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*Basic Science Poster Session I (Non-Moderated)

Tuesday, February 26, 2019
5:20 p.m. – 7:30 p.m.
Judges: Christopher J. Chermansky, MD
        Yingchun Zhang, PhD
*Not CME Accredited.

**Poster #BS1**
AN EXTERNAL COMPRESS-RELEASE PROTOCOL INDUCES DYNAMIC ELASTICITY IN A WORKING PORCINE BLADDER MODEL*
Andrea Balthazar1, Zachary Cullingsworth2, Naveen Nandanan1, Uzoma Anele1, John Speich2, Adam Klausner1
1Virginia Commonwealth University Department of Surgery, Division of Urology, Richmond, VA, 2Department of Mechanical Nuclear Engineering, Virginia Commonwealth University College of Engineering
Presented By: Andrea Balthazar, MD
*2019 Basic Science Essay Award Winner

**Poster #BS2**
DEVELOPMENT OF A STRESS-INDUCED PELVIC PAIN MODEL IN C57BL/6 MICE USING FORCED SWIM STRESS
Maria Payne, H. Henry Lai, MD
Washington University School of Medicine
Presented By: H. Henry Lai, MD

**Poster #BS3**
A MURINE MODEL OF CHRONIC SACRAL NEUROMODULATION USING THE OPTOGENETIC TECHNIQUE
Shannon L. Wallace, MD1, Mason A. Briggs, BS1, Yan Wen, MD1, Kate Montgomery, PhD2, Amy D. Dobberfuhl, MD, MS3, Guobing Zhuang, MD, PhD1, Edward C. Diaz, MD3, Scott Delp, PhD2, Bertha Chen, MD1
1Stanford University Hospital, Department of Obstetrics and Gynecology, Stanford, CA, 2Stanford University, Departments of Bioengineering and Mechanical Engineering, 3Stanford University Hospital, Department of Urology, Stanford, CA
Presented By: Shannon L. Wallace, MD

**Poster #BS4**
CAN MULTIPAROUS AND AGING RABBITS SERVE AS A MODEL TO STUDY PELVIC FLOOR DYSFUNCTION IN WOMEN?
Ana Hernandez-Reynoso, MS1,2, Aswini Kanneganti, PhD1,2, Kenia Lopez-Garcia, PhD2, Dora Corona-Quintanilla, PhD2, Francisco Castelan, PhD3,4, Philippe Zimmern, MD2,5, Margarita Martinez-Gomez, PhD3,4, Mario Romero-Ortega, PhD1,2,6
1Department of Bioengineering, University of Texas at Dallas, Richardson, TX, USA, 2Department of Surgery, UT Southwestern, Dallas, TX, USA, 3Departamento de Biologia Celular y Fisiologia: Unidad Foranea Tlaxcala, Instituto de Investigaciones Biomedicas UNAM, Tlaxcala, MEX, 4Centro Tlaxcala de Biologia de la Conducta, Universidad Autonoma de Tlaxcala, Tlaxcala, MEX, 5Department of Urology, UT Southwestern, Dallas, TX, USA, 6Department of Health Sciences, UT Southwestern, Dallas, TX, USA
Presented By: Ana Hernandez-Reynoso, M.Sc.

**Poster #BS5**
LIQUID CRYSTAL ELASTOMERS AS DYNAMIC MATERIALS FOR THE TREATMENT OF INCONTINENCE
Julia Henricks1, Cedric Ambulo1, Mario Romero-Ortega, PhD1, Philippe Zimmern, MD2, Taylor Ware, PhD1
1Biomedical Engineering, The University of Texas at Dallas, 2Department of Urology, UT Southwestern Medical Center
Presented By: Julia Henricks

**Poster #BS6**
OPTIMIZING THE NANOPARTICLE ENHANCED ADHESION OF MUSSEL INSPIRED HYDROGELS FOR TISSUE INTERFACING
Nikhil Pandey, PhD1, Andres Urias1, Valinda Jones, MS1, Serkan Yaman, MS1, Amirhossein Hakamivala, MS1, Boris Rodionov, MS1, Jun Liao, PhD1, Philippe Zimmern, MD2, Kytai Nguyen, PhD1, Yi Hong, PhD1
1Department of Bioengineering, University of Texas at Arlington, 2Urology, UT Southwestern Medical Center
Presented By: Nikhil Pandey, PhD
ABSTRACT LISTING

Poster #BS7  EXPRESSION PROFILE OF PLATELET-DERIVED GROWTH FACTOR RECEPTOR A (PDGFRα+)-MEDIATED GENESETS DIFFERENTIATES INTERSTITIAL CYSTITIS
Tong Zhou1, Haeyeong Lee1, Qi Chen1, Kenton Sanders2, Sang Don Koh1
1University of Nevada Reno, Department of Physiology and Cell Biology, 2University of Nevada Reno, Department of Physiology and Cell Biology
Presented By: Tong Zhou, PhD

Poster #BS8  INCIDENCE AND MORBIDITY OF RADIATION-INDUCED HEMORRHAGIC CYSTITIS IN PROSTATE AND BLADDER CANCER
Sarah E. Martin1, Evan Begun1, Eginal Samir2, Mohammed Azaiza3, Mazen Abdelhady4
1Detroit Medical Center Detroit, MI, 2Wayne State University Detroit, MI, 3Lake Erie College of Osteopathic Medicine Bradenton, FL
Presented By: Sarah E. Martin, DO

Poster #BS9  CYCLO-OXYGENASE 2 (COX-2) DETECTION IN BLADDER BIOPSIES OF POST-MENOPAUSAL WOMEN WITH RECURRENT URINARY TRACT INFECTIONS
Amy Kuprasertkul, BA1, Nicole J. DeNisco, BS, PhD2,3, Kim Orth, BS, MS2,3,4, Philippe Zimmern, MD1
1Department of Urology, UT Southwestern Medical Center, 2Department of Molecular Biology, UT Southwestern Medical Center, 3Howard Hughes Medical Institute, 4Department of Biochemistry, UT Southwestern Medical Center
Presented By: Amy Kuprasertkul, BS

Poster #BS10  PROSTAGLANDIN E2 (PGE2) IN URINE OF POST-MENOPAUSAL WOMEN WITH RECURRENT URINARY TRACT INFECTIONS FOR MONITORING OF URINARY TRACT INFECTION EVOLUTION
Amy Kuprasertkul, BA1, Nicole J. DeNisco, BS, PhD2,3, Kim Orth, BS, MS, PhD2,3,4, Philippe Zimmern, MD1
1Department of Urology, UT Southwestern Medical Center, 2Department of Molecular Biology, UT Southwestern Medical Center, 3Howard Hughes Medical Institute, 4Department of Biochemistry, UT Southwestern Medical Center
Presented By: Amy Kuprasertkul, BS

Poster #BS11  HISTOPATHOLOGICAL SCORING OF CHRONIC AND ACUTE INFLAMMATION IN THE BLADDER WALL DURING RECURRENT URINARY TRACT INFECTION (RUTI)
Nicol De Nisco, BS, PhD1,2, Jason Mull, PhD3, Kim Orth, BS, MS, PhD2,3,4, Philippe Zimmern, MD5
1Department of Molecular Biology, UT Southwestern Medical Center, 2Department of Pathology, UT Southwestern Medical Center, 3Howard Hughes Medical Institute, 4Department of Biochemistry, UT Southwestern Medical Center, 5Department of Urology, UT Southwestern Medical Center
Presented By: Nicole De Nisco, BS, PhD

Poster #BS12  URINE METABOLOMICS AND RAPID BACTERIAL GROWTH
Larry Reitzer, BS, PhD3, Philippe Zimmern, MD2
1Department of Biological Sciences, University of Texas at Dallas, 2Department of Urology, UT Southwestern Medical Center
Presented By: Larry Reitzer, BS, PhD

Poster #BS13  CHRONIC MONITORING OF VOIDING FUNCTION IN A NOVEL MODEL OF DETRUSOR UNDERACTIVITY
Eric Gonzalez1, Michael Odom2, Johanna Hannan2, Warren Grill1
1Duke University, Durham NC, 2East Carolina University, Greenville NC
Presented By: Eric Gonzalez, PhD

Poster #BS14  EFFECT OF TIBIAL NEUROMODULATION ON MULTIPLE SHEEP BREEDS
Thaddeus Brink1, Katie Bittner1, Tina Billstrom2, Mattson Melissa2, Zipel Lance1
1Research Core Technology, Pelvic Health and Gastric Therapies, Restorative Therapies Group Implantables, Medtronic, Inc., Minneapolis, MN, 2Physiological Research Laboratories, Medtronic, Inc., Minneapolis, MN
Presented By: Kaite Bittner, PhD
Poster #BS15  TRAUMATIC BRAIN INJURY-RELATED VOIDING DYSFUNCTION IN MICE IS CAUSED BY DAMAGE TO ROSTRAL PATHWAYS, ALTERING INPUTS TO THE REFLEX PATHWAYS
Ian Bryce MacIver1, Onder Albayram2, John Mathai1, Anne M.J. Verstegen3, Xiao Zhou2, Kun Ping Lu2, Mark Zeidel1
1Nephrology Division, Department of Medicine, Beth Israel Deaconess Medical Center, Boston, MA 02215, 2Hematology and Oncology Division, Department of Medicine, Beth Israel Deaconess Medical Center, Boston, MA 02215, 3Endocrinology Division, Department of Medicine, Beth Israel Deaconess Medical Center, Boston, MA 02215
Presented By: Ian Bryce MacIver, PhD

Poster #BS16  SAFETY AND MECHANISM OF ACTION OF ENERGY-BASED DEVICES FOR THE TREATMENT OF UROGYNECOLOGICAL CONDITIONS
Maria Canter, MD, FPMRS, FACOG, MSC1, Steven Lathers, PhD2, Kathryn Husarek, PhD2, Debbie Wilkerson, PhD2, Stacie Bell, PhD2
1Urogynecology Center NoVa, 2Viveve
Presented By: Maria Canter, MD, FPMRS, FACOG, MSC

Poster #BS17  EPIGENOMIC MODIFICATION AS A MECHANISM OF HYPERGLYCEMIC MEMORY IN THE DIABETIC BLADDER
Kelvin Davies, Professor, Yi Wang, Instructor
Albert Einstein College of Medicine
Presented By: Kelvin Paul Davies, MSc, PhD

Poster #BS18  PATIENT AND UROLOGIST INTERACTIONS: SEXUAL HARASSMENT A SURVEY AMONG UROLOGISTS
Pansy Uberoi1, Forrest Jellison2, Kuwong Mwamukonda2, Thomas Novak2
1San Antonio Uniformed Services Health Education Consortium, 2San Antonio Uniformed Services Health Education Consortium
Presented By: Pansy Uberoi, MD, MPH

Poster #BS19  WITHDRAWN

Poster #BS20  AMBULATORY AND EX-VIVO EFFECT OF INTRADETRUSOR iPSC-DERIVED HUMAN PROGENITOR SMOOTH MUSCLE CELLS IN A RAT MODEL OF RADIATION INDUCED BLADDER DYSFUNCTION
Amy D. Dobberfuhl, MD, MS1, Mason A. Briggs, BS2, Shannon L. Wallace, MD2, Yan Wen, MD2, Yingying Zhou, MD2, Edward E. Graves, PhD3, Edward C. Diaz, MD1, Bertha Chen, MD2
1Stanford University, Dept. of Urology, 2Stanford University, Dept. of Obstetrics and Gynecology, 3Stanford University, Dept. of Radiation Oncology
Presented By: Amy D. Dobberfuhl, MD, MS

Poster #BS21  FACTORS AFFECTING TEMPORAL CHANGES IN PANNEXIN 1 CHANNEL EXPRESSION IN THE DIABETIC BLADDER
Shirly Solouki, MD1, Marcia Urban-Maldonado, BS2, Melissa Laudano, MD2, Sylvia Suadicani, PhD3
1Albert Einstein College of Medicine/Montefiore Medical Center Department of OB/GYN, 2Albert Einstein College of Medicine/Montefiore Medical Department of Urology, 3Albert Einstein College of Medicine/Montefiore Medical Center Department of Urology
Presented By: Shirly Solouki, MD
<table>
<thead>
<tr>
<th>Time</th>
<th>#</th>
<th>Title</th>
<th>Authors</th>
<th>Institution</th>
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<tbody>
<tr>
<td>11:15 a.m.</td>
<td>#1</td>
<td>EXCITATORY AFFERENTS TO PONTINE MICTURITION CENTER NEURONS PROMOTE MICTURITION</td>
<td>Anne M.J. Verstegen, Lin Zhu, Nataliya Klymko, Elda Arrigoni, Patrick Fuller, Joel Geerling, Mark Zeidel</td>
<td>BIDMC Medicine Dept./ Harvard Med. School, BIDMC Neurology Dept./ Harvard Med. School, Dept. of Neurology, University of Iowa Carver College of Medicine</td>
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<tr>
<td>11:27 a.m.</td>
<td>#3</td>
<td>QUANTIFICATION OF CEREBRAL BLOOD FLOW DURING BLADDER FILLING IN HEALTHY SUBJECTS</td>
<td>Justina Tam, Kenneth Wengler, Jason Kim, Xiang He, Steven Weissbart</td>
<td>Stony Brook Medicine, Department of Urology, Stony Brook University Department of Biomedical Engineering, Stony Brook Medicine, Department of Radiology</td>
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<tr>
<td>11:33 a.m.</td>
<td>#4</td>
<td>OPTOGENETIC INHIBITION OF NEURONS EXPRESSING CORTICOTROPIN-RELEASING HORMONE (CRH) IN BARRINGTON'S NUCLEUS FACILITATES MICTURITION</td>
<td>Jason Van Batavia, Stephan Butter, Joanna Fesi, Stefano Vicini, Stephen A. Zderic</td>
<td>Children's Hospital of Philadelphia, Philadelphia, Georgetown University Medical Center, Washington DC</td>
</tr>
<tr>
<td>11:45 a.m.</td>
<td>#6</td>
<td>TEMPORAL DYNAMICS OF THE GENITOURINARY MICROBIOME</td>
<td>Victoria C.S. Scott, Lauren W. Thum, James E. Ackerman, Muhammed Umair Khalique, Karen S. Elber, Jennifer T. Anger, David M. Underhill, A. Lenore Ackerman</td>
<td>Department of Urology, David Geffen School of Medicine at UCLA, Los Angeles, CA, Urology Specialists, Sioux Falls, SD, Division of Urology, Cedars Sinai Medical Center, Beverly Hills, CA, Biomedical Sciences and Translational Medicine, Cedars Sinai Medical Center, Beverly Hills, CA</td>
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<tr>
<td>11:51 a.m.</td>
<td>#7</td>
<td>LOSS OF BETA1-INTEGRIN DISRUPTS FOCAL ADHESIONS AND MUSCARINIC SIGNALING REQUIRED FOR SMOOTH MUSCLE CONTRACTION IN MOUSE BLADDER</td>
<td>Lanlan Zhang, Erica Bien, Sarah Hanif, Bryce MacIver, Mark Zeidel, Weiqun Yu, Warren Hill</td>
<td>Dept. of Medicine, Beth Israel Deaconess Medical Center, Harvard Medical School, Boston, MA</td>
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<tr>
<td>11:57 a.m.</td>
<td>#8</td>
<td>TRPM4 CHANNEL INHIBITORS 9-PHENATHROL AND GLIBENCLAMIDE DECREASE GUINEA PIG DETRUSOR SMOOTH MUSCLE EXCITABILITY AND CONTRACTILITY</td>
<td>John Malysz, PhD, Sarah Maxwell, BSc, Viktor Yarotskyy, PhD, Georgi V. Petkov, PhD</td>
<td>College of Pharmacy, Univ. Tennessee Health Science Center, Memphis TN</td>
</tr>
</tbody>
</table>
12:03 p.m.  #9  PURINERGIC RECEPTORS P2Y12 AND A2B ANTAGONISTICALLY REGULATE BLADDER FUNCTION
Yuan Hao¹, Lu Wang¹, Huan Chen¹, Theodore Gartner², Warren Hill¹, Simon Robson¹, Mark Zeidel¹, Weiqun Yu¹
¹Beth Israel Deaconess Medical Center, ²University of Memphis
Presented By: Weiqun Yu, PhD

12:09 p.m.  #10  URINARY TIMP-2 IS SIGNIFICANTLY ASSOCIATED WITH POOR BLADDER COMPLIANCE AND UPPER URINARY TRACT DAMAGE IN ADULT PATIENTS WITH SPINA BIFIDA
Benoit Peyronnet, MD¹, Claire Richard, MD¹, Claude Bendavid, MD¹, Florian Naudet, MD¹, Juliette Hascoet, MD¹, Charlène Brochard, MD¹, Nelly Senal, MD¹, Quentin Alimi, MD¹, Zine-eddine Khene, MD¹, Anne Cortu, MD¹, Bruno Clément, MD, PhD¹, Laurent Siproudhis, MD, PhD¹, Guillaume Bouguen, MD, PhD¹, Jacques Kerdraon, MD¹, Andrea Manunta, MD¹, Xavier Gamé, MD, PhD²
¹University of Rennes, ²University of Toulouse
Presented By: Benoit Peyronnet, MD
Basic Science Poster Session II (Non-Moderated)
Wednesday, February 27, 2019
4:45 p.m. – 6:55 p.m.

Judges:  Adonis K. Hijaz, MD
John P. Lavelle, MB, FRCSI.

*Not CME Accredited. Wine and Cheese will be served.

Poster #BS23
DEVELOPMENT OF AN EX VIVO FUNCTIONAL PIG BLADDER MODEL FOR THE QUANTIFICATION OF ACUTE DYNAMIC ELASTICITY
Naveen Nandanan, MD1, Zach Cullingsworth, BSc2, Andrea Balthazar, MD1, Natalie Swavely, MD1, Adam Klausner, MD1, John Speich, PhD2
1Department of Surgery/Division of Urology, Virginia Commonwealth University School of Medicine, Richmond, Virginia, 2Department of Mechanical and Nuclear Engineering, Virginia Commonwealth University School of Engineering, Richmond, Virginia
Presented By: Naveen Nandanan, MD

Poster #BS24
LOCALIZATION AND EXPRESSION OF EXTRACELLULAR MATRIX COMPONENTS VERSICAN AND HYALURONAN IN URETHRAL AND VAGINAL TISSUES IN HUMAN SPECIMENS AND IN RAT MODEL OF URINARY INCONTINENCE
Ingrid Harten1, Stephen Evanko1, Jay Choe2, Eugene Lee3, Marika Bogdani1, Thomas Wight1, Una J. Lee4
1Matrix Biology Program, Benaroya Research Institute at Virginia Mason, 2Naval Medical Center, 3Kaiser Permanente, 4Section of Urology, Virginia Mason
Presented By: Una J. Lee, MD, FPMRS

Poster #BS25
VOLUNTARY EXERCISE IMPROVES VOIDING FUNCTION AND BLADDER HYPERALGESIA IN AN ANIMAL MODEL OF STRESS-INDUCED VISCERAL HYPERSENSITIVITY
Melissa T. Sanford1, Jih Chao Yeh2, Jackie Mao2, Rong Zhang2, Zhuo Wang3, Daniel Holschneider2, Larissa Rodriguez2
1Texas Tech University Health Sciences Center, 2University of Southern California
Presented By: Melissa T. Sanford, MD

Poster #BS26
MRI SHOWS BLADDER WALL THICKNESS AND DETRUSOR MUSCLE VOLUME INCREASE IN ASSOCIATION WITH AGE-DEPENDENT INCREASE IN PROSTATE VOLUME
Lucille Anzia1, Shane Wells2, Wade Bushman1, Alejandro Roldan-Alzate3
1Department of Urology - UW Madison, 2Department of Radiology - UW Madison
Presented By: Alejandro Roldan-Alzate, PhD

Poster #BS27
COMPARISON OF ARTIFICIAL FINGER MEASUREMENTS OF CONTROL AND PROLAPSED ANTERIOR VAGINAL WALL TISSUE IN OPERATING ROOM AND CLINIC SETTINGS
Connie N. Wang1, Alana Christie, MS1, Michael Abraham, MS2, Christopher Abrego, PhD2, Panos Shiakolas, PhD2, Philippe E. Zimmern, MD1
1UT Southwestern, Dallas, TX, 2UT Arlington, Arlington, TX
Presented By: Connie N. Wang

Poster #BS28
EFFECT OF WHOLE FRUIT CRANBERRY ON URINARY PROANTHOCYANIDIN METABOLITES IN WOMEN
Katherine Amin1, Lynn Stothers2, Ying Liu2, Paula N. Brown2, Dena Moskowitz1, Alvaro Lucioni1, Kathleen C. Kobashi1, Una J. Lee1
1Virginia Mason Medical Center, 2University of British Columbia
Presented By: Katherine Amin, MD

