIRCUMFERENCE AND ITS IMPLICATIONS FOR DEVICE EFFICACY OVER TIME
Arnav Srivastava, BA, MPH, Gregory Joice, MD, Hiten Patel, MD, MPH, Madeleine Manka, MD, Nikolai Sopko, MD, PhD and Edward Wright, MD
Johns Hopkins Hospital, Baltimore, MD
Presented By: Arnav Srivastava, BA, MPH

Introduction: Selection of cuff size in artificial urinary sphincters (AUS) is based on the urethral circumference. It is accepted that overly large cuffs may provide insufficient coaptation and inappropriately small cuffs may cause urethral complications (urethral erosion or atrophy). However, implications of cuff size relative to urethral circumference are poorly understood. We conducted survival analysis studying the difference between urethral circumference and cuff circumference \[UCC = \text{urethral circumference} - \text{cuff circumference}\] to better understand the implications of cuff selection.

Methods: 168 patients, identified by retrospective chart review, underwent AUS placement by one surgeon from 2008 – 2016. Patients requiring explant or revision had the event of interest. Urethral circumference, cuff size, and cause of AUS failure were assessed intra-operatively during initial placement or revision. After stratifying patients into 3 UCC categories, 0-1.5cm, >1.5-2cm, and >2.5cm, Kaplan Meier estimates and Cox proportional hazards models evaluated UCC as a predictor of all-cause AUS failure and urethral complication (device failure due to urethral erosion or urethral atrophy). Higher UCCs indicated a more tightly fitting cuff.

Results: Median follow up was 2.7 years (IQR: 1.1, 5.9) and 36.9% (62/168) of patients required revision or explant. Median cuff size, urethral circumference and UCC were 4.5cm (IQR: 4.5, 5.0), 7.0cm (IQR: 6.0, 7.2), and 2.0cm (IQR: 1.5, 2.5), respectively. When examining all-cause AUS device failure, with UCC 0-1.5cm as the reference group, UCC >1.5-2cm (Multivariable HR = 0.95, p = 0.89) and UCC >2.5cm (Multivariable HR = 0.57, p = 0.18) did not predict device failure (Figure 1). Similarly, when specifically examining risk of urethral erosion or atrophy, UCC >1.5-2cm (Multivariable HR = 1.19, p = 0.77) and UCC >2.5cm (Multivariable HR = 0.25, p = 0.14) were not predictive of device failure.

Conclusion: Patients with large UCCs, or tightly fitting cuffs, do not experience comprised AUS efficacy or increased urethral erosion and atrophy.

![Figure 1: Overall AUS Device Survival by UCC Category](image-url)

<table>
<thead>
<tr>
<th>Number at risk</th>
<th>Follow-up (years)</th>
</tr>
</thead>
<tbody>
<tr>
<td>UCC = 0-1.5cm</td>
<td>37  30  20  17  15</td>
</tr>
<tr>
<td>UCC &gt;1.5-2.5cm</td>
<td>62  51  34  28  22</td>
</tr>
<tr>
<td>UCC &gt;2.5cm</td>
<td>31  26  24  22  19</td>
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Poster #NM157
NON-CLINICAL BARRIERS TO CARE IN COMPLEX BENIGN UROLOGIC RECONSTRUCTION AT A QUATERNARY CARE CENTER
Rachel Sosland, MD, Joshua Cohn, MD, Niels Johnson, MD, Casey Kowalik, MD, Kelvin Moses, MD, PhD, W. Stuart Reynolds, MD, MPH, Doug Milam, MD, Roger R. Dmochowski, MD and Melissa R. Kaufman, MD, PhD
Nashville, TN
Presented By: Rachel Sosland, MD

Introduction: Patients requiring complex urologic (GU) reconstruction for lower urinary tract dysfunction (LUTD) are susceptible to a high rate of complications. These complications may be compounded by non-clinical factors that are underreported and often impact decision-making, self-care and access to qualified subspecialists. The aim of this study was to quantify the prevalence of these non-clinical barriers in patients undergoing benign complex GU reconstruction.