Poster #BS29
SURFACE MOTILITY IN NONPATHOGENIC ESHERICHA COLI AND STRAINS ISOLATED FROM WOMEN WITH RECURRENT URINARY TRACT INFECTIONS
Sankalya Ambagaspithye, MS1, Parker McDill, MS1, Jacob Hogins1, Sushmita Sudarshan, MS1, Philippe Zimmern, MD2, Larry Reitzer, BS, PhD1
1Department of Biological Sciences, University of Texas at Dallas, 2Department of Urology, UT Southwestern Medical Center
Presented By: Sankalya Ambagaspithye, MS
Poster #BS30  
**METABOLIC REQUIREMENTS FOR UROPATHOGENIC ESCHERICHIA COLI DURING URINARY TRACT INFECTIONS**  
Larry Reitzer, BS, PhD¹, Philippe Zimmern, MD²  
¹Department of Biological Sciences, University of Texas at Dallas, ²Department of Urology, UT Southwestern Medical Center  
Presented By: Larry Reitzer, BS, PhD

Poster #BS31  
**THE PARADOX OF RAPID GROWTH AND INDUCTION OF STRESS RESPONSES OF UROPATHOGENIC ESCHERICHIA COLI: INDUCTION OF THE NITROGEN-REGULATED (NTR) RESPONSE**  
Karthik Urs, BS, MS¹, Philippe Zimmern, MD², Larry Reitzer, BS, PhD¹  
¹Department of Biological Sciences, University of Texas at Dallas, ²Department of Urology, UT Southwestern Medical Center  
Presented By: Karthik Urs, BS, MS

Poster #BS32  
**THE ASYMPTOMATIC BLADDER: GROSS AND HISTOLOGICAL FINDINGS IN A SERIES OF PATIENTS**  
Mason Briggs, BS¹, Yan Wen, MD¹, GuoBing Zhuang, MD¹, Chia-Sui Kao, MD², Shannon L. Wallace, MD¹, Amy D. Dobberfuhl, MD, MS³, Bertha Chen, MD¹, Edward C. Diaz, MD³  
¹Stanford University School of Medicine, Department of Obstetrics and Gynecology, ²Stanford University School of Medicine, Department of Pathology, ³Stanford University School of Medicine, Department of Urology  
Presented By: Mason Briggs, BS

Poster #BS33  
**VOIDING BEHAVIOR CHANGES IN A MURINE MODEL OF CHRONIC UTI IS CORRELATED TO URINARY BACTERIAL LOAD AND INFLAMMATORY CYTOKINES/CHEMOKINES**  
Kejia Zhu, MD¹, Patrick Popiel, MD², Warren Hill, PhD², Toby C. Chai, MD²  
¹Qilu Hospital of Shandong University, ²Yale School of Medicine, Dept. Ob/Gyn/Reproductive Sciences. ³Beth Israel Deaconess Med Ctr / Harvard Medical School, ⁴Yale School of Medicine, Dept. of Urology, New Haven, CT  
Presented By: Toby C. Chai, MD

Poster #BS34  
**NEURAL PLASTICITY AND BLADDER OUTLET OBSTRUCTION IN MICE**  
Anne M.J. Verstegen¹, John Mathai¹, Reina Kobayashi¹, Nataliya Klymko¹, Weiqun Yu¹, Ian Maciver¹, Veronique VanderHorst², Mark Zeidel³  
¹BIDMC Medicine Dept./ Harvard Med. School, ²BIDMC Neurology Dept./ Harvard Med. School  
Presented By: Anne M.J. Verstegen, PhD

Poster #BS35  
**STRESS-INDUCED REEMERGENCE OF EXTINGUISHED BLADDER PAIN**  
Vijay K. Samineni, Sienna Sewell, Julian Sakey, Robert Gereau  
Washington University in St Louis  
Presented By: Vijay K. Samineni, PhD

Poster #BS36  
**QUANTITATIVE ELECTROENCEPHALOGRAPHY AS A MEANS OF CHARACTERIZING BRAIN ACTIVITY DURING THE MICTURITION CYCLE**  
Evgeniy I. Kreydin¹, Po T. Wang², An Do², Charles Liu¹, Zoran Nenadic²  
¹University of Southern California, ²University of California, Irvine  
Presented By: Evgeniy I. Kreydin, MD

Poster #BS37  
**COLLABORATING FOR THE ADVANCEMENT OF INTERDISCIPLINARY RESEARCH IN BENIGN UROLOGY: THE ROLE OF THE O’BRIEN UROLOGY COOPERATIVE RESEARCH CENTERS PROGRAM**  
Kristina L. Penniston, PhD, RDN, FAND, Tamara Bavendam, MD, MS, Chris Mullins, PhD NIDDK  
Presented By: Kristina L. Penniston, PhD, RDN, FAND

Poster #BS38  
**TRANSCRIPTOMIC ANALYSIS OF BLADDER PDGFRα+ CELLS IN EARLY DIABETIC BLADDER**  
Tong Zhou, Haeyeong Lee, Kenton Sanders, Sang Don Koh  
University of Nevada Reno, Department of Physiology and Cell Biology  
Presented By: Tong Zhou, PhD
Poster #BS39  EFFECT OF KG7656 LIQUID FORMULATION ("VESIX") ON HUMAN UROPATHOGENIC ESCHERICHIA COLI STRAINS
Valerie J. Price, MD1, Kelli L. Palmer, PhD1, Nicole J. DeNisco, BS, PhD2,3, William Randolph Warner, Principal Managing Member4, Philippe Zimmern, MD5
1Department of Biological Sciences, University of Texas at Dallas, 2Department of Molecular Biology, UT Southwestern Medical Center, 3Howard Hughes Medical Institute, 4US-BioPharma, 5Department of Urology, UT Southwestern Medical Center
Presented By: Valerie J. Price, MD

Poster #BS40  ANTAGONISM OF CORTICOTROPIN-RELEASING FACTOR RECEPTOR 1 PREVENTS WATER AVOIDANCE STRESS-INDUCED BLADDER HYPERSENSITIVITY IN FEMALE MICE THAT UNDERWENT NEONATAL MATERNAL SEPARATION
Xiaofang Yang1, Alison Greenlief1, Julie Christianson1,2
1University of Kansas Medical Center, Department of Anatomy and Cell Biology, 2Department of Anesthesiology
Presented By: Julie Christianson, PhD

Poster #BS41  ROLE OF INSULIN RECEPTOR-MEDIATED SIGNALING IN DIABETIC BLADDER DYSFUNCTION
Huan Chen, Xiang Xie, Mark Zeidel, Weiqun Yu
Beth Israel Deaconess Medical Center
Presented By: Huan Chen

Poster #BS42  HUMAN MESENCHYMAL STEM CELLS SECRETOME IS POTENTIALLY SAFE FOR POSTPROSTATECTOMY INCONTINENCE WITH A RESIDUAL TUMOUR (INVITRO MODEL)
Ahmad O. Khalifa, Ilaha Isali, Sanjeev Shukla, Lee Ponsky, Adonis Hijaz
Department of Urology, University Hospitals Cleveland Medical Center, Case Western Reserve University, Cleveland, OH.
Presented By: Ahmad O. Khalifa, MD, PhD

Poster #BS43  PRIMARY CULTURE OPTIMIZATION AND IN-VITRO CHARACTERIZATION OF UROTHELIAL CELLS
Mason Briggs, BS1, Yan Wen, MD1, GuoBing Zhuang, MD1, Amy D. Dobberfuhl, MD, MS2, Shannon L. Wallace, MD1, Bertha Chen, MD1, Edward C. Diaz, MD2
1Stanford University School of Medicine, Department of Obstetrics and Gynecology, 2Stanford University School of Medicine, Department of Urology
Presented By: Mason Briggs, BS
IC/Pelvic Pain/Geriatrics/BPH Podium Session
Thursday, February 28, 2019
1:00 p.m. – 2:20 p.m.
Moderators: Tamsin J. Greenwell, MBChB, MD FRCS(Urol)
Kamran P. Sajadi, MD

1:00 p.m. #1
THE UTILIZATION OF PROSTATIC AND BLADDER MEDICATIONS AFTER TRANSURETHRAL PROSTATE SURGERY
Blayne Welk¹, Jeffrey Campbell¹, Jennifer Reid², Michael Ordon³
¹Western University, ²ICES Western, ³University of Toronto
Presented By: Blayne Welk, MD, MSc

1:10 p.m. #2
THE LEARNING CURVE FOR GREEN LASER ENUCLEATION OF THE PROSTATE (GreenLEP): A MULTI-INSTITUTIONAL STUDY OF 584 CASES.
Benoit Peyronnet, MD¹, Enrique Rijo, MD², Vincent Misrai, MD³, Shahin Tabatabaei, MD³, Giovanni Ferrarri, MD⁴, Ferando Gomez-Sancha, MD⁵
¹University of Rennes, ²Barcelona Private Hospital, ³Clinique Pasteur Toulouse, ⁴Massachusetts General Hospital, ⁵Modena Hospital, ⁶Clinica Centro Madrid
Presented By: Benoit Peyronnet, MD

1:20 p.m. #3
WHAT DO POSTMENOPAUSAL WOMEN WITH RECURRENT URINARY TRACT INFECTIONS EXPERIENCE? INSIGHTS FROM PATIENT FOCUS GROUPS
Victoria C.S. Scott¹, Taylor Sadun¹, Lauren W. Thum², Melissa Markowitz¹, David A. Haake¹, Sally L. Maliski¹, Jennifer T. Anger¹, Ja-Hong Kim¹
¹Department of Urology, David Geffen School of Medicine at UCLA, Los Angeles, CA, ²Urology Specialists, Sioux Falls, SD, ³School of Nursing, University of Kansas Medical Center, Kansas City, KS, ⁴Division of Urology, Cedars Sinai Medical Center, Beverly Hills, CA
Presented By: Taylor Sadun, MD

1:30 p.m. #4
THE IMPACT OF FRAILTY ON THE TREATMENT OF OVERACTIVE BLADDER IN OLDER ADULTS
Anne M. Suskind, MD, MS, FACS¹, Casey Kowalik, MD², Kathryn Quanstrom¹, John Boscardin, PhD¹, Shoujun Zhao, PhD¹, Stuart Reynolds, MD³, Kavita Mishra, MD³, Emily Finlayson, MD, MS³
¹UCSF, ²University of Kansas, ³Vanderbilt
Presented By: Anne M. Suskind, MD, MS, FACS

1:40 p.m. #5
CHRONIC EXPOSURE TO PENTOSAN POLYSULFATE SODIUM ASSOCIATED WITH PIGMENTARY RETINAL TOXICITY
Jenelle E. Foote, MD¹, Adam Hanif, BA², Nieraj Jain, MD²
¹Emory University School of Medicine, Department of Medicine, Department of Ophthalmology, Atlanta, GA, ²Emory University School of Medicine, Department of Ophthalmology, Atlanta, GA
Presented By: Jenelle E. Foote, MD

1:50 p.m. #6
WITHDRAWN

2:00 p.m. #7
PROSPECTIVE RANDOMIZED CONTROLLED TRIAL COMPARING THE EFFECT OF COMBINATION OF TRANSURETHRAL FULGURATION AND HYDRODISTENSION AND TRANSURETHRAL FULGURATION MONOTHERAPY IN INTERSTITIAL CYSTITIS/BLADDER PAIN SYNDROME
Hee Seo Son, MD, PhD¹, Hana Yoon², Jae Yup Hong³, Ju Tae Seo⁴, Jong Hyun Kim⁵, Jang Hwan Kim, MD, PhD¹
¹Yonsei University College of Medicine, ²Ewha Womans University, College of Medicine, ³CHA University College of Medicine, ⁴Dankook University College of Medicine, ⁵MizMedi Women's Hospital
Presented By: Hee Seo Son, MD, PhD

2:10 p.m. #8
OPIOID PRESCRIPTION USE IN PATIENTS WITH INTERSTITIAL CYSTITIS
Jacqueline M. Zillioux¹, C William Pike², Matthew Clements¹, David Rapp¹
¹University of Virginia School of Medicine, ²Georgetown University School of Medicine
Presented By: Jacqueline M. Zillioux, MD
LUTS/Voiding Dysfunction/Neurogenic Bladder Moderated Poster Session
Thursday, February 28, 2019
1:00 p.m. – 2:20 p.m.
Moderators: Zachery C. Baxter, MD
Arthur P. Mourtzinos, MD, MBA

Poster #M1

A NEW PARADIGM FOR OUTPATIENT DIAGNOSIS AND TREATMENT OF LOWER URINARY TRACT SYMPTOMS UTILIZING A MOBILE APP/SOFTWARE PLATFORM AND REMOTE PATIENT VISITS: FEASIBILITY STUDY

Jerry G. Blaivas, MD1,2,3, Michael W. Poon, MD4, Eric S.W. Li, BA2,3, Roni Manyevitch, BA3, Devon N. Thomas, BA2

1Department of Urology at the Icahn School of Medicine at Mount Sinai, 2SUNY Downstate College of Medicine, 3Institute for Bladder and Prostate Research, 4Kaiser Permanente

Presented By: Jerry G. Blaivas, MD

Poster #M2

LONGITUDINAL CHANGES IN SYMPTOM-BASED FEMALE AND MALE LUTS CLUSTER CHARACTERISTICS AND FACTORS ASSOCIATED WITH CHANGE

Cindy L. Amundsen1, Margaret E. Helmut2, Abigail R. Smith2, John O.L. DeLancey2, Catherine S. Bradley1, Kathryn E. Flynn1, Kimberly S. Kenton1, H. Henry Lai1, David Cell1a, James W. Griffith4, Victor P. Andreev2, Claire C. Yang3, J. Eric Jelovsek1, Kevin P. Weinfurt4, Alice B. Liu2, Matthew O. Fraser1, Ziya Kirkali and the LURN Study1

1Duke University Medical Center, 2Arbor Research Collaborative for Health, 3University of Michigan, 4University of Iowa Carver College of Medicine, 5Medical College of Wisconsin, 6Northwestern University Feinberg School of Medicine, 7Washington University School of Medicine, 8University of Washington, 9National Institute of Diabetes and Digestive and Kidney Diseases

Presented By: Cindy L. Amundsen, MD

Poster #M3

RELATIONSHIP BETWEEN SYMPTOM BOTHER AND SEVERITY IN INDIVIDUALS SEEKING CARE FOR LOWER URINARY TRACT SYMPTOMS (LUTS)

Nnenaya Q. Agochukwu1, Jonathan B. Wiseman2, Abigail R. Smith3, Margaret E. Helmut2, Kevin P. Weinfurt4, Aruna V. Sarma1, James W. Griffith4, David Cell1a, Anne P. Cameron1, Kathryn E. Flynn1, Bradley A. Erickson1, Ziya Kirkali1, Cindy L. Amundsen2, H. Henry Lai1, Meera Tavathia1, J. Quentin Clemens1

1University of Michigan, 2Arbor Research Collaborative for Health, 3Duke University Medical Center, 4Northwestern University Feinberg School of Medicine, 5Medical College of Wisconsin, 6University of Iowa, 7National Institute of Diabetes and Digestive and Kidney Diseases, 8Washington University School of Medicine

Presented By: Nnenaya Q. Agochukwu, MD

Poster #M4

GEOGRAPHIC VARIABILITY IN THIRD LINE OVERACTIVE BLADDER TREATMENT AVAILABILITY FOR MEDICARE PATIENTS: IS THIRD LINE THERAPY NEITHER HERE, NOR THERE?

Erin Salter, MD, Gillian Wolff, MD, Laura Chang-Kit, MD

Albany Medical Center

Presented By: Erin Salter, MD

Poster #M5

THE DEVELOPMENT OF THE NEUROGENIC BLADDER SYMPTOM SCORE SHORT FORM (NBSS-SF)

Blayne Welk1, John Stoffel2, Sean Elliott3, Sara Lehner4, Chong Zhang4, Jeremy Myers4

1Western University, 2University of Michigan, 3University of Minnesota, 4University of Utah

Presented By: Blayne Welk, MD MSc

Poster #M6

ADULT NEUROGENIC BLADDER PATIENTS ARE LIKELY TO BE ADMITTED AFTER AN EMERGENCY ROOM VISIT: ADMISSION RATES AND CLINICAL FINDINGS

Oluwarotimi S. Nettey, MD, MHS1, Alicia Roston, MD, MPH2, Richard Matulewicz, MD, MS1, Ashima Singal, MD1, Stephanie Kielb, MD1

1Department of Urology, Northwestern University Feinberg School of Medicine, Chicago, IL, 2Division of Urology, Cook County Health and Hospitals System, Chicago, IL

Presented By: Oluwarotimi S. Nettey, MD, MHS
Poster #M7  
**RATES OF BLADDER AUGMENTATION AFTER INTRODUCTION OF ONABOTULINUMTOXINA THERAPY IN THE NEUROGENIC BLADDER POPULATION**  
Rita P. Jen, Irene M. Crescenze, Paholo G. Babglio, Anne P. Cameron, Priyanka Gupta, John T. Stoffel, J. Quentin Clemens  
University of Michigan, Department of Urology, Ann Arbor, MI  
Presented By: Rita P. Jen, MD

Poster #M8  
**TRANSCUTANEOUS SPINAL CORD STIMULATION TO EFFECT LOWER URINARY TRACT ACTIVITY AFTER SPINAL CORD INJURY**  
Evgeniy Kreydin1,2, Parag Gad2, Hui Zhong2, Kyle Latack1,2, V. Reggie Edgerton3,2  
1University of Southern California, 2Rancho Los Amigos National Rehabilitation Center, 3University of California, Los Angeles  
Presented By: Evgeniy I. Kreydin, MD
*LUTS/Voiding Dysfunction/Neurogenic Bladder Non-Moderated Poster Session

*Not CME Accredited

Thursday, February 28, 2019
1:00 p.m. – 2:20 p.m.