Methods: Adult patients undergoing benign GU reconstruction using an intestinal segment between 10/2010 and 11/2015 were included. Health literacy was assessed via the Brief Health Literacy Screen (BHLS), a validated 3-question assessment of health literacy. Composite scores range from 3 to 15 with lower scores indicating poorer health literacy. The median score at our institution is 13 with a score ≤9 considered poor. Other assessments included education, marital status, and distance from the medical center. Patients were grouped by etiology of LUTD: neurogenic bladder (NGB), radiation cystitis (RC) and refractory lower urinary tract symptoms (LUTS). We also evaluated the subset of patients with congenital NGB.

Results: 97 patients (48% male) met inclusion criteria. Etiology of LUTD was NGB in 50 (52%), RC in 22 (23%) and LUTS in 25 (26%). Mean age of the NGB group was significantly lower at 43 vs. 60 (RC) and 61 (LUTS) years (p<0.01). In the first month after surgery, 70 (72%) patients experienced a complication, and 23% were readmitted. Overall median BHLS score was 12.6 (IQR 10, 15, p=0.51; ≤9 in 23%), years of education 12 (IQR 12, 14) and miles to hospital 126 (IQR 64, 180) with no significant difference between groups. Thirty-six percent of patients were married (22% NGB, 50% RC, 52% LUTS, p=0.04). In the congenital NGB group (n=14) 39% had poor literacy (median BHLS 10) with a median education of 12 years (IQR 12, 12) and median distance to the hospital of 102 miles (IQR 43, 251). Compared to non-congenital NGB patients, congenital NGB patients were significantly less likely to be married (0 vs. 42%, p<0.01).

Conclusion: Multiple non-clinical factors including unmarried status, poor health literacy and marked distance from quaternary care are prevalent in patients requiring complex GU reconstruction, with adult congenitalism patients being especially vulnerable. These factors may markedly impact patient decision-making, self-care and access to care, which are vital to long-term success.
Introduction: Few studies have investigated sexual function and fertility status in adults with spinal dysraphism or other congenital genitourinary abnormality (CGUA), and many of these were published over a decade ago. 5 of these studies used validated questionnaires, of which only 2 included both male and female subjects. The objection was to evaluate sexual function and fertility status in adult patients with CGUA, both male and female, by applying validated questionnaires.

Methods: Between 2014 and 2017, 167 adult patients with CGUA were referred to a single tertiary transitional care clinic. 75 patients consented and completed the questionnaires. Of those, 62 patients (26 males, 36 females) with a mean age of 25.1 years (range 15-75) met inclusion criteria and responded to questionnaires pertaining to sexuality and fertility, including the validated Sexual Health Inventory for Men (SHIM) and Brief Index of Sexual Functioning for Women (BISF-W). Research coordinators assisted patients in completing questionnaires.

Results: Of the 62 participants, 45 (73%) responded to the fertility questionnaire. 26 (58%) had never heard of assisted reproductive technologies, and only 1 had received prior fertility counseling. 60 (97%) participants responded to the sexual function questionnaire. 21 (35%) reported a history of sexual activity, with 12 (20%) being currently sexually active. 20 (33%) wanted to learn more about sexuality and/or fertility, and 14 (23%) were not currently sexually active but wanted to become sexually active. The response rate for the SHIM questionnaire was 42%, and only 3 females (8%) completed the BISF-W in entirety.

Conclusion: A significant proportion of adults with CGUA are engaging in sexual activity despite having a poor knowledge of sexual and reproductive health. While adults with CGUA desire more education on sexuality and fertility, they are uncomfortable addressing these sensitive topics in our current healthcare environment. Medical providers should discuss sexual and reproductive health with these patients earlier and in more detail. Additionally, standard questionnaires are too difficult for this patient population to complete despite assistance. Thus, modifications are needed.
Poster #NM159

THE RATE OF PYOCYSTIS AND SUBSEQUENT NEED FOR REMNANT BLADDER CYSTECTOMY FOLLOWING ILEAL CONDUIT URINARY DIVERSION FOR BENIGN AETIOLOGY

George Mankaryous, MBBS, Rachel Barratt, MB ChB, Mahreen Pakzad, MD, FRCS, MB ChB, Rizwan Hamid, MSc, FRCS, MB ChB, Jeremy Ockrim, MD, FRCS, MB ChB and Tamsin Greenwell, MD, FRCS, MB ChB
UCLH Urology, UCLH, London, UK
Presented By: George Mankaryous, MBBS

Introduction: To assess the frequency of development, risk factors for and need for subsequent cystectomy to treat pyocystis in patients with defunctionalised bladders following ileal conduit urinary diversion for benign causes.

Methods: Remnant bladder outcomes following ileal conduit urinary diversion for benign aetiology between 1997 and 2014 were analysed. The mean age of patients was 46 years (range 2-78). Aetiology for conduit formation included; end stage complex urinary incontinence, bladder pain syndrome, atonic bladder and Fowler’s syndrome. Mean follow up was 49 months (range 6 – 252 months). Data was retrieved on patient demographics and co-morbidities, indications for ileal conduit diversion, development and treatment of pyocystis, and the need for subsequent cystectomy.

Results: 66 (81%) female and 15 (19%) male patients had ileal conduit diversion for benign aetiology in this time period. Treatments for pyocystis included; antibiotics, remnant bladder ISC, remnant bladder washout and simple cystectomy. Risk factors for pyocystis and need for cystectomy are detailed in table 1.

<table>
<thead>
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<th>No Pyocystis (62 (76%))</th>
<th>Pyocystis (19 (24%))</th>
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</thead>
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<td>All patients</td>
<td>62 (76%)</td>
<td>19 (24%)</td>
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<tr>
<td>Mean Age (Range)</td>
<td>46.39 years (2-78)</td>
<td>45.78 years (25-67)</td>
</tr>
<tr>
<td>Male</td>
<td>9 (60%)</td>
<td>6 (40%)**</td>
</tr>
<tr>
<td>Female</td>
<td>53 (80%)</td>
<td>13 (20%)</td>
</tr>
<tr>
<td>SPC prior conduit</td>
<td>17 (27%)</td>
<td>9 (47%)</td>
</tr>
<tr>
<td>No SPC prior to conduit</td>
<td>45 (73%)</td>
<td>10 (53%)</td>
</tr>
<tr>
<td>Subsequent Cystectomy</td>
<td>0</td>
<td>18 (95%)*</td>
</tr>
</tbody>
</table>

*P< 0.01
** P=0.09

Patient with pyocystis not having cystectomy had multiple co-morbidities and was unfit for surgery. There was no correlation between aetiology and the subsequent development of pyocystis.

Conclusion: 24% of patients with remnant bladders following ileal conduit diversion for benign aetiology develop pyocystis. Conservative treatments are ineffective and 95% require eventual simple cystectomy. Risk factors for the development of pyocystis are male gender and prior SPC insertion.
Poster #NM160
PREVALENCE OF URETHRAL STRICTURE IN STEVENS-JOHNSON SYNDROME AND TOXIC EPIDERMAL NECROLYSIS
Tyler Kern, MD¹, Daniel Artenstein, MD¹, Gil Weintraub, MD², Polina Reyblat, MD¹ and Christopher Tenggardjaja, MD¹
¹Kaiser Los Angeles Medical Center Department of Urology, Los Angeles, CA; ²Massachusetts General Hospital Department of Dermatology, Boston, MA
Presented By: Tyler Kern, MD

Introduction: Stevens-Johnson Syndrome (SJS) and Toxic Epidermal Necrolysis (TEN) are rare, acute, and life-threatening mucocutaneous drug reactions characterized by full-thickness skin necrosis and mucosal sloughing. SJS and TEN represent a spectrum of disease severity, with SJS affecting less than 10% of total body surface area (TBSA) and TEN greater than 30% of TBSA. SJS is associated with a mortality rate of 1-5% while the mortality rate of TEN approaches 30%. Patients are typically managed in the intensive care or burn unit, and those who survive often suffer debilitating cutaneous and ocular sequelae. Given that SJS/TEN involve multiple mucosal surfaces, the urethra is another site at risk of permanent scarring or stricture. While medical literature has associated SJS/TEN with the potential to develop urethral strictures, no studies have quantified this relationship. Our objective is to calculate the prevalence of urethral strictures in patients with SJS/TEN and to evaluate the disease-specific characteristics including stricture length, location, time to development, treatments, and outcomes.

Methods: We conducted a retrospective chart review using the Kaiser Southern California database. We identified all male patients from 2008 – 2017 who were diagnosed with SJS/TEN. Among this group, we identified whether patients developed a urethral stricture and compared these rates with the reported rates of stricture from the U.S. male population.