**Poster #NM1**

**PROCESS FOR DEVELOPMENT OF TERMINOLOGY FOR MALE LOWER URINARY TRACT AND PELVIC FLOOR SYMPTOMS AND DYSFUNCTION**

Bernard Haylen¹, Sender Herschorn², Ajay Singla³, Howard Goldman⁴

¹University of New South Wales, ²University of Toronto, ³Massachusetts General Hospital, ⁴Cleveland Clinic

Presented By: Bernard Haylen, MB, BS, MD, FRANZCOG CU

**Poster #NM2**

**“I DON’T KNOW ANYONE WHO PEES ON THEMSELVES ON PURPOSE”: EXPLORING WOMEN’S AND ADOLESCENTS’ LAY DISCOURSE ABOUT BLADDER HEALTH AND FUNCTION**

Beverly R. Williams¹,², Jesse Nodora³, Diane K. Newman⁴, Lisa Kane Low⁵, Aimee S. James⁶, Deepa R. Camenga⁷, Jeni Hebert-Beirne⁸, Sonya S. Brady⁹, Cecilia T. Hardacker¹⁰, Kathryn L. Burgio¹,², for the PLUS Consortium¹¹

¹University of Alabama at Birmingham School of Medicine, ²Department of Veterans Affairs, ³University of California-San Diego, Moores Cancer Center, ⁴University of Pennsylvania Perelman School of Medicine, ⁵University of Michigan School of Nursing, Dept. of Obstetrics and Gynecology, ⁶Washington University School of Medicine, Division of Public Health Sciences, ⁷Yale University School of Medicine, Dept. of Emergency Medicine Pediatrics, ⁸University of Illinois at Chicago School of Public Health, ⁹University of Minnesota School of Public Health, ¹⁰Howard Brown Health, Chicago, IL, ¹¹National Institute of Diabetes and Digestive and Kidney Diseases, National Institutes of Health, Bethesda, MD

Presented By: Beverly R. Williams

**Poster #NM3**

**WITHDRAWN**

**Poster #NM4**

**CORRELATION OF SYMPTOM SEVERITY AND BOTHER IN INDIVIDUALS SEEKING CARE FOR LOWER URINARY TRACT SYMPTOMS**

Nnenaya Q. Agochukwu, MD¹, Jonathan B. Wiseman², Abigail R. Smith², Margaret E. Helmuth³, Kevin P. Weinfurt³, Aruna V. Sarma¹, James W. Griffith⁴, David Cellà⁴, Anne P. Cameron¹, Kathryn E. Flynn⁵, Bradley A. Erickson⁶, Ziya Kirkali⁷, Cindy L. Amundsen⁸, H. Henry Lai⁹, Meera Tavathia⁸, J. Quentin Clemens and the LURN Study¹⁰

¹University of Michigan, ²Arbor Research Collaborative for Health, ³Duke University Medical Center, ⁴Northwestern University Feinberg School of Medicine, ⁵Medical College of Wisconsin, ⁶University of Iowa, ⁷National Institute of Diabetes and Digestive and Kidney Diseases, ⁸Washington University School of Medicine

Presented By: Nnenaya Q. Agochukwu, MD

**Poster #NM5**

**OVERACTIVE BLADDER MEDICATION PRESCRIBING HABITS OF UROLOGISTS AND PRIMARY CARE PHYSICIANS**

Kevin J. Chua, BS¹, Gen Li, PhD², Matthew Rutman, MD³, Elias Hyams, MD³

¹SUNY Downstate Medical Center, Department of Urology, Brooklyn, NY, ²Columbia University, Department of Biostatistics, New York, NY, ³Columbia University Medical Center, Department of Urology, New York, NY

Presented By: Kevin J. Chua, BS
**Poster #NM6**  
**Cystectomy and Ileal Conduit for Neurogenic Bladder: Comparison of the Open, Laparoscopic and Robot-Assisted Approaches**  
Benoit Peyronnet, MD, Juliette Hascoet, MD, Lucas Frelton, MD, Zine-Eddine Khene, MD, Vivien Graffeuille, MD, Quentin Alimi, MD, Mehdi El-Akri, MD, Claire Richard, MS, Jacques Kerdraon, MD, Caroline Voiry, MD, Karim Bensalah, MD, Grégory Verhoest, MD, Isabelle Bonnan, MD PhD, Andrea Manunta, MD  
University of Rennes  
Presented By: Benoit Peyronnet, MD

**Poster #NM7**  
**Spinal Cord Injury Patients Performing Clean Intermittent Catheterization Have More Severe Bowel Symptoms Compared to Patients with Indwelling Catheter, Neurogenic Bladder Reconstruc**  
ction Surgery, or Voiding  
Paholo Barboglio Romo1, Iryna M. Crescenze1, Sara M. Lenherr2, Jeremy B. Myers2, Blayne Welk3, Sean P. Elliot4, Diana O'Dell5, Angela P. Presson2, John T. Stoffel1  
1Michigan Medicine, Ann Arbor, MI, 2University of Utah, Salt Lake City, UT, 3Western, University, London, Ontario, 4University of Minnesota, Minneapolis, MI  
Presented By: Iryna M. Crescenze, MD

**Poster #NM8**  
**The Role of Pubovaginal Sling in Women for Management of Urinary Incontinence in Neurogenic Bladder**  
Rachel Bergman, Iryna Crescenze, Anne Pelletier-Cameron  
University of Michigan Department of Urology  
Presented By: Rachel Bergman

**Poster #NM9**  
**Urological Outcome of Untethering Surgery for Patients of Occult Spinal Dysraphism Whose Initial Symptom Developed in Adulthood**  
Hee Seo Son, MD, PhD1, Hana Yoon2, Jae Yup Hong2, Ju Tae Seo2, Jong Hyun Kim3, Jang Hwan Kim, MD, PhD3  
1Yonsei University College of Medicine, 2Ewha Womans University College of Medicine, 3CHA University College of Medicine, 4Dankook University College of Medicine, 5MizMedi Women’s Hospital  
Presented By: Hee Seo Son, MD, PhD

**Poster #NM10**  
**Exploring the Bowel and Bladder Dysfunction Relationship in a Multiple Sclerosis Population**  
Dora K. Jericevic1, Benoit Peyronnet, MD1, Tope Rude2, Ekene Enemchukwu3, Ricardo Palmerola1, Rachel Sussman1, Dominique Pape1, Nirit Rosenblum1, Carrie Sammarco1, Lana Zhovtis-Ryerson1, Ilya Kister1, Jonathan Howard1, Lauren Krupp1, Benjamin Brucker1  
1NYU, 2USC, 3Stanford  
Presented By: Dora K. Jericevic

**Poster #NM11**  
**Outcomes of Intradetrusor Botulinum Toxin Injection in Patients with Parkinson’s Disease**  
Gregory Vurture1, Benoit Peyronnet2, Andrew Feigin3, Milton Biagino3, Rebecca Gilbert3, Nirit Rosenblum1, Steven Frucht4, Alessandro DiRocco5, Victor Nitti6, Benjamin Brucker5  
1Department of Urology, New York University School of Medicine, 2Department of Urology, University of Rennes, 3The Marlene Paolo Fresco Institute for Parkinson’s Movement Disorders, New York University School of Medicine, New York, USA  
Presented By: Gregory Vurture

**Poster #NM12**  
**Change in Bladder Specific Quality of Life in SCI Patients Managed with CIC Over Time**  
Iryna Crescenze1, Paholo Barboglio-Romo1, Sara Lenherr2, Jeremy Myers2, Blayne Welk3, Sean Elliot4, Diana O’Dell5, Angela Presson2, John Stoffel1  
1University of Michigan, 2University of Utah, 3Western University, 4University of Minnesota  
Presented By: Iryna Crescenze, MD
Poster #NM13

LOWER URINARY TRACT DYSFUNCTION IN PATIENTS WITH FAMILIAL DYSAUTONOMIA: A PROSPECTIVE STUDY
Benoit Peyronnet, MD1, Erin Barnes, MS2, Jose-Alberto Palma-Cardozo, MD1, Horacio Kaufmann, MD1, Benjamin Brucker, MD1
1New York University, 2New York University
Presented By: Benoit Peyronnet, MD

Poster #NM14

CAFFEINE AND OTHER BLADDER IRRITANT AVOIDANCE FROM THREE-DAY VOIDING DIARIES AMONG ADULTS WITH AND WITHOUT URGENCY INCONTINENCE
Anne P. Cameron1, Margaret E. Helmuth2, Abigail R. Smith2, H. Henry Lai2, Cindy L. Amundsen4, Ziya Kirkali2, Brenda W. Gillespie1, Claire C. Yang3, J. Quentin Clemens, and the LURN Study1
1University of Michigan, 2Arbor Research Collaborative for Health, 3Washington University School of Medicine, 4Department of Obstetrics and Gynecology, Duke University, 5National Institute of Diabetes and Digestive and Kidney Diseases, 6University of Washington
Presented By: Anne P. Cameron, MD, FPMRS

Poster #NM15

COMPARISON OF BLADDER VOIDING EFFICIENCY (BVE) IN WOMEN WHEN CALCULATED FROM A FREE FLOW (FF) OR AN INTUBATED FLOW (IF)
Françoise A. Valentini, MD, PhD1, Brigitte Marti, PT2, Gilberte Robain, MD, PhD3, Philippe Zimmerm, MD4, Pierre Nelson, PhD5
1Hôpital Rothschild, Paris France, 2Hôpital Saint Antoine Paris France, 3Hôpital Rothschild, Paris, France, 4UTSouthwestern, Dallas, TX, 5Hôpital Rothschild, Paris, France
Presented By: Françoise A. Valentini, MD, PhD

Poster #NM16

THE EFFECT OF A SHARP INCREASE IN ESTROGEN LEVELS ON OVERACTIVE BLADDER SYMPTOMS IN WOMEN UNDERGOING OVULATION INDUCTION
Asnat Groutz1, David Gordon1, Foad Azem1, Ronen Gold1, Mordechai Shimonov1, Hadar Amir1
1Lis Maternity and Women's Hospital, Tel Aviv Sourasky Medical Center, Sackler Faculty of Medicine, Tel Aviv University, Israel, 2E. Wolfson Medical Center, Sackler Faculty of Medicine, Tel Aviv University, Israel.
Presented By: Asnat Groutz, MD

Poster #NM17

IMPACTS OF RAPID DIAGNOSTIC TESTING IN THE MANAGEMENT OF URINARY TRACT INFECTION
Melissa Markowitz, BA1, Gabriel Monti, BS1,2, David Haake, MD1, Ja-Hong Kim, MD1
1Department of Urology, UCLA Medical Center, David Geffen School of Medicine at UCLA, Los Angeles, CA 90095, United States, 2John A. Burns School of Medicine at the University of Hawai‘i at Mānoa, Honolulu, HI 96813, United States
Presented By: Melissa Markowitz, BA

Poster #NM18

INCREASED TIME BETWEEN SCHEDULING DATE AND APPOINTMENT DATE FOR NEW-PATIENTS MAY CAUSE DECREASED UROLOGIST PRODUCTIVITY
Joseph M. Caputo, MD1, Elisabeth M. Sebesta, MD1, Christopher R. Haas, MD1, Gen Li, PhD2, Matthew Rutman, MD1, Kimberly L. Cooper, MD1
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: Joseph M. Caputo, MD

Poster #NM19

VALIDATION OF UPPER EXTREMITY MOTOR FUNCTION AS A KEY PREDICTOR OF BLADDER MANAGEMENT AFTER SPINAL CORD INJURY
Christopher S. Elliott1,2, John Stoffel3, Jeremy Myers4, Sara Lenherr5, Blayne Welk5, Sean Elliott6, Kazuko Shem7, for the Neurogenic Bladder Research Group
1Santa Clara Valley Medical Center Division of Urology, 2Stanford University Medical Center Department of Urology, 3University of Michigan Department of Urology, 4University of Utah Division of Urology, 5Western University Division of Urology, 6University of Minnesota Department of Urology, 7Santa Clara Valley Medical Center Department of Physical Medicine and Rehabilitation
Presented By: Christopher S. Elliott, MD, PhD
Poster #NM20  THE ROLE OF HEALTH INSURANCE IN PATIENT REPORTED SATISFACTION WITH BLADDER MANAGEMENT IN NEUROGENIC BLADDER
Tope Rude, Blayne Welk, Jeremy Myers, David Ginsberg
1USC Department of Urology, 2University of Western Ontario Department of Urology, 3University of Utah Department of Urology
Presented By: Tope Rude, MD

Poster #NM21  PRACTICE VARIABILITY OF PERIOPERATIVE ANTIBIOTIC PROPHYLAXIS FOLLOWING SACRAL NEUROMODULATION PROCEDURES: ANALYSIS OF A NATIONWIDE INSURANCE CLAIMS DATABASE
Christopher Riedinger, Richard Fantus, Casey Kowalik, Christopher Lyttle, W. Stuart Reynolds, Gregory Bales, Sarah Faris, Joshua A. Cohn
1University of Chicago, Section of Urology, Chicago, IL, 2University of Kansas, Department of Urology, Kansas City, MO, 3University of Chicago Institute for Translational Medicine, Chicago, IL
Presented By: Joshua A. Cohn, MD

Poster #NM22  COMBINATION THERAPIES FOR OVERACTIVE BLADDER: UNTAPPED OPPORTUNITIES?
Alex Kasman, Christopher S. Elliott
1Stanford University Medical Center Department of Urology, 2Santa Clara Valley Medical Center Division of Urology
Presented By: Christopher S. Elliott, MD, PhD

Poster #NM23  EXPECTANT LONG-TERM FOLLOW UP OF PATIENTS WITH NON-NEUROGENIC CHRONIC URINARY RETENTION
Alejandro Abello, MD, Jonathan Badin, MD, William DeWolf, MD, Anurag Das, MD
Beth Israel Deaconess Medical Center
Presented By: Alejandro Abello, MD

Poster #NM24  A LARGE-SCALE SOCIAL MEDIA ANALYSIS OF OVERACTIVE BLADDER POSTS: WHAT DO PATIENTS KNOW AND WANT TO KNOW?
Gabriela Gonzalez, Yuliya Zektser, Kristina Vaculik, Carine Khalil, Corey Arnold, Christopher V. Almario, MD, MSHPM, Brennan M.R. Spiegel, MD, MSHS, Jennifer T. Anger, MD, MPH
1David Geffen School of Medicine, University of California, Los Angeles, CA, 2Department of Surgery, Division of Urology, Cedars-Sinai Medical Center, Los Angeles, CA, 3Division of Health Services Research, Cedars-Sinai Medical Center, Los Angeles, CA, 4Cedars-Sinai Center for Outcomes Research and Education, Los Angeles, CA, 5Medical Imaging Informatics, Department of Radiology, UCLA, Los Angeles, CA, 6Division of Informatics, Cedars-Sinai Medical Center, Los Angeles, CA, 7Division of Digestive and Liver Diseases, Cedars-Sinai Medical Center, Los Angeles, CA
Presented By: Gabriela Gonzalez, BS
Male Incontinence/Urodynamics Moderated Podium Session
Thursday, February 28, 2019
5:00 p.m. – 6:30 p.m.
Moderators: Mauricio Plata, MD, MSc, FACS
David E. Rapp, MD

5:00 p.m.  #9 SYMPTOMATIC URINARY TRACT INFECTION AFTER URODYNAMICS: A RETROSPECTIVE COHORT ANALYSIS OF 250 CONSECUTIVE PATIENTS IN THE ABSENCE OF ANTIMICROBIAL PROPHYLAXIS
Cristina M. Fox, MD1,2, Brian Kim, MSIII1, Ali Omar, MSIII1, Rima Rana, MD1, Michelle Kim, MD1, Debra Fromer, MD1
1Hackensack University Medical Center, Department of Urology, 2New York Medical College, Department of Urology
Presented By: Cristina M. Fox, MD

5:10 p.m.  #10 URODYNAMIC FINDINGS IN PATIENTS WITH NOCTURIA: AN AGE- AND GENDER-MATCHED STUDY
Elisabeth M. Sebesta, MD, Joseph M. Caputo, MD, Dina Manasherova, BA, Carrie M. Aisen, MD, Doreen E. Chung, MD
Department of Urology, Columbia University Irving Medical Center, New York, NY
Presented By: Elisabeth M. Sebesta, MD

5:20 p.m.  #11 CHALLENGES DEFINING “NORMAL” IN MULTI-CHANNEL URODYNAMICS
Natalie Swavely, MD, John Speich, PhD, Naveen Nandanan, MD, Andrea Balthazar, MD, Adam Klausner, MD
Virginia Commonwealth University
Presented By: Natalie Swavely, MD

5:30 p.m.  #12 SLING REVISION FOR BLADDER OUTLET OBSTRUCTION IN WOMEN WITH PRIMARILY STORAGE SYMPTOMS: WHAT ARE THE BEST URODYNAMIC CRITERIA TO PREDICT OUTCOMES?
Christina Escobar, Benoit Peyronnet, MD, Rachael Sussman, Ricardo Palmerola, Nirit Rosenblum, Victor Nitti, Benjamin Brucker, Dominique Malacarne Pape
New York University
Presented By: Christina Escobar, MD

5:40 p.m.  #13 A NOVEL MOBILE UROFLOWMETRY APPLICATION FOR ASSESSING LOWER URINARY TRACT SYMPTOMS
Craig V. Comiter, MD1, Edward Belotserkovsky, PhD2
1Stanford University School of Medicine, 2BE Technologies
Presented By: Craig V. Comiter, MD

5:50 p.m.  #14 DIFFERENCES IN BLADDER SENSATION DESCRIPTORS IN PARTICIPANTS WITH OVERACTIVE Versus HEALTHY BLADDERs IDENTIFIED USING SENSATION METER DURING NON-INVASIVE HYDRATION STUDIES
Blessan Sebastian, BS1, Dhruv Sethi, MBA, MPH1, Anna S. Nagle, PhD2, Devina Thapa1, Naomi Vinod, BS1, Zachary Cullingsworth, BS2, Andrea Balthazar, MD1,2, Adam Klausner, MD1,3, John Speich, PhD2
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 Surgery Hunter Holmes McGuire Veterans Affairs Medical Center, Richmond, VA
Presented By: Andrea Balthazar, MD

6:00 p.m.  #15 DOES FEMALE PELVIC FLOOR MUSCLE STRENGTH EFFECT URODYNAMIC URETHRAL FUNCTION?
David Ossin, MD, Eric Hurtado, MD
Cleveland Clinic Florida, Section in Female Pelvic Medicine Reconstructive Surgery, Weston, FL
Presented By: David Ossin, MD
6:10 p.m.  #16  PREPAREDNESS FOR PROSTATECTOMY IMPACTS PATIENT-REPORTED POSTOPERATIVE URINARY OUTCOMES – 1 YEAR RESULTS
Bradley Gill, MD, MS¹,², Anna Faris, BS¹, Abhinav Khanna, MD, MPH¹, Anna Zampini, MD, MBA¹, Daniel Hettel, MD¹, Hadley Wood, MD¹, Edmund Sabanegh, MD¹
¹Cleveland Clinic, ²Cleveland Veterans Affairs Medical Center
Presented By: Bradley C. Gill, MD, MS

6:20 p.m.  #17  ASSESSMENT OF THE PERSISTENCE OF SEVERE URINARY INCONTINENCE IN A POST-OP RADICAL PROSTATECTOMY COHORT
Elizabeth I. Roger¹,², Lauren Green³, Kurt McCammon¹
¹Eastern Virginia Medical School, Norfolk, VA, ²Naval Medical Center Portsmouth, VA, ³Eastern Virginia Medical School Healthcare Analytics and Delivery Science Institute, Norfolk, VA
Presented By: Elizabeth I. Roger, MD
Female Urology/Incontinence Moderated Poster Session
Thursday, February 28, 2019
5:00 p.m. – 6:30 p.m.
Moderators: Maude Carmel, MD, FRCSC
Farzeen Firoozi, MD FACS

Poster #M9
COMPARISON OF OPEN AND ROBOT-ASSISTED ARTIFICIAL URINARY SPHINCTER IMPLANTATION IN FEMALE PATIENTS WITH STRESS URINARY INCONTINENCE: A MULTICENTER STUDY
Benoit Peyronnet, MD1, Grégoire Capon, MD2, Olivier Belas, MD3, Andrea Manunta, MD4, Juliette Hascoet, MD5, Lucas Freton, MD6, Anna Goujon, MD6, Michel Belas, MD6, Pierre Callerot, MD6, Vincent Cardot, MD7, Arnaud Delreux, MD7, Frédéric Dubois, MD7, Grégoire Robert, MD7, Luc Corbel, MD8, Emmanuel Della Negra, MD9, Francois Haab, MD, PhD10, Laurence Peyrat, MD10, Jean-Nicolas Cornu, MD11, Philippe Grise, MD, PhD11, Aurélien Descazeaud, MD, PhD11, Georges Fournier, MD, PhD11
1University of Rennes, 2University of Bordeaux, 3Polyclinique Sud Le Mans, 4University of Rennes, 5University of Brest, 6Meudon Private Hospital, 7Saint-Grégoire Private Hospital, 8Saint-Brieuc Private Hospital, 9Saint-Brieuc Private Hospital, 10Diaconesses Hospital, 11University of Rouen, 12University of Limoges, 13University of Brest
Presented By: Benoit Peyronnet, MD

Poster #M10
WOMEN’S EXPERIENCE WITH STRESS URINARY INCONTINENCE: INSIGHTS FROM A QUALITATIVE SOCIAL MEDIA ANALYSIS
Gabriela Gonzalez1,2, Yuliya Zektser1,3,4, Carine Khalil, PhD3,4, Kristina Vaculik3,4, Corey Arnold, PhD5, Christopher V. Almario, MD, MSHPM3,4,6,7, Brennan M.R. Spiegel, MD, MSHS3,4,6,7, Jennifer T. Anger, MD, MPH2
1David Geffen School of Medicine, University of California, Los Angeles, CA, 2Department of Surgery, Division of Urology, Cedars-Sinal Medical Center, Los Angeles, CA, 3Division of Health Services Research, Cedars-Sinal Medical Center, Los Angeles, CA, 4Cedars-Sinan Center for Outcomes Research and Education, Los Angeles, CA, 5Medical Imaging Informatics, Department of Radiology, UCLA, Los Angeles, CA, 6Division of Informatics, Cedars-Sinal Medical Center, Los Angeles, CA, 7Division of Digestive and Liver Diseases, Cedars-Sinal Medical Center, Los Angeles, CA
Presented By: Gabriela Gonzalez, BS

Poster #M11
LONGITUDINAL EVALUATION OF NEW OVERACTIVE BLADDER PATIENTS: ARE PATIENTS FOLLOWING UP AND UtilIZING THIRD LINE THERAPIES?
Chris Du, BA1, William T. Berg, MD2, Zhenyue Huang, BA3, Anh Nguyen, BS1, Alice Cheung, BS1, Alexandra Siegal, BA1, Colin Dabrowski, BS1, Sina Mehraban-Far, BS1, Steven Weissbart, MD2, Jason Kim, MD3
1Stony Brook School of Medicine, 2Stony Brook Hospital, Department of Urology
Presented By: William T. Berg, MD

Poster #M12
OUTCOMES OF MACROPLASTIQUE INJECTIONS FOR STRESS URINARY INCONTINENCE AFTER SUB-URETHRAL SLING REMOVAL
Dayron Rodriguez, Deborah Hess, Feras Alhalabi, Timothy Carroll, Maude Carmel, Philippe Zimmern
UT Southwestern
Presented By: Dayron Rodriguez, MD, MPH

Poster #M13
IDENTIFYING BARRIERS TO URINARY INCONTINENCE CARE AMONG PRIMARY CARE PROVIDERS
Claire S. Burton, MD1, Rachel O’Brien2, Karyn Eilber, MD2, A. Lenore Ackerman, MD, PhD2, Jennifer Anger, MD MPH2
1University of California Los Angeles, 2Cedars Sinai Medical Center
Presented By: Claire S. Burton, MD
Poster #M14

REFINEMENT OF SYMPTOM-BASED FEMALE LUTS CLUSTERS BY USING THE THREE-DAY BLADDER DIARY DATA
Victor P. Andreev1, Gang Liu1, John O.L. DeLancey2, J. Quentin Clemens2, Claire C. Yang3, H. Henry Lai4, Anne P. Cameron1, Abigail R. Smith1, Margaret E. Helmuth1, Robert M. Merion1, Cindy L. Amundsen1, J. Eric Jelovsek1, Catherine S. Bradley6, Ziya Kirkali, and the LURN7
1Arbor Research Collaborative for Health, 2University of Michigan, 3University of Washington, 4Washington University School of Medicine, 5Duke University, 6University of Iowa Carver College of Medicine, 7National Institute of Diabetes and Digestive and Kidney Diseases
Presented By: Victor P. Andreev, PhD, DSc

Poster #M15

FOCUS GROUPS VERSUS DIGITAL ETHNOGRAPHY: WHICH BETTER CAPTURES THE PERSPECTIVES OF WOMEN WITH RECURRENT URINARY TRACT INFECTIONS?
Victoria C.S. Scott1, Gabriela Gonzalez2, Lauren W. Thum3, Taylor Sadun1, Sally L. Maliski4, Brennan M. Spiegel5, Ja-Hong Kim1, Jennifer T. Anger1
1Department of Urology, David Geffen School of Medicine at UCLA, Los Angeles, CA, 2Division of Urology, Cedars Sinai Medical Center, Beverly Hills, CA, 3Urology Specialists, Sioux Falls, SD, 4School of Nursing, University of Kansas Medical Center, Kansas City, KS, 5Department of Gastroenterology, Cedars Sinai Medical Center, Beverly Hills, CA
Presented By: Victoria C. S. Scott, MD

Poster #M16

SATISFACTION OF WOMEN UROLOGISTS WITH MATERNITY LEAVE, CHILDBIRTH TIMING AND WORK-FAMILY BALANCE TEN YEARS LATER
Victoria C.S. Scott1, Lori B. Lerner2, Jennifer T. Anger3, Michelle Van Kuiken1, A. Lenore Ackerman3
1Department of Urology, David Geffen School of Medicine at UCLA, Los Angeles, CA, 2VA Boston Healthcare System, Boston, MA, 3Division of Urology, Cedars Sinai Medical Center, Beverly Hills, CA
Presented By: Victoria C. S. Scott, MD

Poster #M17

THE NON-INVASIVE MEASUREMENT OF NON-VOIDING RHYTHMIC BLADDER CONTRACTIONS BY M-MODE ULTRASOUND IN WOMEN WITH AND WITHOUT BLADDER URGENCY
Anna S. Nagle, PhD1, Zachary Cullingsworth1, Uzoma Anele, MD2, Charles Blocher2, Andrea Balthazar, MD2, Adam Klausner, MD2, John Speich, PhD1
1Department of Mechanical Nuclear Engineering, Virginia Commonwealth University College of Engineering, Richmond, VA, 2Department of Surgery, Virginia Commonwealth University School of Medicine, Richmond, VA
Presented By: Anna S. Nagle, PhD

Poster #M18

FOLLOW-UP OF E-SISTER PARTICIPANTS AT ONE SITE TO EVALUATE THE VERY LONG-TERM RESULTS OF BURCH VS. AUTOLOGOUS SLING PROCEDURE FOR STRESS URINARY INCONTINENCE
Amy Kuprasertkul, BA1, Alana Christie, MS2, Gary Lemack, MD1, Philippe Zimmern, MD1
1Department of Urology, UT Southwestern Medical Center, 2Simmons Comprehensive Cancer Center, UT Southwestern Medical Center
Presented By: Amy Kuprasertkul, BS
*Female Urology/Incontinence Non-Moderated Poster Session

*Not CME Accredited
Thursday, February 28, 2019
5:00 p.m. – 6:30 p.m.

**Poster #NM25**
WITHDRAWN

**Poster #NM26**
DO WOMEN WITH PELVIC FLOOR DISORDERS PREFER TO BE TREATED BY FEMALE UROGYNECOLOGISTS?
Asnat Groutz¹, David Gordon¹, Ronen Gold¹, Mordechai Shimonov², Yifat Amir Levy¹, Hadar Amir¹
¹Lis Maternity and Women’s Hospital, Tel Aviv Sourasky Medical Center, Sackler Faculty of Medicine, Tel Aviv University, Israel.
²E. Wolfson Medical Center, Sackler Faculty of Medicine, Tel Aviv University, Israel.
Presented By: Asnat Groutz, MD

**Poster #NM27**
TRANSCUTANEOUS POSTERIOR TIBIAL NERVE STIMULATION IN FEMALE PATIENTS WITH OVERACTIVE BLADDER: A PROSPECTIVE SINGLE-CENTER COHORT
Benoit Peyronnet, MD, Nelly Senal, MD, Quentin Alimi, MD, Lorene Mathieu, MD, Juliette Hascoet, MD, Isabelle Bonan, MD PhD, Andrea Manunta, MD, Jacqueues Kerdraon, MD
University of Rennes
Presented By: Benoit Peyronnet, MD

**Poster #NM28**
FDA NOTICE ON TRANSVAGINAL ENERGY-BASED DEVICES (TV-EBD) FOR VAGINAL REJUVENATION THERAPY: WAS IT JUSTIFIED?
Michael J. Kennelly, MD, Carolinas Healthcare System, Cameron Futral, Carolinas Healthcare System McKay Urology
Presented By: Michael J. Kennelly, MD

**Poster #NM29**
COMPARISON OF PUBLICATION BIAS WITHIN THE GENERAL AND FEMALE UROLOGY LITERATURE
Jacqueline M. Zillioux, Nickhil Patel, Nicole Tuong, David Rapp
University of Virginia School of Medicine
Presented By: Jacqueline M. Zillioux, MD

**Poster #NM30**
FOLLOW UP EXPERIENCE WITH TELEMEDICINE VISITS IN FEMALE UROLOGY PATIENTS
Alex Uhr, MD, Joon Yau Leong, Ali Syed, MD, Leonard Gomella, MD, Deborah Glassman, MD
Department of Urology, Thomas Jefferson University, Philadelphia PA
Presented By: Alex Uhr, MD

**Poster #NM31**
LONG-TERM SAFETY AND EFFICACY OF POLYDIMETHYLSILOXANE (MACROPLASTIQUE®) IN PATIENTS WITH STRESS URINARY INCONTINENCE: ANALYSIS OF PATIENTS WHO COMPLETED 3-YEARS OF TREATMENT
Gamal Ghoniem, MD¹, Bilal Farhan, MD¹, Mashrin Chowdhury, DO², Yanjun Chen, MS²
¹University of California Irvine Department Of Urology, ²University of California Irvine Institute for Clinical and Translational Science
Presented By: Mashrin Lira Chowdhury, DO

**Poster #NM32**
IMPACT OF LIFETIME OBESITY ON URINARY INCONTINENCE IN THE WOMEN’S HEALTH INITIATIVE
Judy Choi, MD¹, Jenny Chang², Argyrios Ziogas, PhD², Luohua Jiang, MD, PhD², Hoda Anton-Culver, PhD²
¹Dept of Urology, UC Irvine Health, ²Dept of Epidemiology, UC Irvine School of Medicine
Presented By: Judy Choi, MD
Poster #NM33
60 MINUTES AND VAGINAL MESH: DID THE MEDIA TELL THE WHOLE STORY?
Colby P. Souders, MD1, Ashley Caron1, Ndidiamaka Obi1, Khasiah Clark2, Lynn McClelland, JD, MPH3, A. Lenore Ackerman, MD, PhD1, Jennifer Anger, MD, MPH1, Karyn Eilber, MD1
1Cedars-Sinai Medical Center, Los Angeles, CA, 2College of Science and Health, Charles Drew University of Medicine and Science, Los Angeles, CA, 3Hugh Hazel Darling Law Library at the University of California Los Angeles School of Law, Los Angeles, CA
Presented By: Colby P. Souders, MD

Poster #NM34
AGING RELATED ALTERATIONS OF NEURAL CONTROL PROPERTIES OF THE EXTERNAL ANAL SPHINCTER
Nicholas Dias, BS1, Chuan Zhang, MS1,2, Xuhong Li, MD2, Yingchun Zhang, PhD1,2
1Biomedical Engineering, University of Houston, Houston, Texas, USA, 2Guangdong Provincial Work Rehabilitation Hospital, Guangzhou, Guangdong, China
Presented By: Yingchun Zhang, PhD

Poster #NM35
ARE ACTIVE WOMEN MORE LIKELY TO HAVE RECURRENT STRESS URINARY INCONTINENCE (SUI) AFTER MIDURETHRAL SLINGS (MUS)?
Kimberly Ferrante, MD1, Alison Weidner, MD2, David Ellington, MD3, Donna Mazloomdoost, MD4, David Rahn, MD5, Kyle Wohlrab, MD6, Ariana Smith, MD7, Marie Gantz, PhD8, Pamela Moalli, MD, PhD9, Emily Lukacz, MD10
1Kaiser Permanente, San Diego, 2Duke University Medical Center, 3University of Alabama Medicine, 4National Institute of Child Health and Human Development, 5University of Texas Southwestern, 6Women and Infants Hospital, 7The Hospital Of The University Of Pennsylvania And The Pennsylvania Hospital, 8RTI International, 9University of Pittsburgh Medical Center, 10Pelvic Floor Disorders Network
Presented By: Kimberly Ferrante, MD, MAS

Poster #NM36
LONG-TERM OUTCOMES AND COMPLICATIONS OF THE TRANSOBTURATOR MIDURETHRAL SLING
Librado Valadez, MD1, Trapper Munn1, Clifton F. Frilot II, PhD2, Alex Gomelsky, MD1
1LSUHSC-Shreveport, 2Health Sciences Center School of Allied Health
Presented By: Librado Valadez, MD

Poster #NM37
VERY LONG-TERM FOLLOW-UP OF THE ANTERIOR VAGINAL WALL SUSPENSION PROCEDURE FOR INCONTINENCE AND/OR PROLAPSE REPAIR
Amy Kuprasertkul, BA1, Alana Christie, MS2, Feras Alhalabi, MD1, Philippe Zimmer, MD1
1Department of Urology, UT Southwestern Medical Center, 2Simmons Comprehensive Cancer Center, UT Southwestern Medical Center
Presented By: Amy Kuprasertkul, BS

Poster #NM38
NOCTURIA IN FEMALE PATIENTS: CURRENT CLINICAL FEATURES, TREATMENT PATTERNS AND OUTCOMES AT A TERTIARY REFERRAL CENTER
Siri Drangsholt, Benoit Peyronnet, MD, Maria Arclia-Ruiz, Rachael Sussman, Ricardo Palmerola, Dominique Pape, Nirit Rosenblum, Victor Nitti, Benjamin Brucker
New York University
Presented By: Benjamin Brucker, MD

Poster #NM39
RADIOFREQUENCY ABLATION OF THE SUBTRIGONAL TISSUE TO TREAT REFRACTORY OAB IMPROVES QOL MEASURES, REDUCES UUI AND URGENCY VOIDS BUT INCREASES NON-URGENCY VOIDS
Eric S. Rovner, Professor of Urology1, Eboo Versi, Clinical Associate Professor2, Le-Mai Tu, Professor of Urology1, Roger Dmochowski, Professor of Urology1, Stefan deWachter, Professor of Urology1
1Medical University of South Carolina, 2Robert Wood Johnson Medical School, 3University of Sherbrooke, 4Vanderbilt University Medical Center, 5University of Antwerp
Presented By: Eric S. Rovner, MD
Poster #NM40  PERSONAL PREFERENCES FOR THE USE OF NONABSORBABLE SYNTHETIC MESH IN THE MANAGEMENT OF STRESS URINARY INCONTINENCE AND PELVIC ORGAN PROLAPSE AMONG UROLOGISTS UROGyneCOLOGISTS  
Sanchita Bose, MD1, Dayron Rodriguez, MD2, Ricardo Munarriz, MD3, Linda Ng, MD3  
1Houston Methodist Hospital, Houston, TX, 2UT Southwestern Medical Center, Dallas, TX, 3Boston Medical Center, Boston, MA  
Presented By: Sanchita Bose, MD

Poster #NM41  MESH COMPLICATIONS FROM MIDURETHRAL SLINGS: ARE THEY ASSOCIATED WITH INCREASED DEPRESSION AND SELF-HARM BEHAVIOR?  
Blayne Welk1, Jennifer Reid2  
1Western University, 2ICES Western  
Presented By: Blayne Welk, MD, MSc

Poster #NM42  WITHDRAWN

Poster #NM43  PATIENT PREFERENCE IN THEIR UROLOGISTS’ GENDER: IS THERE A BIAS?  
David Abramowitz, MD1, Nahomy Calixte, MD2, Hadley Narins, MD3, Teresa Danforth, MD1  
1Department of Urology, University at Buffalo, 2Watson Clinic, Lakeland, FL, 3Associated Medical Professionals, Syracuse, NY  
Presented By: David Abramowitz, MD

Poster #NM44  PATIENTS HAVE POOR COMPLIANCE WITH REPEAT ONABOTULINUMTOXIN A INJECTIONS FOR OVERACTIVE BLADDER  
Anh Nguyen1, Justina Tam2, Chris Du1, Qiongjie Wang1, Michael Hung2, Jason Kim2  
1Stony Brook University School of Medicine, 2Department of Urology, Stony Brook University Medical Center  
Presented By: Anh Nguyen, BA

Poster #NM45  PREVALENCE OF PELVIC FLOOR DISORDERS IN FEMALE CROSSFIT ATHLETES  
Kim H. Thai1, Rachel High2, Hina Virani2, Jill Danford2  
1Department of Urology, Baylor Scott and White Health, 2Department of Female Pelvic Medicine Reconstructive Surgery, Baylor Scott and White Health  
Presented By: Kim H. Thai, MD

Poster #NM46  BMI>35 COULD BE ASSOCIATED TO A WORSE COMPOSITE OUTCOME FOR SUI SLING PROCEDURE-RETROSPECTIVE STUDY OF A LARGE DATASET OF PATIENTS  
Javier Pizarro-Berdichevsky, Bernardita Blumel, Trinidad Raby, Fabiola Schlageter  
División de Obstetricia y Ginecología, Hospital Sótero del Río, Pontificia Universidad Católica de Chile  
Presented By: Javier Pizarro-Berdichevsky, MD

Poster #NM47  PERSISTENT STRESS URINARY INCONTINENCE FOLLOWING PUBOVAGINAL SLINGS: PREVALENCE, RISK FACTORS AND MANAGEMENT  
Ricardo Palmerola1, Benoit Peyronnet, MD1, Michelle Peng2, Rachael Sussman1, Christina Escobar1, Nirit Rosenblum1, Victor Nitti1, Benjamin Brucker1  
1NYU LANGONE MEDICAL CENTER, 2George Washington University  
Presented By: Ricardo Palmerola, MD

Poster #NM48  RECTUS FASCIA VS. FASCIAL LATA FOR AUTOLOGOUS FASCIAL PUBOVAGINAL SLING: A SINGLE-CENTER COMPARISON OF PERIOPERATIVE AND FUNCTIONAL OUTCOMES  
Rachael D. Sussman, Michelle Peng, Benoit Peyronnet, Ricardo Palmerola, Christina Escobar, Dominique Pape, Scott Smilen, Nirit Rosenblum, Benjamin Brucker, Victor Nitti  
New York University  
Presented By: Rachael D. Sussman, MD
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Rena D Malik1, Deborah Hess2, Alana Christie3, Maude E Carmel2, Philippe E Zimmern2
1University of Maryland School of Medicine, Dept. Surgery, Baltimore, MD, 2University of Texas Southwestern Medical Center, Dept. Urology, Dallas, TX, 3University of Texas Southwestern Medical Center, Dallas, TX
Presented By: Rena D. Malik, MD

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Lauren Tennyson1, Esther Han1, Kenneth M Peters1,2, Larry T Siris1,2
1Department of Urology, Beaumont Health, Royal Oak, MI, 2Oakland University William Beaumont School of Medicine, Rochester, MI
Presented By: Lauren Tennyson, MD

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Shirly Solouki, MD1, Sophie Shoval, MS2, Nitya Abraham, MD3
1Albert Einstein College of Medicine/Montefiore Medical Center Department of OB/GYN, 2Albert Einstein College of Medicine, 3Albert Einstein College of Medicine/Montefiore Medical Center Department of Urology
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Cleveland Clinic Foundation
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Mashrin L. Chowdhury, DO1, Naila Javaid, MD1, Bilal Farhan, MD1, Dina Saba1, Gamal Ghoniem, MD1, Sonia Lee, MD2, Mohammad Helmy, MD2
1University of California Irvine Department of Urology, 2University of California Irvine Department of Radiology
Presented By: Naila Javaid, MD

Poster #NM55
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University College London Hospital
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Iryna Crescenze, Giulia Lane, MD, Priyanka Gupta, Paholo Barboglio Romo
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Michael Guralnick, Professor of Urology¹, Xavier Fritel², Tufan Tarcan, Professor of Urology³, Montserrat Espuna-Pons⁴, Peter Rosier⁵  
¹Medical College of Wisconsin, ²Universite de Poitiers, ³Marmara University School of Medicine, ⁴University of Barcelona, ⁵UMC Utrecht  
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Hugo Davila, MD¹,², Stephanie N. Williams, MS³, Karisa Brown³, Prajwal Dara³, Lindsey Bruce, MD⁴, Lindsey Goodman, MD⁵, Taryn Gallo, MD⁶  
¹Florida Healthcare Specialists, Research Institute and Pelvic Reconstructive Surgery, ²Florida State University, College of Medicine, Vero Beach, FL, ³Florida State University College of Medicine, Tallahassee, FL, ⁴Sebastian River Medical Center, Vero Beach, FL  
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Dena Moskowitz¹, Lynn Stothers², Alvaro Lucioni³, Kamran Sajadi⁴, Jane Miller⁵, Suzette Sutherland⁶, Una Lee³  
¹University of California, Irvine, ²University of British Columbia, ³Virginia Mason Medical Center, ⁴Oregon Health and Sciences University, ⁵University of Washington  
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Rachel Barratt, BMBS, BMedSci, MRCS, Bogdan Toia, Mahreen Pakzad, Rizwan Hamid, Jeremy Ockrim, Tamsin Greenwell  
University College London Hospitals, UCLH@ Westmoreland Street, 16-18 Westmoreland Street, London W1G 9PH  
Presented By: Rachel Barratt, BMBS, BMedSci, MRCS
## Video Session I

**Friday, March 1, 2019**

**7:00 a.m. – 8:00 a.m.**

**Moderators:** Lindsey Cox, MD  
Christopher F. Tenggardjaja, MD

| Video #1 | TRANSVAGINAL CYSTOLITHOTOMY: A NOVEL APPROACH  
JJ Zhang, M.D., Jessica Lloyd, M.D., Juan Guzman-Negron, M.D., Howard Goldman, M.D.  
Cleveland Clinic Foundation  
Presented By: JJ Haijing Zhang, MD |
| --- | --- |
| Video #2 | ROBOTIC REVISION OF AN ARTIFICIAL URINARY SPHINCTER IN A FEMALE  
Esther Han, D.O.¹, Jason Gilleran, M.D.¹,²  
¹Beaumont Health, ²Oakland University  
Presented By: Esther Han, DO |
| Video #3 | CHRONIC CYSTITIS IN POST-MENOPAUSAL WOMEN  
Philippe Zimmern, MD, Joseph Crivelli, MD, Renata Malik, MD, Deborah Hess, MD  
Department of Urology, UT Southwestern Medical Center  
Presented By: Philippe E. Zimmern, MD, FACS, FPMRS |
| Video #4 | ROBOT-ASSISTED IMPLANTATION OF ARTIFICIAL URINARY SPHINCTER IN WOMEN  
Benoit Peyronnet, MD¹, grégoire capon, MD¹, Olivier Belas, MD², Andrea manunta, MD¹, Vincent Cardot, MD³,  
Frédéric Dubois, MD³, Juliette hascoet, MD¹, adrien vidart, MD², Xavier gamé, MD PhD⁴, Aurélien Descazeaud,  
MD PhD⁴, Georges Fournier, MDPhD⁴  
¹University of Rennes, ²Polyclinique Sud Le Mans, ³Meudon Private Hospital, ⁴Saint-Gregoire Private Hospital,  
⁵Foch Hospital, ⁶University of Toulouse, ⁷University of Limoges, ⁸University of Brest  
Presented By: Benoit Peyronnet, MD |
| Video #5 | SURGICAL MANAGEMENT OF A SKENE’S GLAND ABSCESS  
Elisabeth M. Sebesta, MD, Doreen E. Chung, MD  
Department of Urology, Columbia University Irving Medical Center, New York, NY  
Presented By: Elisabeth Sebesta, MD |
| Video #6 | NEOBLADDER-VAGINAL FISTULA  
Philippe Zimmern, MD, Renata Malik, MD, Deborah Hess, MD, Ganesh Raj, MD  
Department of Urology, UT Southwestern Medical Center  
Presented By: Philippe E. Zimmern, MD, FACS, FPMRS |
ABSTRACT LISTING