Results: Between 2008 – 2017, 156 cases of SJS and 23 cases of TEN were diagnosed at Kaiser Southern California. Six patients with SJS (6/156, 3.8%) and 2 patients with TEN (2/23, 8.7%) subsequently developed urethral strictures. Rates of stricture in SJS/TEN patients were higher than reported rates of male urethral stricture in the U.S. (0.2-1.2%; Fisher’s exact, p=0.0019).

Conclusion: We identified the prevalence of urethral stricture to be 3.8% and 8.7% in patients diagnosed with SJS and TEN, respectively. Our study finds increased rates of male urethral stricture following SJS/TEN. We propose that the profound inflammatory process in SJS/TEN increases the risk of sloughing of urethral mucosa and subsequent stricture formation. Given the morbidity associated with urethral stricture, future studies should investigate timing of stricture development and possible preventative interventions.
**Introduction:** Gender dysphoria affects 0.6% of adults in the United States (US). Along with endocrine interventions, gender affirmation surgery (GAS) helps patients align their phenotypic features with their gender identity. In the past, GAS had limited availability in the US, prompting transgender patients to seek operations overseas. This impeded multidisciplinary care and long term follow-up. This study reports our early vaginoplasty experience in an integrated health care system.

**Methods:** We included all patients who underwent a penile inversion vaginoplasty at Kaiser Permanente since April 2017. All patients satisfied criteria for GAS per World Professional Association for Transgender Health (WPATH) guidelines. Characteristics reported include age, preoperative genitourinary exam and urinary function, length of hormone therapy, and medical comorbidities. Surgical outcomes include description of their acute postoperative course, subsequent clinical follow-ups, and complications. Sexual satisfaction, American Urological Association (AUA) symptom score, and urinary quality of life scores were also documented.

**Results:** A total of 13 vaginoplasties were performed. Mean age was 45, (21-74). Average follow-up was 99 days (12-175). Other than one patient with prior stroke, all were treated with hormone therapy for at least 2 years. The most common acute complication was transient urinary retention, affecting 23% (3) of the patients. Other complications included intraoperative urethral injury (1), hematoma requiring operative evacuation (1), and acute blood loss anemia requiring blood transfusions (2). The most common complication seen on follow-up was small areas of wound dehiscence (5). Three patients had infections, two of which were urinary tract infections and one labial abscess. Early GAS patients have already achieved orgasm and performed penetrative intercourse. In terms of their urinary status, average AUA score was 4.7, with a quality of life score of 1.7.

**Conclusion:** GAS within an integrated health care system allows thorough follow up of our patients and accurate reporting of complications. In our early vaginoplasty experience, complication rate was 61%. Average urinary quality of life score was 1.7, reflecting that patients were pleased or mostly satisfied postoperatively with urinary function. Further surveys and clinical follow-up will help to determine more long term complications and satisfaction with the surgery.
Poster #NM162
BLANDY VAGINAL WALL INLAY FLAP IN THE SURGICAL MANAGEMENT OF FEMALE DISTAL URETHRAL STRICURE DISEASE
Kyle Rose, MD, MS and Christopher Wolter, MD
Mayo Clinic, Phoenix, AZ
Presented By: Kyle M. Rose, MD, MS

Introduction: True female urethral stricture disease is a rare process that is often misdiagnosed and mismanaged. There is little consensus as to what technique is most optimal for management given the rarity of the diagnosis. Urethral dilation is often used, but recurrences are problematic, sometimes necessitating urethral reconstruction. We present our review of female urethral stricture disease managed with Blandy vaginal inlay flap reconstruction.

Methods: An institutional review board approved retrospective study was performed at our institution for female urethroplasty and urethral reconstruction. Data obtained from chart review included: patient age, procedure performed, duration of operation, preoperative and postoperative presence of irritative symptoms, cystitis, incontinence, peak uroflow, and post-void residual (PVR).

Results: Eight female urethroplasty procedures were performed from 2008-2016. The average patient age was 55 years. Preoperatively, all of the patients complained of irritative symptoms, none were incontinent, and one had pre-existing cystitis. Preoperative average peak uroflow was 7.7 mL/second, while preoperative PVR was 200mL. Two procedures were re-operations on the same patient. The average operative time was 129 minutes, with an average blood loss of 57mL. Postoperatively, the average uroflow was 20.1 mL/second, with an average PVR of 76mL. Other than the need for further operations in one patient, there were no major complications recorded in the medical record, and eventually urethral patency was well established in all patients in the series. Continence also remained excellent in all patients postoperatively.