Pelvic Organ Prolapse/Reconstruction Podium Session
Friday, March 1, 2019
8:15 a.m. – 9:45 a.m.
Moderators: Polina Reyblat, MD
Suzette E. Sutherland, MD, MS, FPMRS

8:15 a.m. #18 DEVELOPMENT AND EVALUATION OF A NOVEL LONG-TERM FULLY-RESORBABLE SCAFFOLD OPTIMIZED FOR FEMALE PELVIC ORGAN PROLAPSE (POP)
Zeliha Guler Gokce1, Chantal M. Diedrich1, Eva Vodegel1, Lucie Hymáňová2, Edoardo Mazza2, Jan Deprest1, Jan Paul Roovers1
1Academic Medical Center, University of Amsterdam, Amsterdam, The Netherlands, 2Centre for Surgical Technologies, Group Biomedical Sciences, KU Leuven, Leuven, Belgium, 3Institute of Mechanical Systems, ETH Zurich, Zurich, Switzerland
Presented By: Zeliha Guler Gokce, PhD

8:25 a.m. #19 ASSESSING THE IMPACT OF PROCEDURE-SPECIFIC OPIOID PRESCRIBING RECOMMENDATIONS ON OPIOID STEWARDSHIP FOLLOWING PELVIC ORGAN PROLAPSE SURGERY
Brian J. Linder, MD, MS, John Occhino, MD, Christopher Klingele, MD, Emanuel Trabuco, MD, John Gebhart, MD
Mayo Clinic
Presented By: Brian J. Linder, MD, MS

8:35 a.m. #20 READABILITY OF PATIENT EDUCATION MATERIALS ON PELVIC ORGAN PROLAPSE, OVERACTIVE BLADDER, AND STRESS URINARY INCONTINENCE
Chris Du1, Wai Lee2, Alvaro Lucioni2, Kathleen C. Kobashi2, Una J. Lee2
1SUNY Stonybrook, 2Virginia Mason
Presented By: Chris Du, BA

8:45 a.m. #21 UTILIZATION OF TRANSVAGINAL MESH AND URETHRAL SLING IN NEW YORK STATE FROM 2005 TO 2015
Zhenyue Huang1, Anh Thuy Nguyen1, William T. Berg2, Alexandra R. Siegel1, Sina Mehraban-Far1, Michael Gross1, Steven Weissbart1, Jason Kim2
1Stony Brook University School of Medicine, Stony Brook, New York, 2Department of Urology, Stony Brook University Medical Center, Stony Brook, New York
Presented By: Zhenyue Huang

8:55 a.m. #22 CONTEMPORARY MULTICENTER OUTCOMES OF AUGMENTATION CYSTOPLASTY IN THE ADULT POPULATION OVER A 10-YEAR PERIOD: A NEUROGENIC BLADDER RESEARCH GROUP (NBRG) STUDY
Philip J. Cheng, MD1, Sanchita Bose, MD2, Rose Khavari, MD2, Blayne Welk, MD, MS3, David Ginsberg, MD4, Sara Lenherr, MD, MS5, John Stoffel, MD5, Michael Kennelly, MD, FACS, FPMRS6, Yahir Santiago-Lastra, MD6, Sean Elliott, MD, MS, FACS6, Jeremy Myers, MD, FACS6
1University of Utah, Salt Lake City, UT, 2Houston Methodist Hospital, Houston, TX, 3Western University, London, Ontario, Canada, 4University of Southern California, Los Angeles, CA, 5University of Michigan, Ann Arbor, MI, 6Carolinas Medical Center, Chapel Hill, NC, 7University of California San Diego, San Diego, CA, 8University of Minnesota, Minneapolis, MN
Presented By: Philip J. Cheng, MD

9:05 a.m. #23 LESSONS LEARNED: FIRST 50 VAGINOPLASTIES
Virginia Y. Li, Amanda Chi, Melissa Poh, Owen Aftreth, Daniel Artenstein, Polina Reyblat
Kaiser Permanente
Presented By: Virginia Y. Li, MD

9:15 a.m. #24 IS BOTULINUM TOXIN A AN EFFECTIVE TREATMENT IN PATIENTS FOLLOWING RADIOTHERAPY?
Bogdan Toia, Mahreen Pakzad, Rizwan Hamid, Tamsin Greenwell, Jeremy Ockrim
University College London Hospital
Presented By: Jeremy Ockrim, MD, BSc(Hons), FRCS
9:25 a.m.  #25  URETERAL INJURY AND FISTULA FOLLOWING HYSTERECTOMY FOR BENIGN INDICATIONS
Kai B. Dallas, MD¹, Lisa Rogo-Gupta², Christopher S. Elliott¹³
¹Stanford University, Department of Urology, Stanford, CA, ²Stanford University, Department of Obstetrics and Gynecology, Stanford, CA, ³Santa Clara Valley Medical Center, Department of Urology, San Jose, CA
Presented By: Kai B. Dallas, MD

9:35 a.m.  #26  UROLOGIC COMPLICATIONS REQUIRING INTERVENTION FOLLOWING HIGH-DOSE PELVIC RADIATION FOR CERVICAL CANCER
Haerin Lee Beller, MD, Jacqueline M. Zilliox, David Rapp, Tracey Krupski, Linda Duska, Timothy Showalter, Jennifer Lobo, Noah Schenkman
University of Virginia School of Medicine
Presented By: Haerin Lee Beller, MD
Male Incontinence/Urodynamics/Neuromodulation Moderated Poster Session
Friday, March 1, 2019
8:15 a.m. – 9:45 a.m.
Moderators: Jason M. Kim, MD
John P. Lavelle, MB, FRCSI

**Poster #M19**
PERIOPERATIVE FACTORS CONTRIBUTING TO DELAYED RETURN OF CONTINENCE AFTER RADICAL PROSTATECTOMY
Divya Ajay1, Hanhan Li1, Brittani Harlow2, Jenny Nguyen2, Cooper Benson3, Xuemei Wang4, Brian Chapin1, John Davis1, O. Lenaine Westney1
1Department of Urology, The University of Texas, MD Anderson Cancer Center, Houston, TX, 2University of Texas Health Science Center at Houston, McGovern Medical School, Houston, TX, 3Tulane University, 4Department of Biostatistics, The University of Texas, MD Anderson Cancer Center, Houston, TX
Presented By: Divya Ajay, MD, MPH

**Poster #M20**
PROSPECTIVE PARALLEL COHORT, MULTI-CENTER STUDY OF SOLYX SINGLE INCISION SLING VS. OBTRYX II SLING FOR TREATING STRESS URINARY INCONTINENCE IN WOMEN: 3 YEAR RESULTS
Amanda White1, Bruce Kahn2, Guang Yang3, Joseph Schaffer4
1University of Texas Dell Medical School, 2Scripps Clinic, 3Marlborough, MA, 4University of Texas Southwestern Medical Center
Presented By: Amanda White, MD

**Poster #M21**
URODYNAMIC MECHANISMS UNDERLYING OVERACTIVE BLADDER SYMPTOMS IN PATIENTS WITH PARKINSON’S DISEASE
Gregory Vurture1, Benoit Peyronnet, MD2, Jose-Alberto Palma3, Rachael Sussman1, Milton Biagini4, Dominique Malacarne1, Andrew Feigin1, Ricardo Palmerola1, Nirit Rosenblum1, Steven Frucht5, Horacio Kaufmann1, Victor Nitti1, Benjamin Brucker1
1Department of Urology, New York University School of Medicine, 2Department of Neurology Dysautonomia Center, New York University School of Medicine, New York, USA, 3Department of Surgery/Division of Urology, Virginia Commonwealth University School of Medicine, Richmond, VA, 4The Marlene Paolo Fresco Institute for Parkinson's Movement Disorders, New York University School of Medicine, New York, USA
Presented By: Gregory Vurture

**Poster #M22**
HAS THE USE OF PRE-OPERATIVE URODYNAMICS FOR STRESS URINARY INCONTINENCE SURGERY CHANGED FOLLOWING THE VALUE STUDY?
Matthew Clements1, C. William Pike2, Jacqueline M. Zillioux1, David Rapp1
1University of Virginia School of Medicine, 2Georgetown University School of Medicine
Presented By: Jacqueline M. Zillioux, MD

**Poster #M23**
DIFFERENCES IN BLADDER SHAPE DURING FILLING BETWEEN INDIVIDUALS WITH HEALTHY AND OVERACTIVE BLADDERS IDENTIFIED USING NON-INVASIVE ULTRASOUND DURING ORAL HYDRATION
Dhruv Sethi, MBA, MPH1, Blessan Sebastian, BS1, Devina Thapa2, Naomi Vinod, BS2, Zachary Cullingsworth, BS2, Andrea Balthazar, MD3,4, Anna S. Nagle, PhD2, Laura Carucci, MD5, John Speich, PhD2, Adam Klausner, MD1,4
1Virginia Commonwealth University School of Medicine, 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, 5Department of Radiology, Virginia Commonwealth University, Richmond, VA
Presented By: Andrea Balthazar, MD

**Poster #M24**
ENVIRONMENTAL FACTORS TO INCREASE PATIENT COMFORT DURING URODYNAMIC TESTING: A RANDOMIZED CONTROL TRIAL OF 160 PATIENTS
Alexandra Carolan, MD, Kyle Rose, MD, Kathleen Olson, MD, Kassem Faraj, MD, Marlene Girardo, MS, Christopher Wolter, MD, Aqsa Khan, MD
Urology Department, Mayo Clinic, Phoenix, Arizona
Presented By: Alexandra Carolan, MD
Poster #M25

16-YEAR TRENDS OF INTERSTIM IMPLANTATION: A STATEWIDE DATABASE ANALYSIS
Michael Gross, BS1, Alexandra Siegal, BA1, Chris Du, BA1, William Berg, MD2, Wai Lee, MD3, Jason Kim, MD4
1Stony Brook University School of Medicine, Stony Brook, New York, 2Department of Urology, Stony Brook University Medical Center, Stony Brook, New York, 3Department of Urology, Virginia Mason Medical Center, Seattle, WA
Presented By: Michael Gross, BS

Poster #M26

ASSESSMENT OF TRANSCUTANEOUS ULTRASOUND IN IDENTIFICATION OF THE POSTERIOR TIBIAL NERVE
Steven Petrou, Eric Robinson, Rachel Pung, Edsel Bittencourt, Steven Lomax, MD, David Thiel
Mayo Clinic Florida, Department of Urology
Presented By: Steven Lomax, MD

Poster #M27

SACRAL NEUROMODULATION IN PATIENTS WITH PARKINSON'S DISEASE: A MULTICENTER STUDY
Benoit Peyronnet, MD1, Xavier Biardeau, MD2, Jean-Nicolas Cornu, MD, PhD3, Gregory Vurtle4, Agathe Hignard5, Francois Tariel1, Annabelle Auble, MD3, Thibaut Briere6, Vivien Graffeille, MD6, Francois Marcelli, MD6, Andrea Manunta, MD7, Victor Nitti, MD4, Nirit Rosenblum, MD4, Xavier Gamé, MD, PhD7, Benjamin Brucker, MD4
1University of Rennes, France, 2University of Lille, France, 3University of Rouen, France, 4New York University, 5University of Lille, France, 6University of Toulouse, France, 7University of Toulouse, France
Presented By: Benoit Peyronnet, MD

Poster #M28

12 YEAR SINGLE CENTER RETROSPECTIVE REVIEW OF RISK FACTORS AND RATE OF TINED LEAD BREAKAGE DURING SACRAL NEUROMODULATION LEAD EXPLANT
Jessica J. Rueb1, Javier Pizarro-Berdichevsky2, Samir Derisavifard2, Patricia Zahner1, Laura Giusto1, Courtenay Moore1, Raymond Rackley1, Sandip Vasavada1, Howard Goldman1
1Cleveland Clinic, Female Pelvic Medicine and Reconstructive Surgery, Cleveland, OH, 2Hospital Dr. Sotero del Rio, Department of Obstetricia y Ginecologia, Pontificia Universidad Catolica de Chile, Santiago, Chile
Presented By: Jessica J. Rueb, MD
*Male Incontinence/Urodynamics/Neuromodulation/Female Urology Non-Moderated Poster Session

Friday, March 1, 2019
8:15 a.m. – 9:45 a.m.

**Poster #NM65**

**SACRAL NEUROMODULATION IN PARKINSON’S DISEASE PATIENTS WITH NEUROGENIC BLADDER**

Daniel Greenberg, BA, Ericka Sohlberg, MD, Chiyuan Zhang, MPH, Craig V. Comiter, MD, Ekene Enemchukwu, MD, MPH
Department of Urology, Stanford University School of Medicine, Stanford, CA
Presented By: Daniel Greenberg, BA

**Poster #NM66**

**TO STAGE OR NOT TO STAGE? - A COST MINIMIZATION ANALYSIS OF SACRAL NEUROMODULATION PLACEMENT STRATEGIES**

Andrew Sun¹, Catherine Harris¹,², Craig V. Comiter¹, Christopher S. Elliott¹,²
¹Department of Urology, Stanford University, Stanford, CA, USA, ²Division of Urology, Santa Clara Valley Medical Center, Santa Clara, CA, USA
Presented By: Christopher S. Elliott, MD, PhD
*2019 Clinical Essay Award Winner

**Poster #NM67**

**REAL WORLD COMPLIANCE WITH PERCUTANEOUS TIBIAL NERVE STIMULATION MAINTENANCE THERAPY**

Chris Du, BA¹, William T. Berg, MD², Zhenyue Huang, BA¹, Alexandra Siegal, BA¹, Steven Weissbart, MD², Jason Kim, MD²
¹Stony Brook School of Medicine, ²Stony Brook University, Department of Urology
Presented By: William T. Berg, MD

**Poster #NM68**

**EFFECTS OF TISSUE IMPEDANCE ON NEURAL ACTIVATION USING “CONSTANT-CURRENT” VERSUS “CONSTANT-VOLTAGE” NEUROMODULATION – A BENCHTOP STUDY**

Bradley C. Gill, MD, MS¹,², Kenneth Gustafson, PhD²,³
¹Cleveland Clinic, ²Cleveland VA Medical Center, ³Case Western Reserve University
Presented By: Bradley C. Gill, MD, MS

**Poster #NM69**

**INTRAURETHRAL STIMULATION: A POSSIBLE WAY TO INCREASE INTRAURETHRAL PRESSURES AND PREVENT URGENCY INCONTINENCE EPISODES**

James A. Hokanson¹, Warren Grill¹, Cindy Amundsen¹
¹Duke University, Biomedical Engineering, ²Duke University, Obstetrics and Gynecology
Presented By: James A. Hokanson, PhD

**Poster #NM70**

**SACRAL NEUROMODULATION: DETERMINING PREDICTORS OF SUCCESS**

Tara Nikonow Morgan, MD¹, Natalie Pace Shahait, BS², Anand Mohapatra, MD¹, Dianxu Ren, MD PhD³, Aisha Taylor, MD¹, Christopher Chermansky, MD¹
¹Department of Urology, University of Pittsburgh School of Medicine, ²University of Pittsburgh School of Medicine, ³University of Pittsburgh School of Nursing
Presented By: Tara Nikonow Morgan, MD

**Poster #NM71**

**LONG-TERM OUTCOMES OF SACRAL NEUROSTIMULATION: A SINGLE CENTER ANALYSIS**

Jonathan Badin, MD¹, Alejandro Abello, MD², Anurag Das, MD³
¹Beth Israel Deaconess Medical Center, ²Yale School of Medicine
Presented By: Jonathan Badin, MD

**Poster #NM72**

WITHDRAWN
Poster #NM73  RACIAL/ETHNIC DIFFERENCES IN URODYNAMIC PARAMETERS IN PATIENTS WITH OVERACTIVE BLADDER
Stephanie Zuo, MD\(^1\), Elishia McKay, MD\(^1\), Nitya Abraham, MD\(^2\)
\(^1\)Albert Einstein College of Medicine/Montefiore Medical Center, Department of Obstetrics and Gynecology, Bronx NY, \(^2\)Albert Einstein College of Medicine/Montefiore Medical Center, Department of Urology, Bronx NY
Presented By: Stephanie Zuo, MD

Poster #NM74  SPACED EDUCATION: DOES IT IMPROVE RESIDENT KNOWLEDGE RETENTION IN THE DOMAINS OF URODYNAMIC, FPMRS AND NEUROUROLOGY?
Deborah Sperling Hess, MD, MS\(^1\), Rena Malik\(^2\), Dayron Rodriguez\(^2\), Maude Carmel\(^1\)
\(^1\)University of Texas Southwestern, \(^2\)University of Maryland
Presented By: Deborah Sperling Hess, MD, MS

Poster #NM75  ARE PREOPERATIVE URODYNAMICS IMPORTANT FOR THE SUCCESS OF RENAL TRANSPLANT GRAFTS?
Sida Niu, Connor Chestnut, Priya Padmanabhan
University of Kansas Medical Center, Department of Urology
Presented By: Sida Niu, MD

Poster #NM76  COMPARATIVE-FILL URODYNAMICS IDENTIFIES ACUTE DYNAMIC ELASTICITY IN INDIVIDUALS WITH HEALTHY BLadders BUT NOT IN THOSE WITH DETRUSOR OVERACTIVITY
Zachary Cullingsworth, BS\(^1\), Adam Klausner, MD\(^2\), Anna S. Nagle, PhD\(^1\), Ashley Carroll, MD\(^3\), John Speich, PhD\(^1\)
\(^1\)Virginia Commonwealth University, Department of Mechanical and Nuclear Engineering, Richmond, VA, \(^2\)Virginia Commonwealth University, Department of Surgery/Division of Urology, Richmond, VA, \(^3\)Virginia Commonwealth University, Department of Obstetrics and Gynecology, Richmond, VA
Presented By: Zachary Cullingsworth, BS

Poster #NM77  URODYNAMICS ON YOUTUBE: WHAT ARE PATIENTS WATCHING?
Julia Han\(^1\), Hayley Oberhofer\(^2\), Ashley Gordon\(^2\), Andrew Rabley\(^1\), Shahab Bozorgmehri\(^1\), Louis Moy\(^1\)
\(^1\)University of Florida Department of Urology, \(^2\)University of Florida College of Medicine
Presented By: Julia Han, MD

Poster #NM78  EFFECT OF URODYNAMIC URETHRAL CATHETER ON UROFLOWMETRY PARAMETERS: A PROSPECTIVE STUDY
Tariq F. Al-Shaiji, Consultant Urologist\(^1\), Said Yaiesh, Resident\(^2\), Ahmed R. El-Nahas, Consultant Urologist\(^1\), Abdullatif Al-Terki, Consultant Urologist\(^1\)
\(^1\)Urology Unit, Department of Surgery, Amiri Hospital, \(^2\)Kuwait Urology Board, Kuwait Institute for Medical Specialization
Presented By: Tariq F. Al-Shaiji, MD

Poster #NM79  THE SYMPTOMATIC DIFFERENCES BETWEEN MEN AND WOMEN WITH DETRUSOR UNDERACTIVITY
Jeremy Ockrim, Mariele Trimboi, Richard Axell, Mahreen Pakzad, Rizwan Hamid, Tamsin Greenwell
University College London Hospitals, UCLH
Presented By: Jeremy Ockrim, MD BSc (Hons) FRCS

Poster #NM80  URINE CONDUCTIVITY FOR USE IN TELEMETRIC AMBULATORY URODYNAMIC MONITORING
Benjamin Abelson\(^1\), Ian McAdams\(^2\), Sam Butler\(^1\), Steve Majerus\(^2\), Margot Damaser\(^1\)
\(^1\)Cleveland Clinic, \(^2\)Louis Stokes Cleveland VA Medical Center
Presented By: Benjamin Abelson, MD

Poster #NM81  DOES THE “LAW OF URINATION” APPLY TO FEMALE HUMANS?
Angie Tsuei\(^1\), Elizabeth R. Mueller\(^2\)
\(^1\)Loyola University School of Medicine, \(^2\)Loyola University Medical Center
Presented By: Angie Tsuei
Poster #NM82