Conclusion: The Blandy vaginal wall inlay flap technique for managing female distal urethral stricture disease demonstrated good success in carefully selected patients with minimal morbidity seen in this series. Here we demonstrated significant and sustained improvement in uroflow and PVR, as well as symptom resolution in the vast majority of our cases performed at our institution. Given that the stricture disease was distal in all patients, we feel this contributed to the feasibility of the technique as well as the preserved continence seen post-operatively. Further large-scale studies and expanded follow-up will be needed to further validate the efficacy of this technique.

Source of Funding: None
Poster #NM163
DEXTROSE INSTILLATION AS AN ALTERNATIVE AGENT TO OBSERVE URETERAL EFFLUX DURING PELVIC RECONSTRUCTIVE SURGERY
Julie Cheng, MD, MAE, G. Austin Krishinger, BA, Kristin Chung, MS, Hillary Wagner, MD, Junchan Yune, MD and Andrea Staack, MD, PhD
Loma Linda, CA
Presented By: Julie W. Cheng, MD, MAE

Introduction: Various agents, such as indigo carmine, sodium fluorescein, and phenazopyridine, have been used in the visualization of ureteral efflux during cystoscopy. These agents can be limited by cost, availability, and variability in renal excretion. Dextrose may be an alternative agent that can aid in visualization of ureteral efflux. The purpose of this study was to evaluate the use, cost, and postoperative UTI rates and complications of dextrose instillation during cystoscopy.

Methods: The medical records of patients that underwent intraoperative cystoscopy during vaginal reconstructive surgery between June 2016 and June 2017 were reviewed. The patients were divided into two groups: patients that had dextrose 50% (D50) instilled and patients that did not have D50 instilled during cystoscopy. Prophylactic antibiotics were administered to all patients and did not differ between the two groups. When dextrose was used, one ampule (or 50 ml) of D50 was directly instilled through the cystoscope. Patients were followed for a minimum of 6 weeks. Preoperative demographics, UTI rates, and postoperative complications were compared. Statistical analysis was conducted using Fisher’s Exact Test and a univariate regression model. A p value of <0.05 was considered statistically significant. Pharmaceutical cost and availability were reported by the pharmacy at our institution.

Results: Out of the 63 patients identified, dextrose instillation was used in 20 patients and no dextrose was used in 43 patients. The patients of both groups were comparable in age, body mass index, parity, menopausal status, pelvic organ prolapse stage, and history of recurrent UTIs. Each ampule of D50 cost $2.18 and there were no problems with supply shortage. As D50 was directly instilled into the bladder, there was immediate visualization of ureteral efflux at the time of surgery. No additional time was required for renal excretion. Three patients in the dextrose group and 10 patients in the non-dextrose group developed postoperative UTIs. There was no statistically significant difference in postoperative UTI rates between the two groups (p = 0.52) and there were no differences in complication rates as the median Clavien-Dindo score was 0 for both groups.

Conclusion: Dextrose is a cost-effective, readily available agent that provides instantaneous visualization of ureteral efflux without an increased risk of postoperative UTI.

FUNDING: None
Introduction: Transgender people today represent approximately 0.6% of the adult population (1.4 million people). Genital gender affirming surgery (vaginoplasty) for transgender women has been a covered benefit by MediCare, MediCal, and in an increasing number of U.S. states, commercial health insurance plans due to state laws that bar exclusion of provision by insurance plans. There is not yet an accepted "gold standard" vaginoplasty technique, or, approach to preventing or managing complications. Because many patients present to general urologists for management of short and long-term complications after surgery, how to manage such complications is relevant to general urologists and reconstructive urologists not specialized in gender affirming surgery. We present here a review of common and uncommon complications after surgery, and how we propose such complications arise. We review management approaches.

Methods: Outcomes and complications from vaginoplasties performed over a 2-year period by a single-surgeon are reviewed. In addition, post-operative complications among patients who underwent vaginoplasty elsewhere but who presented to our institutions for management, are reviewed.

Results: Complications managed at our tertiary care centers included the less common: recto-vaginal fistula and perineal fistula), neovaginal stenosis that was salvageable by dilation, stenosis not salvageable by dilation, urethral stricture, and loss viability of a portion of the clitoris. More common complications include granulation tissue and bleeding from the vulva, vaginal pain, and dehiscence of the posterior commissure. A moderate number of patients presented with recurrent urinary and neovaginal infections. The proposed etiology, mechanism of injury, and management primary and alternative approaches for each is discussed. How to counsel patients and surgeons to avoid such complications is discussed.

Conclusion: Knowledge about how to manage post-operative complications after M to F genital gender affirming surgery with vaginoplasty is relevant to general and reconstructive urologists not specialized in transgender surgery, as such patients are often referred to the only available urologists in a health-care setting. Management of most such complications is straightforward, and effective.

Funding source: none
Poster #NM165

MANAGEMENT OF PROSTATIC RELATED FLUID COLLECTIONS IN ADULT PATIENTS WITH BLADDER EXSTROPHY WITH MAINTAINANCE OF ERECTILE FUNCTION

Matthias Hofer, MD, PhD, Olga Alexeeva, BS, Davide Cina, BS, Stephanie Kielb, MD, Robert Nadler, MD, Robert Brannigan, MD and John Hairston, MD
Northwestern University
Presented By: Matthias D. Hofer, MD, PhD

Introduction: Adult patients with bladder exstrophy reconstructed in infancy can be a challenging population due to a variety of subsequent health problems. Male patients can present with painful cystic fluid collections inferior to the bladder believed to be an accumulation of secretions of prostatic remnant tissue.

Methods: A retrospective chart review was performed of patients who presented between 1998-2016 with pelvic fluid collections. Patients had been followed for a mean of 9 years (1-23).

Results: Three patients were identified. All 3 required urinary diversions at various intervals following their exstrophy repair as newborns (one had ureterosigmoidostomy as a newborn; one had bladder augmentation and Mitrofanoff appendicovesicostomy in childhood; one had 2 bladder augmentations in childhood followed by Indiana Pouch procedure at age 32). All patients had complete erectile function as this was a primary goal of previous diversion. All presented with symptomatic fluid collections located inferior to the bladder visualized by CT. Mean age at presentation was 32.3 years (26-38 years). In 2 patients, sclerosing of fluid collections was performed, which led to durable relief in one patient. One patient underwent marsupilization of the fluid collection which failed to sufficiently drain all collections and did not relieve the pain. Two patients underwent open surgical excision of prostatic and bladder remnant tissue. This resolved the fluid collections and improved or relieved the pain symptoms. Importantly, both patients maintained their erectile function.

Conclusion: Adult patients with bladder exstrophy can present with painful cystic fluid collections due to secretions of a prostatic remnant. Sclerosing of the cyst can be successful in a subset. Removal of the prostatic remnant tissue can be curative and achieved with preservation of erectile function.
Poster #NM166

VENTRAL BUCCAL MUCOSAL GRAFT URETHROPLASTY IN WOMEN WITH URETHRAL STRICTURES
Laura Nguyen, MD, Esther Han, DO, Frank Burks, MD, Jason Gilleran, MD, Kim Killinger, MSN and Larry Sirls, MD
Royal Oak, MI
Presented By: Laura Nguyen, MD

Introduction: Female urethral strictures are rare and management varies. We present a ventral-onlay buccal graft technique and patient outcomes.

Methods: We retrospectively reviewed all women who underwent ventral-onlay buccal graft urethroplasty for urethral stricture disease from 2010 to 2017. Urethroplasty was performed via an inverted-U incision in the anterior vaginal to expose the ventral urethra, with the buccal graft then placed over the divided strictured area. Data collection included demographic data, medical history, preoperative investigations, surgical technique, post-operative complications, symptom score and follow-up.

Results: Six women underwent ventral buccal graft urethroplasty during the study period. Mean age was 60 years, with median follow-up 162 days. Stricture etiologies were radiation (1) foley catheter (2), and idiopathic (3). Presenting complaints were retention (1) and lower urinary tract symptoms (5). Mean preoperative post-void residual was 169 mL. Preoperative uroflow was available for four patients: mean peak flow was 11.3 mL/s and mean average flow was 4.9 mL/s. Patients had an average of 4 (median 3, range 1-15) previous interventions. Urethroplasty was performed at mean 8 years (median 6) following diagnosis. In the patient with previous radiation, a Martius flap was also performed. Length of stay ranged from 1-2 days. Voiding cystourethrogram was performed in 5 patients at mean 16 days (median 14.5, range 14-24) after surgery with no anastomotic leaks seen. All patients passed voiding trials. Baseline and postoperative American Urologic Association Symptom Scores were available in 3 patients. Mean baseline score was 23 and mean postoperative score was 8, with score improvement meeting the minimum important difference in 3/3 patients. The patient with previous radiation had a postoperative partial vaginal incision opening not requiring intervention. There were no other postoperative complications within 30 days. One patient had recurrent frequency at 2.5 months that resolved after direct visual internal urethrotomy (DVIU). Another patient required urethral dilation at 4 months; this did not improve her symptoms and she underwent dorsal-onlay buccal graft urethroplasty at 9 months. No patients suffered de novo stress incontinence, renal deterioration or urinary retention.