INFLUENCE OF NARCOTIC USE ON POSTOPERATIVE ADMISSION FOLLOWING ARTIFICIAL URINARY SPHINCTER

Sophia Delpe Goodridge, Benjamin Dropkin, Leah Chisholm, Jeremiah Dallmer, Douglas Milam, Faculty, Hartigan Siobhan, Dmochowski Roger, Faculty, Kaufman Melissa, Faculty

VUMC

Presented By: Sophia Delpe Goodridge, MD

Poster #NM83

IS AN OVERNIGHT STAY NECESSARY AFTER ARTIFICIAL URINARY SPHINCTER INSERTION? FEASIBILITY OF OUTPATIENT AUS INSERTION

Benjamin M. Dropkin, MD1, Jeremiah Dallmer, BS2, Leah Chisholm, BA2, Sophia Delpa, MD1, Siobhan Hartigan, MD1, Douglas Milam, MD1, Melissa Kaufman, MD, PhD1

1Vanderbilt University Medical Center, 2Vanderbilt University School of Medicine

Presented By: Benjamin M. Dropkin, MD

Poster #NM84

A NEW FRONTIER IN NEUROMODULATION WITH A MINIATURE WIRELESS STIMULATOR FOR SMALL PERIPHERAL NERVES

Aswini Kanneganti, PhD1,2, Geetanjali Bendale, MS1,2, Eileen Shimizu, MS1, Ashlesh Deshmukh, MS1, Ana Hernandez-Reynoso, MS1,3, Philippe Zimmerm, MD1,2, Dan Freeman, PhD1, Stuart F. Cogan, PhD1, Mario Romero-Ortega, PhD1,2,5

1Department of Bioengineering, University of Texas at Dallas, Richardson, TX, USA, 2Department of Surgery, UT Southwestern, Dallas, TX, USA, 3Department of Urology, UT Southwestern, Dallas, TX, USA, 4Draper Laboratories, Cambridge, MA, USA, 5Department of Health Sciences, UT Southwestern, Dallas, TX, USA

Presented By: Aswini Kanneganti, PhD

Poster #NM85

AUTOMATED ANALYSIS OF SPONTAENEOUS RHYTHMIC CONTRACTIONS DURING URODYNAMICS IDENTIFIES INCREASING AMPLITUDE FROM LOW TO HIGH VOLUMES IN A SUBGROUP OF PATIENTS WITH DETRUSOR OVERACTIVITY

Zachary Cullingsworth1, Adam Klausner, MD2, John Speich, PhD1

1Virginia Commonwealth University, Department of Mechanical and Nuclear Engineering, Richmond, VA, 2Virginia Commonwealth University, Department of Surgery/Division of Urology, Richmond, VA

Presented By: Zachary Cullingsworth, BS

Poster #NM86

THE PSYCHIATRIC IMPACT OF MEDICAL AND OTHER TRAUMA ON ADULT UROLOGICAL PROCEDURES

Annie Chen, MD1, Yiqin Xu, MD2, Jillian Egan, MD3, Feustel Paul, MD2, Elise De, MD4

1Albany Medical Center, 2University of Virginia Medical Center, 3Georgetown University, 4Massachusetts General Hospital

Presented By: Annie Chen, MD

Poster #NM87

ASSOCIATED URODYNAMIC FINDINGS IN MEN AND WOMEN WITH DETRUSOR UNDERACTIVITY

Tamsin J. Greenwell, Richard Axell, Mariele Trimboli, Mahreen Pakzad, Rizwan Hamid, Jeremy Ockrim

University College London Hospital, UCLH

Presented By: Tamsin Jillian Greenwell, MBChB, MD FRCS(Urol)

Poster #NM88

ESTIMATION OF PVR IN MALE PATIENTS WITH CHRONIC RETENTION AND ITS CORRELATION TO URODYNAMIC FINDING

Mohamed Etafy1, Beauvoir Noel Saint2, Richard Mendelson3, Angelo Gousse2

1Bladder Health and Reconstructive Urology Institute, Miami, FL, USA OR Alazhar university Hospital Egypt, 2Bladder Health and Reconstructive Urology Institute, Miami, FL, USA, 3Keiser University

Presented By: Mohamed Etafy

Poster #NM89

THE AETIOLOGY OF DETRUSOR UNDERACTIVITY

Huriye Kocadag, Core Trainee, Richard Axell, Clinical Scientist, Mahreen Pakzad, Consultant, Rizwan Hamid, Consultant, Jeremy Ockrim, Consultant, Tamsin Greenwell, Consultant

University College London Hospital, UCLH@ Westmoreland Street, London, W1G 9PH

Presented By: Rizwan Hamid, FRCS(Urol), MD(Res)
ABSTRACT LISTING

Poster #NM90

ESTABLISHING THE BENEFIT OF VIDEO-URODYNAMICS AFTER NON-DIAGNOSTIC CYSTOMETROGRAMS
Bogdan Toia, Mahreen Pakzad, Rizwan Hamid, Tamsin Greenwell, Jeremy Ockrim
University College London Hospital
Presented By: Jeremy Ockrim, MD, BSc(Hons), FRCS

Poster #NM91

WHICH IS THE BETTER OPTION FOR STRESS URINARY INCONTINENCE WITH HIGH RISK OF RECURRENT BETWEEN RETROPUBLIC AND TRANSOBUTURATOR MIDURETHRAL SLINGS: A SYSTEMATIC REVIEW AND META-ANALYSIS
Aram Kim1, Ji-Yeon Han2, Young-Jin Park2, Sung Hyun Paick1, YongTae Kim1, Hyeong Gon Kim1, Hong Yong Choi2, Hyun Woo Kim2
1Department of Urology, Konkuk University Medical Center, Konkuk University School of, 2Department of Urology, Pusan National University Yangsan Hospital, Korea, Department of Urology, Catholic University Hospital
Presented By: Aram Kim, MD, PhD

Poster #NM92

DOES A RISK CALCULATOR CORRECTLY PREDICT DE NOVO POSTOPERATIVE STRESS URINARY INCONTINENCE AFTER SURGERY FOR PELVIC ORGAN PROLAPSE IN A RACIALLY/ETHNICALLY DIVERSE POPULATION?
Sophie Sohval, BS1, Shirly Solouki, MD2, Nitya Abraham, MD3
1Albert Einstein College of Medicine, Bronx, NY, 2Montefiore Medical Center, Dept. Obstetrics Gynecology, Bronx, NY, 3Montefiore Medical Center, Dept. Urology, Bronx, NY
Presented By: Shirly Solouki, MD

Poster #NM93

WOMENS PERCEPTIONS OF RESTROOM AVAILABILITY
Sophia Delpe Goodridge, Casey Kowalik, Adam Daily, Siobhan Hartigan, Stuart Reynolds, Faculty, Melissa Kaufman, Faculty, Roger Dmochowski, Faculty
VUMC
Presented By: Sophia Delpe Goodridge, MD

Poster #NM94

IELEEKED, THEN I REDDIT: EXPERIENCES AND INSIGHT SHARED ON URINARY INCONTINENCE BY REDDIT USERS
Chris Du1, Wai Lee2, Dena Moskowitz2, Kathleen C. Kobashi2, Alvaro Lucioni2, Una J. Lee2
1SUNY Stonybrook, 2Virginia Mason
Presented By: Chris Du, BA

Poster #NM95

FEASIBILITY STUDY OF NON-ABLATIVE CRYOGEN-COOLED MONOPOLAR RADIOFREQUENCY TREATMENT FOR STRESS URINARY INCONTINENCE (SUI): INTERIM 12-MONTH Results: Bruce B. Allan, PhD, MD, FRCS(C)1, Stacie Bell, PhD2, Kathryn Husarek, PhD2
1Allan Centre, 2Viveve
Presented By: Bruce B. Allan, PhD, MD, FRCS(C)

Poster #NM96

3-YEAR OUTCOMES OF ROBOT-ASSISTED ARTIFICIAL URINARY SPHINCTER IMPLANTATION IN FEMALE PATIENTS WITH STRESS URINARY INCONTINENCE
Benoit Peyronnet, MD1, Gregoire Capon, MD2, Olivier Belas, MD3, Andrea Manunta, MD1, Pierre Callerot, MD1, Juliette Hascocet, MD2, Aurélien Descazdaeaud, MD2, Grégoire Robert, MD PhD2, Georges Fournier, MD3
1University of Rennes, 2University of Bordeaux, 3Polyclinique Sud Le Mans, 4University of Brest, 5University of Limoges
Presented By: Benoit Peyronnet, MD

Poster #NM97

SAFETY OF INTRADETRUSOR ONABOTULINUMTOXINA INJECTION IN THE ASYMPTOMATIC PATIENT WITH A POSITIVE URINE DIP
Laura L. Giusto, Patricia M. Zahnner, Samir Derisavifard, Jessica J. Rueb, Michele Fascelli, Courtenay K. Moore, Raymond R. Rackley, Sandip P. Vasavada, Howard B. Goldman
Cleveland Clinic Foundation
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<td>1University of Minnesota Medical School, Minneapolis, MN, 2University of Minnesota, Dept. of Urology, Minneapolis, MN, 3University of Minnesota, Masonic Cancer Center, Biostatistics Core, Minneapolis, MN, 4University of Minnesota, Dept. of OB/GYN, Minneapolis, MN</td>
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<td>1Division of Urology, MetroHealth Medical Center, Cleveland, OH, 2Urology Institute, University Hospitals Cleveland Medical Center, Cleveland, OH</td>
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<td>1Beaumont Hospital, Royal Oak, 2Oakland University School of Medicine</td>
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<td>Vanderbilt University Medical Center</td>
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<td>1Department of Urology, Cedars-Sinai Medical Center, Los Angeles, CA, 2David Geffen School of Medicine at UCLA, Los Angeles, CA</td>
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<td>Alexandra Carolan, MD¹, Nan Zhang, MS, BS², Kimberly Tay, BS², Christopher Wolter, MD¹, Aqsa Khan, MD¹</td>
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<td>¹Mayo Clinic, Phoenix, AZ, ²University of Arizona College of Medicine, Phoenix, AZ</td>
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<td>Evan Sirls¹, Rachel Pfannes², Larry T Sirls³</td>
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<td>¹Beaumont Health, ²University of Michigan, ³Beaumont Health, Oakland University William Beaumont School of Medicine</td>
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<th>Poster #NM108</th>
<th>FEMALE PELVIC MEDICINE AND RECONSTRUCTIVE SURGEONS AND THEIR RELATIONSHIPS TO INDUSTRY: ANALYSIS OF SUNSHINE ACT OPEN PAYMENTS FROM 2014-2017</th>
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<td>Seth Teplitsky, Kevin Xie, Tomy Perez, MD, Patrick Shenot, MD</td>
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<td>Department of Urology, Thomas Jefferson University Hospital, Philadelphia, Pennsylvania</td>
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<td>Presented By: Seth Teplitsky, BS</td>
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<th>Poster #NM109</th>
<th>MESHMERIZED: DOES THE LITERATURE SUPPORT THE MESH HYPE?</th>
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<td>Grace Chen¹, Carrie Stewart², Karyn Eilber, Principle Investigator³</td>
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<td>¹Dept. Urology, The Ohio State University College of Medicine, ²Dept. Urology, Cedars-Sinai Medical Center, ³Dept. Urology, Cedars-Sinai Medical center</td>
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<td>Presented By: Grace Chen</td>
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Neuromodulation/OAB Moderated Podium Session
Friday, March 1, 2019
4:00 p.m. – 5:00 p.m.
Moderators: Raul Orfoldica, MD
Ajay K. Singla, MD

4:00 p.m. #27 WITHDRAWN

4:10 p.m. #28 AUTOMATED CLOSED-LOOP STIMULATION TO INHIBIT NEUROGENIC BLADDER OVERACTIVITY
SJA Majerus¹, CT Nguyen², SW Brose³, GA Nemunaitis⁴, MS Damaser⁵, DJ Bourbeau⁶
¹Advanced Platform Technology Center, Louis Stokes Cleveland VA Medical Center, Cleveland, OH, USA
²Dept. of Biomedical Engineering, Lerner Research Institute and Dept. of Biomedical Engineering, Lerner Research Institute, Cleveland Clinic
³Division of Urology, MetroHealth Medical Center
⁴Cleveland FES Center, Syracuse VA Medical Center, Syracuse, NY, Physical Medicine and Rehabilitation, SUNY Upstate Medical University,
⁵Cleveland FES Center, Physical Medicine and Rehabilitation, MetroHealth Medical Center,
⁶Advanced Platform Technology Center, Louis Stokes Cleveland VA Medical Center and Dept. of Biomedical Engineering, Lerner Research Institute, Cleveland Clinic,
⁷Cleveland FES Center, Louis Stokes Cleveland Dept of Veterans Affairs Medical Center, Physical Medicine and Rehabilitation, MetroHealth Medical Center, USAFES Center
Presented By: Dennis Bourbeau, PhD

4:20 p.m. #29 DO AMPLITUDES IN STAGE I SACRAL NERVE STIMULATION AFFECT STAGE II IMPLANTATION AND REVISION RATES IN OVERACTIVE BLADDER? A FOLLOW-UP STUDY
Emily Zhang, BS, Howard Goldman, MD, Sandip Vasavada, MD, Courtenay Moore, MD, Raymond Rackley, MD, Bradley Gill, MD, MS
Cleveland Clinic, Cleveland, OH
Presented By: Emily Zhang, BS

4:30 p.m. #30 THREE-YEAR FOLLOWUP RESULTS OF A PROSPECTIVE, MULTICENTER STUDY WITH A WIRELESS IMPLANTABLE TIBIAL NERVE STIMULATOR (RENOVA ISTIM SYSTEM) IN PATIENTS WITH OVERACTIVE BLADDER
Philip van Kerrebrouck¹, Guiseppe A. Digesu², Sohier Elniel³, John P.F.A. Heesakkers⁴
¹Maastricht University Medical Center, Maastricht, The Netherlands,
²St. Mary's Hospital, London, UK,
³Department of Uro-Neurology, National Hospital of Neurology and Neurosurgery, London, UK,
⁴Department of Urology 610, Radboud University Medical Center, Nijmegen, The Netherlands
Presented By: Philip van Kerrebrouck, MD, PhD

4:40 p.m. #31 IMPROVING PATIENT EXPERIENCE WITH SACRAL NEUROMODULATION: A HUMAN FACTORS APPROACH
Tara Cohen, PhD¹, Claire S. Burton, MD², Sarah Francis, MA¹, Deven Patel, MD¹, Nabil Othman, MD¹,
Patrick Lam, MD¹, A. Lenore Ackerman, MD, PhD¹, Karyn Eiber, MD¹, Jennifer T. Anger, MD, MPH¹
¹Cedars Sinai Medical Center, ²University of California Los Angeles
Presented By: Claire S. Burton, MD

4:50 p.m. #32 PUDENDAL NEUROMODULATION FOR PELVIC PAIN: OPTIMIZING PATIENT SELECTION
Iryna Crescenze, Giulia Lane, MD, Priyanka Gupta
University of Michigan
Presented By: Iryna Crescenze, MD
**IC/Pelvic Pain/Geriatrics/BPH Moderated Poster Session**

Friday, March 1, 2019

4:00 p.m. – 5:00 p.m.

Moderators: Rizwan Hamid, FRCS(Urol), MD(Res)
Elizabeth B. Takacs, MD

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<th>Poster #M29</th>
<th>GENE EXPRESSION PROFILES IN URINARY BLADDER MUSCOSA ARE HIGHLY CORRELATED WITH ANESTHETIZED BLADDER CAPACITY IN IC/BPS PATIENTS</th>
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<td>¹Wake Forest Institute for Regenerative Medicine, Department of Urology, ²Wake Forest Baptist Medical Center, Department of Urology</td>
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<th>Poster #M30</th>
<th>PCR BASED URINARY TRACT INFECTION (UTI) ANALYSIS COMPARED TO TRADITIONAL URINE CULTURE IN IDENTIFYING SIGNIFICANT UROPATHOGENS IN SYMPTOMATIC PATIENTS</th>
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<td>Larry T. Sirls II, MD ¹, Mohammad Jafri¹, Frank Burks¹, Howard Korman¹, David Banouch², Erik Avaniss-Aghajani², Michael Opel², Natalie Luke², Colleen Kelly², Kirk J. Wojno⁴</td>
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<td>¹Beaumont Health, ²Pathnostics, ³Primex Clinical Laboratories, ⁴Comprehensive Urology</td>
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<th>Poster #M31</th>
<th>THE OUTCOMES OF MALE PATIENTS WITH ACUTE URINARY RETENTION AND POST-OBSTRUCTIVE DIURESIS</th>
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<td>Asaf Fishelevitz, Ilan Leibovitch, Michael Vainrib</td>
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<td>Meir Medical Center</td>
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<td>Presented By: Asaf Fishelevitz, MD</td>
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<tr>
<th>Poster #M32</th>
<th>IS THERE A ROLE FOR SURGICAL TREATMENT IN PATIENTS WITH PARKINSON’S DISEASE AND BENIGN PROSTATIC OBSTRUCTION?</th>
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<td>Benoit Peyronnet, MD¹, Gregory Vurture⁵, Victor Vanaldenwerelt¹, Francois Tariel¹, Romain Mathieu, MD⁴, Benjamin Pradere, MD⁴, Sébastien Vincendeau, MD⁴, Franck Bruyère, MD⁴, Jose-Alberto Palma-Cardozo, MD⁶, Horacio Kaufmann, MD⁷, Andrew Feigin, MD⁷, Steven Frucht, MD⁷, Victor Nitti, MD⁷, Benjamin Brucker, MD⁷</td>
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<tr>
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<td>¹University of Rennes, ⁵New York University, ⁶University of Tours, ⁷University of Rennes, ⁸New York University</td>
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<td>Presented By: Benoit Peyronnet, MD</td>
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<th>Poster #M33</th>
<th>FALLS OR FRACTURES AND ANTICHOLINERGIC BURDEN ARE ASSOCIATED WITH HIGHER ANNUAL ALL-CAUSE HEALTHCARE COSTS AMONG THOSE WITH OVERACTIVE BLADDER</th>
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<td>Basia Rogula, MSc¹, Greta Lozano-Ortega, MSc¹, Katherine Gooch, PhD, MAppEpi², Carol Schermer, MD, MPH², David Walker, PhD², Shelagh Szabo, MSc¹, Alison Deighton, BAsC², Noll Campbell, PharmD, MS³</td>
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<td>¹Broadstreet Health Economics Outcomes Research, Vancouver, BC, ²Astellas Pharma Global Development, Inc., Northbrook, IL, ³ Purdue University College of Pharmacy, West Lafayette, IN</td>
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<td>Presented By: Basia Rogula, MSc</td>
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Poster #NM110

BACTERIAL BIOFILMS FORM AND PROGRESS ON INDWELLING URINARY CATHETERS OVER TIME
Glenn T. Werneburg, MD, PhD1,2, Anh Nguyen1,2, Nadine S. Henderson1, Amanda L. Le Sueur, PhD3, Anthony T. Corcoran, MD1, Aaron E. Katz, MD3, Jason Kim, MD1, Annie J. Rohan, PhD1, David G. Thanassi, PhD1
1Stony Brook University, 2Cleveland Clinic, 3NYU Winthrop Hospital
Presented By: Glenn T. Werneburg, MD, PhD

Poster #NM111

URINARY TRACT INFECTIONS: LISTENING TO THE PATIENTS. EMPLOYING LARGE-SCALE SOCIAL MEDIA ANALYTICS TO UNDERSTAND PUBLIC KNOWLEDGE AND EXPERIENCE
Yuliya Zektser1,2,3, Gabriela Gonzalez1,4, Carine Khalil, PhD2,3, Kristina Vaculik2,3, Corey Arnold, PhD5, Christopher V. Almario, MD, MSHPM6,7, Brennen M.R. Spiegel, MD, MSHPM6,7, Jennifer T. Anger, MD, MPH6
1David Geffen School of Medicine, University of California, Los Angeles, CA, 2Division of Health Services Research, Cedars-Sinai Medical Center, Los Angeles, CA, 3Cedars-Sinai Center for Outcomes Research and Education, Los Angeles, CA, 4Department of Surgery, Division of Urology, Cedars-Sinai Medical Center, Los Angeles, CA, 5Medical Imaging Informatics, Department of Radiology, UCLA, Los Angeles, CA, 6Division of Informatics, Cedars-Sinai Medical Center, Los Angeles, CA, 7Division of Digestive and Liver Diseases, Cedars-Sinai Medical Center, Los Angeles, CA
Presented By: Gabriela Gonzalez, BS

Poster #NM112

PREDICTORS OF FEMALE SEXUAL DYSFUNCTION IN INTERSTITIAL CYSTITIS/BLADDER PAIN SYNDROME, OTHER CHRONIC PAIN CONDITIONS AND HEALTHY CONTROLS IN THE MAPP RESEARCH NETWORK
Renee Rolston1,2, Alisa Stephens-Shields3, Quentin Clemens4, John Krieger5, Craig Newcomb5, Jennifer Anger6, Catherine Bradley7, Bradley Erickson8, Karl Kreder9, Henry Lai9, Larissa Rodriguez8
1The University of Southern California, 2Jamaica Hospital Medical Center, 3Department of Biostatistics Epidemiology, University of Pennsylvania, 4University of Michigan, 5University of Washington, 6Cedars-Sinai Medical Center, 7University of Iowa, 8Washington University School of Medicine
Presented By: Renee Rolston, MD

Poster #NM113

WITHDRAWN

Poster #NM114

PATTERNS AND PREDICTORS OF RECURRENCE OF HUNNER LESIONS IN PATIENTS WITH HUNNER TYPE INTERSTITIAL CYSTITIS
Ji-Yeon Han1, Jung Hyun Shin2, Sung Tae Cho3, Myung-Soo Choo2
1Pusan National University Yangsan Hospital, 2Asan Medical Center, 3Hallym University School of Medicine
Presented By: Ji-Yeon Han, MD, PhD

Poster #NM115

COST OF RECURRENT URINARY TRACT INFECTION MANAGEMENT IN THE OUTPATIENT SETTING: A TIME-DRIVEN ACTIVITIES-BASED COSTING MODEL
Patrick M. Lec1, Alan L. Kaplan1, Victoria C. S. Scott1, Melissa Markowitz1, Lauren W. Thum2, David A. Haake3, Christopher S. Saigal4, Ja-Hong Kim1
1Department of Urology, David Geffen School of Medicine at UCLA, Los Angeles, CA, 2Urology Specialists, Sioux Falls, SD
Presented By: Melissa Markowitz, BA
ABSTRACT LISTING

Poster #NM116
REDUCING OVER-PRESCRIBING OF ANTIBIOTICS FOR SUSPECTED URINARY TRACT INFECTIONS IN A HEALTH SCIENCES CAMPUS STUDENT HEALTH SERVICE
Elisabeth M. Sebesta, MD1, Anika March, FNP2, Christopher Sayegh, MD2, Gen Li, PhD3, Michelle Love, MD4, Gina M. Badalato, MD1, Marcy Ferschneider, DO3, Kimberly L. Cooper, MD2
1Department of Urology, Columbia University Irving Medical Center, New York, NY, 2Student Health Service, Columbia University Irving Medical Center, New York, NY, 3Department of Biostatistics, Mailman School of Public Health, Columbia University, New York, NY
Presented By: Elisabeth M. Sebesta, MD

Poster #NM117
IDENTIFICATION OF INTERSTITIAL CYSTITIS AND CHRONIC PROSTATITIS PATIENT SUBTYPES USING K-MEANS CLUSTER ANALYSIS OF THEIR UROLOGIC AND NON- UROLOGIC PROFILES
James Thu, MD, Frederick Moh, Joel Vetter, Henry Lai
Washington University in St. Louis, Division of Urologic Surgery
Presented By: James Thu, MD

Poster #NM118
VULVODYNIA IS A RISK FACTOR FOR WORSENING PAIN AND GENERALIZED NON-PELVIC PAIN IN FEMALE PATIENTS WITH IC/BPS IN THE MAPP RESEARCH NETWORK
Christine Horton1, Robert Gallop2, Henry Lai3, James Quentin Clemens4, Larissa Rodriguez1
1Keck School of Medicine of USC, 2Westchester University, 3Washington School of Medicine in St. Louis, 4Michigan Medicine at University of Michigan
Presented By: Christine Horton, MD, MSCR

Poster #NM119
INCIDENCE AND TREATMENT OUTCOME OF ATYPICAL URETHRITIS IN FEMALES WITH LOWER URINARY TRACT SYMPTOMS OR PELVIC PAIN
Jessica J. Rueb, Laura L. Giusto, Patricia M. Zahner, Samir Desai, Courtenay K. Moore, Sandip P. Vasavada, Raymond R. Rackley, Michele Fascelli
Cleveland Clinic Foundation
Presented By: Michele Fascelli, MD

Poster #NM120
THE CLINICAL RATE OF ANTIBIOTIC CHANGE FOLLOWING EMPIRIC TREATMENT FOR SUSPECTED URINARY TRACT INFECTIONS
Jonathan Dokter, BS1, Laura Nguyen, MD2, Lauren Tennyson, MD2, Esther Han, D.O.3, Larry T. Sirls II, MD1,3
1Oakland University William Beaumont School of Medicine, Rochester, MI, United States, 2Department of Urology, McMaster University, Hamilton, ON, Canada, 3Female Pelvic Medicine and Reconstructive Surgery, Beaumont Health System, Royal Oak, MI, United States
Presented By: Jonathan Dokter, BS

Poster #NM121
PREDICTORS OF BLADDER CAPACITY IN INTERSTITIAL CYSTITIS/BLADDER PAIN SYNDROME
Stephen Walker1, Gopal Badlani2, Joao Zambon2, Whitney R. Smith, MD2, Jeffery Schachar2, Andre Plair2, Catherine Matthews2, Robert Evans2
1Wake Forest Institute for Regenerative Medicine, Department of Urology, 2Wake Forest Baptist Medical Center, Department of Urology
Presented By: Whitney R. Smith, MD

Poster #NM122
URINE PH VARIABILITY OVER TIME IN WOMEN WITH RECURRENT URINARY TRACT INFECTIONS
Jacqueline Chavez1, Alana Christie, MS2, Feras Alhalabi, MD1, Philippe Zimmern, MD1
1Department of Urology, UT Southwestern Medical Center, 2Simmons Comprehensive Cancer Center, UT Southwestern Medical Center
Presented By: Jacqueline Chavez
Poster #NM123

SMALL FIBER POLYNEUROPATHY IN HUNNER LESION AND NON-HUNNER LESION BLADDER PAIN SYNDROME
Esther Han, DO1, Lauren Tennyson, MD1, Jason Gilleran, MD1,2, Jamie Bartley, DO1,2, Kenneth Peters, MD1,2
1Beaumont Health, 2Oakland University William Beaumont School of Medicine
Presented By: Esther Han, DO

Poster #NM124

INTUBATED FLOW IN MEN MUST BE COMPARED TO FREE FLOW TO AVOID OVERESTIMATING THE DIAGNOSIS OF BLADDER OUTLET OBSTRUCTION
Françoise A. Valentini, MD, PhD1, Peter Rosier, MD, PhD2, Philippe Zimmern, MD2, Pierre Nelson, PhD2
1Hôpital Rothschild, Paris, France, 2University Medical Center Utrecht, Utrecht, The Nederlands, 3UT Southwestern, Dallas, TX, 4Hôpital Rothschild, Paris, France
Presented By: Françoise A. Valentini, MD, PhD

Poster #NM125

PROSTATIC URETHRAL LIFT BASELINE PREDICTORS OF RESPONSE
David O. Sussman, MD1, Steven A. Kaplan, MD2, Claus G. Roehrborn, MD1
1New Jersey Urology, 2Weill Cornell Medical Center, 3University of Texas Southwestern Medical Center
Presented By: David O. Sussman, DO

Poster #NM126

PREDICTIVE FACTORS OF URINARY INCONTINENCE AFTER GREENLIGHT® LASER ENUCLEATION OF THE PROSTATE (GreenLEP)
Benoit Peyronnet, MD
University of Rennes
Presented By: Benoit Peyronnet, MD

Poster #NM127

COMPARISON OF ALPHA-BLOCKER PRESCRIBING HABITS BETWEEN UROLOGISTS AND PRIMARY CARE PHYSICIANS
Kevin J. Chua, BS1, Gen Li, PhD2, Matthew Rutman, MD3, Elias Hyams, MD3
1SUNY Downstate Medical Center, Department of Urology, Brooklyn, NY, 2Columbia University, Department of Biostatistics, New York, NY, 3Columbia University Medical Center, Department of Urology, New York, NY
Presented By: Kevin J. Chua, BS

Poster #NM128

IMPACT OF DAY OF THE WEEK ON OUTCOMES OF BENIGN PROSTATIC HYPERPLASIA SURGICAL INTERVENTIONS
Navin Sabharwal1, Khaled Fareed2, James Ulchaker2, Bradley Gill1,2
1Lerner College of Medicine, Cleveland Clinic Education Institute, Cleveland, OH, USA, 2Department of Urology, Cleveland Clinic Glickman Urological and Kidney Institute, Cleveland, OH, USA
Presented By: Navin Sabharwal, BA

Poster #NM129

PROSTATE REDUCING SURGERY AFTER UROLIFT: TECHNICAL RISKS OF HOLMIUM LASER ENUCLEATION OF THE PROSTATE (HoLEP) VERSUS TRANSURETHRAL RESECTION OF THE PROSTATE (TURP)
Tomy Perez, MD, Ali Syed, MD, James Steward, MD, Jenny Guo, Seth Teplitsky, Akhil Das, MD
Department of Urology, Thomas Jefferson University Hospital, Philadelphia, Pennsylvania
Presented By: Seth Teplitsky, BS

Poster #NM130

PROSPECTIVE ASSESSMENT OF THE SEXUAL FUNCTION AFTER GREENLIGHT™ ENDOSCOPIC ENUCLEATION AND GREENLIGHT™180W XPS PHOToselective VAPORIZATION OF THE PROSTATE
Benoit Peyronnet, MD, Romain Huet, MD, Zine-Eddine Khene, MD, Gregory Verhoest, MD, Andrea Mamunta, MD, Karim Bensalah, MD PhD, Sébastien Vincendeau, MD, Romain Mathieu, MD
University of Rennes
Presented By: Benoit Peyronnet, MD
Poster #NM131  CAN WE AVOID TIME CONSUMING FREQUENCY-VOLUME CHART TO DIAGNOSE UNDERLYING PATHOPHYSIOLOGICAL MECHANISMS OF NOCTURIA IN SOME PATIENT POPULATIONS?  Benoît Peyronnet, MD, Siri Drangsholt, MD, Maria Arcila-Ruiz, MD, Rachael Sussman, MD, Ricardo Palmerola, MD, Dominique Pape, MD, Nirit Rosenblum, MD, Victor Nitti, MD, Benjamin Brucker, MD  New York University  Presented By: Benoît Peyronnet, MD

Poster #NM132  THE CLINIQUE PASTEUR SCORE FOR SCREENING OF SEVERE OBSTRUCTIVE APNEA SYNDROME IN PATIENTS PRESENTED WITH NOCTURNAL POLYURIA  Vincent Misrai, MD1, Benoît Peyronnet, MD2, Benjamin Pradere, MD3, Jean-Louis Pepin, MD PhD4, Atul Pathak, MD PhD5, David Attias, MD6  1Clinique Pasteur, Toulouse, France, 2University of Rennes, 3University of Grenoble, 4Clinique Pasteur, Toulouse, France  Presented By: Benoît Peyronnet, MD

Poster #NM133  ACUTE CARE EVENTS WITHOUT LONG-TERM IMPACT ON URINARY INCONTINENCE IN A GERIATRIC POPULATION  Siobhan M. Hartigan, MD1, Avantika Shah, MPH2, Emily Hollingsworth, MSW3, Casey Kowalik, MD3, Sophia Goodridge, MD3, Edward Vasilyevskis, MD, MPH4, Sandra Simmons, PhD5, Melissa Kaufman, MD, PhD5, Roger Dmochowski, MD, MMHC6, W. Stuart Reynolds, MD, MPH6  1University of Texas Southwestern Medical Center, Department of Urology, Dallas, TX, 2University of Texas Southwestern Medical Center, Department of Internal Medicine, Dallas, TX, 3University of Texas Southwestern Medical Center, Center for Quality Aging, Nashville, TN, 4University of Kansas Health System, Department of Urology, Kansas City, KS  Presented By: Siobhan M. Hartigan, MD

Poster #NM134  SAFETY AND EFFICACY OF CHRONIC SUPPRESSIVE THERAPY WITH NITROFURANTOIN IN OLDER WOMEN WITH RECURRENT URINARY TRACT INFECTIONS  Navin Maredia, BS1, Bonnie C. Prokesch, MD2, Michael Fanning, PA-C2, Alana Christie, MS3, Philippe Zimmern, MD3  1University of Texas Southwestern Medical Center, Dallas, TX, 2University of Texas Southwestern Medical Center, Department of Internal Medicine, Dallas, TX, 3University of Texas Southwestern Medical Center, Department of Urology, Dallas, TX  Presented By: Navin Maredia, BS

Poster #NM135  COMPARISON OF CLINICAL MEASURES OF FRAILTY IN OLDER PATIENTS UNDERGOING FEMALE PELVIC MEDICINE AND RECONSTRUCTIVE SURGERY (FPMRS) PROCEDURES  Katherine Amin, Dept. of Urology1, Dena Moskowitz, Dept. of Urology1, Wai Lee, Dept. of Urology1, Alvaro Lucioni, Dept. of Urology1, Kathleen C. Kobashi, Dept. of Urology1, May J. Reed, Dept. of Geriatric Med.2, Una J. Lee, Dept. of Urology1  1Virginia Mason Medical Center, 2University of Washington  Presented By: Katherine Amin, MD

Poster #NM136  OCTOGENARIAN PATIENTS ARE POORLY COMPLIANT WITH MAINTENANCE PERCUTANEOUS TIBIAL NERVE STIMULATION  Chris Du, BA1, Alexandra Siegal, BA1, William T. Berg, MD2, Zhenyue Huang, BA1, Colin Dabrowski, BS1, Steven Weissbart, MD2, Jason Kim, MD2  1Stony Brook School of Medicine, 2Stony Brook Hospital, Department of Urology  Presented By: William T. Berg, MD

Poster #NM137  PROSPECTIVE EVALUATION OF DAILY AND WEEKLY URINE PH VARIATIONS IN POSTMENOPAUSAL WOMEN WITH RECURRENT URINARY TRACT INFECTIONS  Jacqueline Chavez1, Alana Christie, MS2, Philippe Zimmern, MD1  1Department of Urology, UT Southwestern Medical Center, 2Simmons Comprehensive Cancer Center, UT Southwestern Medical Center  Presented By: Jacqueline Chavez
**Poster #NM138**

**CORRELATES OF 1-YEAR CHANGE IN QUALITY OF LIFE IN PATIENTS WITH UROLOGICAL CHRONIC PELVIC PAIN SYNDROMES**

J. Quentin Clemens\(^1\), Alisa Stephens-Shields\(^2\), Craig Newcomb\(^3\), Larissa Rodriguez\(^4\), H. Henry Lai\(^5\), Catherine Bradley\(^6\), Bruce Naliboff\(^7\), James Griffith\(^8\), Bayley Tape\(^9\), Priyanka Gupta\(^10\), Niloo Afari\(^11\), Steven Harte\(^1\), Eric Strachan\(^12\), J. Richard Landis\(^13\)

\(^1\)University of Michigan, \(^2\)University of Pennsylvania, \(^3\)University of Southern California, \(^4\)Washington University, \(^5\)University of Iowa, \(^6\)University of California, Los Angeles, \(^7\)Northwestern University, \(^8\)University of California, San Diego, \(^9\)University of Washington

Presented By: J. Quentin Clemens, MD

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**Poster #NM139**

**EVALUATION OF RECURRENT UTI-LIKE SYMPTOMS SHOULD PROMPT CONSIDERATION FOR ALTERNATIVE ETIOLOGIES**

Ashley Caron, BS\(^1\), Victoria Scott, MD\(^2\), Karyn Eliber, MD\(^3\), Jennifer Anger, MD\(^1\), A. Lenore Ackerman, MD, PhD\(^4\)

\(^1\)Department of Urology, Cedars-Sinai Medical Center, Los Angeles, CA, \(^2\)David Geffen School of Medicine at UCLA, Los Angeles, CA

Presented By: Ashley Caron, BS

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**Poster #NM140**

**WHAT CAN WE LEARN FROM WOMEN’S ONLINE DISCUSSIONS OF INTERSTITIAL CYSTITIS/BLADDER PAIN SYNDROME?**

Gabriela Gonzalez\(^1\), Yuliya Zektser\(^2\),\(^3\),\(^4\), Kristina Vaculik\(^5\), Carine Khaili, PhD\(^6\), Corey Arnold, PhD\(^7\), Christopher V. Almario, MD, MSHPM\(^8\),\(^9\),\(^10\), Brennan M.R. Spiegel, MD, MSHS\(^1\),\(^3\),\(^4\),\(^5\),\(^6\), Jennifer T. Anger, MD, MPH\(^7\)

\(^1\)David Geffen School of Medicine, University of California, Los Angeles, CA, \(^2\)Department of Surgery, Division of Urology, Cedars-Sinai Medical Center, Los Angeles, CA, \(^3\)Division of Health Services Research, Cedars-Sinai Medical Center, Los Angeles, CA, \(^4\)Cedars-Sinai Center for Outcomes Research and Education, Los Angeles, CA, \(^5\)Medical Imaging Informatics, Department of Radiology, UCLA, Los Angeles, CA, \(^6\)Division of Informatics, Cedars-Sinai Medical Center, Los Angeles, CA, \(^7\)Division of Digestive and Liver Diseases, Cedars-Sinai Medical Center, Los Angeles, CA

Presented By: Gabriela Gonzalez, BS

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**Poster #NM141**

**OUTCOMES OF DIODE LASER ENUCLEATION OF THE PROSTATE FOR BENIGN PROSTATIC HYPERPLASIA**

Seth Teplitsky, BS, Alex Uhr, MD, Joon Yau Leong, May Jean Counsilman, MD, Patrick Shenot, MD, Akhil Das, MD

Department of Urology, Thomas Jefferson University Hospital, Philadelphia, Pennsylvania

Presented By: Seth Teplitsky, BS

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**Poster #NM142**

**RELIEF OF LOWER URINARY TRACT SYMPTOMS AFTER MRI-GUIDED TRANSURETHRAL ULTRASOUND ABLATION (TULSA): SUBGROUP ANALYSES IN PATIENTS WITH SYMPTOMS OF BENIGN PROSTATIC HYPERPLASIA**

Dean Elterman, MD\(^1\), Gencay Hatiboglu, MD\(^2\), Khalil Hetou, MD\(^3\), James Reille, MD\(^4\), Robert Staruch, PhD\(^5\), Mathieu Burtynyk, PhD\(^6\), Joseph Chin, MD\(^7\)

\(^1\)University Health Network, University of Toronto, Toronto, Canada, \(^2\)University Hospital Heidelberg, Heidelberg, Germany, \(^3\)Western University, London Health Sciences Centre, London, Canada, \(^4\)Beaumont Health System, Royal Oak, Michigan, USA, \(^5\)Profound Medical, Mississauga, Canada

Presented By: Dean Elterman, MD, MSc, FRCS

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**Poster #NM143**

**SERUM PROSTATE SPECIFIC ANTIGEN LEVELS AFTER GREEN LASER ENUCLEATION OF THE PROSTATE (GreenLEP)**

Benoit Peyronnet, MD\(^1\), Enrique Rijo, MD\(^2\), Vincent Misrai, MD\(^3\), Shahin Tabatabaei, MD\(^4\), Giovanni Ferrari, MD\(^5\), Fernando Gomez-Sancha, MD\(^6\)

\(^1\)University of Rennes, \(^2\)Barcelona Private Hospital, \(^3\)Clinique Pasteur Toulouse, \(^4\)Massachussets General Hospital, \(^5\)Modena Hospital, \(^6\)Clinica Centtro Madrid

Presented By: Benoit Peyronnet, MD
**Poster #NM144**

**FACTORS CONTRIBUTING TO HOLMIUM LASER ENUCLEATION OF THE PROSTATE (HoLEP) INCOMPLETION**

Seth Teplitsky, Jenny Guo, Mihir Shah, MD, Ali Syed, MD, Tomy Perez, MD, May Jean Counsilman, MD, Patrick Shenot, MD, Akhil Das, MD

Department of Urology, Thomas Jefferson University Hospital, Philadelphia, Pennsylvania

Presented By: Mihir Shah, MD

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**Poster #NM145**

**VESICULAR CYSTITIS: A RARE FORM OF CHRONIC CYSTITIS**

Joseph J. Crivelli1, Jason Mull2, Philippe Zimmern1

1Dept. Of Urology, University of Texas Southwestern Medical Center, 2Dept. of Pathology, University of Texas Southwestern Medical Center

Presented By: Joseph J. Crivelli, MD

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**Poster #NM146**

**IMPACT OF URINE PH ON ANTIBIOTIC RESPONSE IN WOMEN WITH UROPATHOGENIC ESCHERICHIA COLI RECURRENT URINARY TRACT INFECTIONS**

Jacqueline Chavez2, Alana Christie, MS2, Feras Alhalabi, MD1, Philippe Zimmern, MD1

1Department of Urology, UT Southwestern Medical Center, 2Simmons Comprehensive Cancer Center, UT Southwestern Medical Center