Conclusion: Ventral buccal graft urethroplasty is a durable, effective surgical option for women with urethral strictures.
Introduction: Female urethral stricture disease is a rare and challenging clinical disease. The most common etiologies are traumatic injury, iatrogenic injury, and inflammatory disease resulting in periurethral fibrosis. We present our approach in the diagnosis and method of labial flap Urethroplasty in female patient with urethral strictures.

Methods: We performed urethral reconstruction using a rotational pedicle labial flap in female patients for posttraumatic urethral stricture. We will show how was the presentation, the approach for diagnosis including the video urodynamic diagnosis for such case, and the surgical treatment as a flap from the labia minora. The pedicle flap is rotated over the dorsally incised urethra.

Results: Normal micturition was obtained, and cystourethrography after 12 weeks showed a good urethral outline, without residual urine.

Conclusion: The rotational labial flap urethroplasty seems to be a reliable technique for the repair of urethral strictures.
Poster #NM168
VAGINAL CUFF PERFORATION DURING ROBOTIC ASSISTED MESH RECTOCOLPOPEXY
Philippe Zimmern, MD, Craig Olson, MD and Carlos Finsterbusch, MD
UT Southwestern Medical Center
Presented By: Philippe E. Zimmern, MD, FACS, FPMRS

Introduction: To report on the management of a vaginal cuff perforation during a robotic assisted mesh recto colpopexy and sacrocolpopexy for vault and posterior compartment prolapses associated with symptomatic rectal intussusception.

Methods: A 73-year-old Caucasian, Non-Hispanic female, G3 P3, complaining of vaginal bulge and constipation with need for manual splinting was evaluated for prolapse repair. She had a history of abdominal hysterectomy and Burch colposuspension in 1990, followed by urethrolysis and vaginal repair of stage 3 cystocele a decade later. Pelvic exam demonstrated a well-supported urethra (Aa -3), no cystocele but a significant posterior compartment bulge (Ap -2, Bp 0). MRI defecography reported moderate enterocele extending into the rectovaginal space, moderate rectocele with distal bulge along the posterior vaginal wall and partial rectal intussusception with full-thickness invagination of the posterior wall and partial thickness invagination of the anterior wall. A combined repair with robotic mesh sacrocolpopexy to address her rectocele and enterocele defects, as well as a rectopexy, was considered.

Results: The dissection of the enterocele, posterior vaginal wall and vaginal cuff were performed uneventfully. An Atrium mesh was prepared and positioned in the pelvis via the assistant port. The mesh was secured to the posterior vaginal wall distally on the left side. As we were preparing for the placement of the contralateral suture and the EEA clamp was oriented upwards to expose the posterior vaginal wall, the vaginal cuff split open and the EEA clamp became fully exposed at the bottom of the pelvic cavity.
At that point due to the risk of contamination, the multidisciplinary team decided to not use mesh. The vaginotomy was closed with running and interrupted absorbable sutures, the mesh was removed, and the enterocele defect was repaired by approximating the right and left wings of the peritoneum flaps on each side of the dissected rectum over the midline using running 3-0 V-Loc sutures. This peritoneal closure was done after a direct suture rectopexy to the promontory and just over the tented rectum to adequately close the pouch of Douglas, and efface the enterocele defect.

Conclusion: At 18 months follow-up, normal vaginal POPQ points were noted along with relief in the vaginal bulging sensation and some residual constipation easily

Financial Funding: none
## Alphabetical Index of Presenters

*Author/presenter, Date Time, and Abstract Placement*

Due to time limitations, authors who do not have a time and date listed will not be presenting their abstracts at this meeting.

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<tr>
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