Presented By: Jacqueline Chavez

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**Poster #NM147**

**FEAR, DESPARATION AND FRUSTRATION: WOMEN’S PERSPECTIVES REGARDING RECURRENT URINARY TRACT INFECTIONS**

Victoria C.S. Scott1, Lauren W. Thum2, Melissa Markowitz2, Taylor Sadun1, David A. Haake1, Sally L. Maliski2, Jennifer T. Anger1, Ja-Hong Kim1

1Department of Urology, David Geffen School of Medicine at UCLA, Los Angeles, CA, 2Urology Specialists, Sioux Falls, SD, 3School of Nursing, University of Kansas Medical Center, Kansas City, KS, 4Department of Urology, Cedars Sinai Medical Center, Beverly Hills, CA

Presented By: Victoria C.S. Scott, MD

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**Poster #NM148**

**EVIDENCE LINKING COMESTIBLES TO INTERSTITIAL CYSTITIS AND BLADDER PAIN SYNDROME**

Carrie A. Stewart, Seija Maniskas, A. Lenore Ackerman, Karyn Eliber, Stephen Freedland, Jennifer Anger

Cedars-Sinai Medical Center

Presented By: Carrie A. Stewart, MD

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**Poster #NM149**

**A COMPARISON OF PRE- AND POST-OPERATIVE BLADDER/BOWEL SYMPTOMS AMONG PATIENTS UNDERGOING COMPLETE SURGICAL ENDOMETRIOSIS RESECTION**

Rachael Mazzamurro-Romer1, Chung Hwa Yi, MD2, Veronica Triaca, MD2

1Geisel School of Medicine at Dartmouth, 2Concord Hospital, Pelvic Medicine Program

Presented By: Annah Vollstedt, MD

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**Poster #NM150**

**PAIN CONTROL FOR INTERSTITIAL CYSTITIS PATIENTS UNDERGOING PELVIC RECONSTRUCTIVE SURGERY**

Tess Crouss, MD1, Briana Mancenido, Student1, Xibe Jia, MD1, Neha Rana, MD1, Caitlin Lim, DO2, Kristene Whitmore, MD3

1Drexel University, 2Einstein Urology, 3Philadelphia Urosurgical Associates PC

Presented By: Tess Crouss, MD

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**Poster #NM151**

**WITHDRAWN**

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**Poster #NM152**

**ASSESSING THE IMPACT OF UROLOGY RESIDENT INVOLVEMENT ON OVERALL PATIENT SATISFACTION**

Ariel Moradzadeh, MD, Colby P. Souders, MD, Alein Chun, PhD, Patricia Hain, MSN, RN, Dulce Baranda, MSN, RN, Karyn Eliber, MD

Cedars-Sinai Medical Center, Los Angeles, CA

Presented By: Colby P. Souders, MD
Poster #NM153  A QUALITY INITIATIVE TO CONFIRM PENICILLIN ALLERGY, AND REDUCE OVERLABELING OF PENICILLIN ALLERGY, IN AN AGING FEMALE POPULATION
Svjetlana Lozo, Author, Daniel Wagner, Co-Author, Roger Goldberg, Co-Author, Nirav Shah, Co-Author
Northshore University Health System
Presented By: Svjetlana Lozo, MD, MPH

Poster #NM154  URINARY TRACT INFECTIONS IN GERIATRIC AMBULATORY PATIENTS WITH INDWELLING CATHETERS
Lauren E. Tennyson1, Laura Nguyen1, Evan Sirs1, Esther Han1, Patrick Vecellio2, Kim Killinger1,2, Jamie Bartley1,2, Jason Gilleran1,2, Kenneth M Peters1,2, Larry T Sirs1,2
1Department of Urology, Beaumont Health, Royal Oak, MI, 2Oakland University William Beaumont School of Medicine, Rochester, MI
Presented By: Lauren E. Tennyson, MD

Poster #NM155  THE POTENTIAL ROLE OF NO-PATHWAY-RELATED SUPPLEMENTS ON ERECTILE DYSFUNCTION: A SYSTEMATIC REVIEW AND META-ANALYSIS
Hyeong Gon Kim1, Aram Kim1, Young-Jin Park1, Ji-Yeon Han2, Woo Suk Choi1, Hyoung Keun Park1, Sung Hyun Paick1, Hyun-Woo Kim1, Yong Yong Choi1, YongTae Kim1
1Department of Urology, Konkuk University Medical Center, Konkuk University School of Medicine, 2Department of Urology, Pusan National University Yangsan Hospital, Korea
Presented By: Hyun-Woo Kim, MD

Poster #NM156  TOILETING BEHAVIORS AND LOWER URINARY TRACT SYMPTOMS AMONG FEMALE PHYSICIANS
Aaron Perlow1, Cara Joyce, PhD2, Elizabeth R. Mueller, MD2, Colleen M. Fitzgerald, MD, MS3
1Loyola University Chicago Stritch School of Medicine, 2Loyola University Chicago Stritch School of Medicine Department of Public Health and Clinical research office Biostatistics Core Director, 3Loyola University Chicago SSOM, Dept of OB/GYN, division of FPMRS
Presented By: Colleen M. Fitzgerald, MD

Poster #NM157  NOVEL SYMPTOM QUESTIONNAIRE FOR THE DIFFERENTIAL DIAGNOSIS OF DETRUSOR UNDERACTIVITY AND BLADDER OUTLET OBSTRUCTION IN MEN
Aram Kim1, Ji-Yeon Han2, Young-Jin Park1, Woo Suk Choi1, Hyoung Keun Park1, Sung Hyun Paick1, Hong Yong Choi1, Hyeong Gon Kim1, YongTae Kim1, Hyun Woo Kim1
1Department of Urology, Konkuk University Medical Center, Konkuk University School of Medicine, 2Department of Urology, Pusan National University Yangsan Hospital, Korea
Presented By: Hyeong Gon Kim

Poster #NM158  PROSTATE STONES FOLLOWING RADIATION FOR PROSTATE CANCER: THE GIFT THAT KEEPS ON GIVING
Jerry Blaivas, MD1,2,3, Christine Liaw, MD1, Michael Palese, MD1, Eric Li, BA2,3
1Department of Urology at the Icahn School of Medicine at Mount Sinai, 2SUNY Downstate College of Medicine, 3Institute for Bladder and Prostate Research
Presented By: Christine Liaw, MD

Poster #NM159  OVERUSE OF BOTOX IN UROLOGIC SURGERY: A TREND OR AN EXCEPTION?
Bristol B. Whiles, MD1, Joshua Caldwell, BS2, Priya Padmanabhan, MD, MPH, FACS1
1University of Kansas Health System, Department of Urology, Kansas City, KS, 2Harvard Medical School, Boston, MA
Presented By: Bristol B. Whiles, MD

Poster #NM160  RE-EVALUATION OF BIRTH TRENDS AND PREGNANCY COMPLICATIONS AMONG FEMALE UROLOGISTS: HAVE WE MADE ANY PROGRESS?
Victoria Scott1, Lori B. Lerner1, Jennifer T. Anger2, Michelle Van Kuiken1, A. Lenore Ackerman2
1Department of Urology, David Geffen School of Medicine at UCLA, Los Angeles, CA, 2Division of Urology, Cedars Sinai Medical Center, Beverly Hills, CA
Presented By: Victoria Scott, MD
Poster #NM161  FACTORS AFFECTING PATIENT FOLLOW-UP AFTER FIRST TIME INTRAVESICAL INJECTION OF ONABOTULINUMTOXINA IN IDIOPATHIC OVERACTIVE BLADDER PATIENTS
Wai Lee¹, Chris Du², Ryan Donahue¹, Alvaro Lucioni¹, Kathleen C. Kobashi¹, Una J. Lee¹
¹Department of Urology, Virginia Mason, Seattle, WA, ²Department of Urology, Stony Brook Medicine, Stony Brook, NY
Presented By: Wai Lee, MD

Poster #NM162  ADD-ON TREATMENT WITH MIRABEGRON IN MEN WITH BENIGN PROSTATIC HYPERPLASIA COMPLAINING PERSISTENT STORAGE SYMPTOMS AFTER TAMSULOSIN MONOTHERAPY IMPROVES QUALITY OF LIFE
Su Jin Kim, PhD¹, Sung Tae Cho, PhD², Tae Wook Kang¹, Ki Don Chang¹, Jae Hung Jung, PhD¹, Hyunchul Chung, PhD², Khae Hawn Kim, PhD³
¹Department of Urology, Yonsei University Wonju College of Medicine, Wonju, Korea, ²Department of Urology, Hallym University Kangnam Sacred Heart Hospital, Hallym University College of Medicine, Seoul, Korea, ³Department of Urology, Gachon University Gil Medical Center, Gachon University School of Medicine, Incheon, Korea
Presented By: Su Jin Kim, PhD

Poster #NM163  SPINAL CORD INJURY AND SOCIAL MEDIA: PREVALENCE OF LOWER URINARY TRACT CONVERSATIONS ACROSS MULTIPLE PLATFORMS
Kyle Latack, BA¹, Evgeniy Kreydin, MD²
¹Keck School of Medicine of USC, Los Angeles, CA, ²Keck School of Medicine of USC, Institute of Urology, Los Angeles, CA
Presented By: Kyle Latack, BA

Poster #NM164  CAN PATIENTS PREDICT THEIR VOIDED VOLUMES FOR BLADDER DIARIES?
Mitali Kini¹, Dominique Thomas¹, Nadir Zaidi², Debra D’Angelo¹, Victoria Cooley¹, Paul Christos¹
¹Weill Cornell Medical College, ²Weill Cornell Medical College
Presented By: Mitali Kini, BS

Poster #NM165  DEVELOPMENT OF A FEMALE UROLOGY VOIDING DYSFUNCTION PHENOTYPE: OVERACTIVE BLADDER
Samir Derisavifard, Laura L. Giusto, Patricia M. Zahner, Jessica J. Rueb, Daniel A. Shoskes, Sarah C. Vij, Courtenay K. Moore
Cleveland Clinic Foundation
Presented By: Samir Derisavifard, MD
Video Session II
Saturday, March 2, 2019
7:00 a.m. – 8:00 a.m.
Moderators: Lysanne Campeau, MDCM, PhD, FRCSC
Lara MacLachlan, MD

Video #7  VAGINAL EVISCERATION
Philippe Zimmern, MD1, Farshid Araghizadeh, MD2, Deborah Hess, MD1, Rena Malik, MD1
1Department of Urology, UT Southwestern Medical Center, 2Department of Colon Rectal, UT Southwestern Medical Center
Presented By: Philippe E. Zimmern, MD, FACS, FPMRS

Video #8  ROBOTIC ASSISTED LAPAROSCOPIC BLADDER NECK RECONSTRUCTION: COMPLETE AVULSION FROM TRAUMA
Sunil Patel, MD, Fed Ghali, MD, Unwanaobong Nseyo, MD, Jill Buckley, MD, Stephen Unterberg, MD
UCSD
Presented By: Stephen Harold Unterberg, MD

Video #9  A CLITORAL CYST OF EPIDERMAL PROPORTIONS
Angela DiCarlo-Meacham, MD1, Daniel Gruber, MD2, Katherine Dengler, MD1, Andrea Snitchler, MD3
1Department of Female Pelvic Medicine and Reconstructive Surgery, Walter Reed National Military Medical Center, Bethesda, MD, 2Chair, Department of Female Pelvic Medicine and Reconstructive Surgery, Walter Reed National Military Medical Center, Bethesda, MD, 3Department of Pathology, Walter Reed National Military Medical Center, Bethesda, MD
Presented By: Angela DiCarlo-Meacham, MD

Video #10  ROBOTIC YV PLASTY FOR VESICOURETHRAL ANASTOMOTIC STENOSIS FOLLOWING RADICAL PROSTATECTOMY
Ricardo Palmerola, Fellow, Geolani Dy, Fellow, Lee Zhao, Assistant Professor
NYU Langone Medical Center
Presented By: Ricardo I. Palmerola, MD

Video #11  AUTOLOGOUS FASCIAL MINI-JUPETTE SLING FOR THE MANAGEMENT OF POST-PROSTATECTOMY CLIMACTURIA
Judy Choi, MD, Zhamshid Okhunov, MD, Francis Jefferson, Farouk M. El-Khatib, Catherine Nguyen, MD, James Furr, MD, Faysal A. Yafi, MD
Department of Urology, UC Irvine Health
Presented By: Judy Choi, MD

Video #12  RETROGRADE PERCUTANEOUS TECHNIQUE OF LEAD PLACEMENT FOR CHRONIC TIBIAL NERVE STIMULATION, AN OFFICE BASED PROCEDURE
Larry T Sirls, Kenneth M Peters
Beaumont Health
Presented By: Larry Thomas Sirls, II
Female Urology/Incontinence Moderated Podium Session
Saturday, March 2, 2019
8:00 a.m. – 9:30 a.m.
Moderators: Lindsey Cox, MD
Adonis K. Hijaz, MD

8:00 a.m. #33
PROPHYLACTIC MIDURETHRAL SLINGS AT THE TIME OF PELVIC ORGAN PROLAPSE REPAIR SURGERY TO PREVENT DE-NOVO STRESS URINARY INCONTINENCE- A NEED TO REAPPRAISE?
Kai B. Dallas, MD1, Lisa Rogo-Gupta2, Raveen Syan1, Ekene Enemchukwu1, Christopher S. Elliott1,3
1Stanford University, Department of Urology, Stanford, CA, 2Stanford University, Department of Obstetrics and Gynecology, Stanford, CA, 3Santa Clara Valley Medical Center, Department of Urology, San Jose, CA
Presented By: Kai B. Dallas, MD

8:10 a.m. #34
STRESS INCONTINENCE SURGERY IS NOT ASSOCIATED WITH PELVIC MALIGNANCY: THE RESULTS OF A LARGE POPULATION-BASED STUDY
Humberto R. Vigil, MD, BSc, FRCSC1, Christopher Wallis, PhD, MD1, Joseph LaBossiere, MSc, MD, FRCSC1,2, Sender Herschorn, MD, MDCM, FRCSC1, Lesley Carr, MD, FRCSC1
1Sunnybrook Health Sciences Centre, University of Toronto, Toronto, ON, 2University of Alberta, Department of Surgery, Division of Urology, Edmonton, AB
Presented By: Humberto R. Vigil, MD, BSc, FRCSC

8:20 a.m. #35
OVERUSE OF SPECIALTY CARE FOR WOMEN WITH URINARY INCONTINENCE
Claire S. Burton, MD1, Christopher Gonzalez-Alabastro1, Eunice Choi1, Pooja Parameshwar1, Gabriela Gonzalez1, Catherine Bressee, MS2, Karyn Eilber, MD2, A. Lenore Ackerman, MD, PhD2, Jennifer T. Anger, MD, MPH2
1University of California Los Angeles, 2Cedars Sinai Medical Center
Presented By: Claire S. Burton, MD

8:30 a.m. #36
EFFICACY OF SELF-REPORTED DATABASES
Ashley Caron, BS1, Colby Souders, MD1, Ndidiamaka Obi2, Khasiah Clark2, Karyn Eilber, MD1, Jennifer Anger, MD, MPH2
1Department of Urology, Cedars-Sinai Medical Center, Los Angeles, CA, 2College of Science and Health, Charles Drew University of Medicine and Science, Los Angeles, CA
Presented By: Ashley Caron, BS

8:40 a.m. #37
LONG-TERM OUTCOMES OF AUTOLOGOUS PUBOVAGINAL SLING FOR STRESS URINARY INCONTINENCE
Katherine Amin, Dept. of Urology1, Dena Moskowitz, Dept. of Urology1, Anh T. Nguyen, Stony Brook Univ. Sch. of Med.2, Fred Govier, Dept. of Urology3, Alvaro Lucioni, Dept. of Urology3, Kathleen C. Kobashi, Dept. of Urology1, Una J. Lee, Dept. of Urology1
1Virginia Mason Medical Center, 2Stony Brook University, 3Virginia Mason Medical Cetner
Presented By: Katherine Amin, MD

8:50 a.m. #38
DO WE NEED GENDER SPECIFIC GUIDELINES?: INCIDENCE OF SIGNIFICANT FINDINGS OF MICROHEMATURIA WORKUP IN WOMEN
Daniel E. Rabinowitz1,2, Andrew Wood1,2, Allison Marziliano1, Andre Perez-Orozco1, Michael Diefenbach1, Simon Hall1, Justin Han1, Allison Polland2
1Northwell Health, 2Maimonides Medical Center
Presented By: Daniel E. Rabinowitz, MD

9:00 a.m. #39
NUMEROUS SOCIOECONOMIC AND ETHNIC FACTORS PREDICT RECEIVING ADVANCED OAB THERAPIES IN A COMMERCIALLY INSURED POPULATION
Raveen Syan, Amy Zhang, Ekene Enemchukwu
Stanford University, Department of Urology
Presented By: Raveen Syan, MD
9:10 a.m.  #40  TRANSVAGINAL MESH LITIGATION HAS SIGNIFICANT GEOGRAPHIC VARIATION
Colby Souders, MD1, Lynn McClelland, JD, MPH2, Ashley Caron1, Mohanad Alazzeh3, Brian Zukotynski3, A. Lenore Ackerman, MD, PhD1, Karyn Eilber, MD1, Jennifer Anger, MD, MPH1
1Department of Urology, Cedars-Sinai Medical Center, Los Angeles, CA, 2Hugh Hazel Darling Law Library at the University of California Los Angeles School of Law, Los Angeles, CA, 3David Geffen School of Medicine at UCLA, Los Angeles, CA
Presented By: Colby P. Souders, MD

9:20 a.m.  #41  OUTCOMES OF MIDURETHRAL SLINGS IN THE OBESE WOMAN
James E. Pilkington, MD1, Adnan Fazili1, Clifton F. Frilot II, PhD2, Alex Gomelsky, MD1
1LSUHSC-Shreveport, 2LSU-Shreveport School of Allied Health
Presented By: James E. Pilkington, MD
LUTS/Voiding Dysfunction/Neurogenic Bladder Moderated Podium Session
Saturday, March 2, 2019
8:00 a.m. – 9:30 a.m.
Moderators: Gamal M. Ghoniem, MD, FACS, ABU/FPMRS
Sovrin M. Shah, MD

8:00 a.m. #42 WITHDRAWN

8:10 a.m. #43 AN ALTERNATIVE INJECTION PARADIGM FOR THE TREATMENT OF OVERACTIVE BLADDER WITH ONABOTULINUMTOXINA IS ASSOCIATED WITH A LOW INCIDENCE OF CLEAN INTERMITTENT CATHETERIZATION IN FEMALE PATIENTS
Scott A. MacDiarmid¹, David Glazier², Andrew Shapiro², Kurt McCammon¹, Rebecca McCrery⁵, Barry Jarnagin⁶, Amin Boroujerdi⁷, Zane Bai⁶, Gina Gao⁷, Anand Patel⁷
¹Adult Urology Specialists, ²Virginia Urology, ³Chesapeake Urology, ⁴Eastern Virginia Medical School, ⁵Adult Pediatric Urology Urogynecology, PC, ⁶Center For Pelvic Health, ⁷Allergan, Inc.
Presented By: Scott A. MacDiarmid, MD

8:20 a.m. #44 REAL WORLD PERFORMANCE OF SNM AND ONABOTULINUMTOXIN A FOR OAB: FOCUS ON SAFETY AND COST
Mitali Kini¹, J. Quentin Clemens², Dominique Thomas¹, Tianyi Sun¹, Art Sedrakyan¹
¹Weill Cornell Medical College, ²Michigan Medicine
Presented By: Mitali Kini, BS

8:30 a.m. #45 PREVALENCE OF LOWER URINARY TRACT SYMPTOMS (LUTS) IN YOUNG NULLIGRAVID WOMEN
Casey Kowalik¹, Adam Daily¹, Sophia D Goodridge¹, Siobhan Hartigan¹, Melissa R Kaufman², Roger R Dmochowski¹, W Stuart Reynolds²
¹Kansas University Medical Center, ²Vanderbilt University Medical Center
Presented By: Casey Kowalik, MD

8:40 a.m. #46 INCREASING THERAPY EFFECT OVER TWELVE WEEKS WITH THE NURO™ PERCUTANEOUS TIBIAL NEUROMODULATION SYSTEM IN DRUG NAÏVE PATIENTS WITH OVERACTIVE BLADDER SYNDROME (OAB)
Kathleen C. Kobashi¹, Peter Sand², Eric Margolis³, Steven Siegel⁴, Salli Khandwala⁵, Diane Newman⁶, Victor Nitti⁷, Scott A. MacDiarmid⁸, Anne Miller⁹, Fangyu Kan⁹
¹Virginia Mason Medical Center, Seattle, WA, ²NorthShore University Health-System, Evanston, IL, ³Urologic Research and Consulting LLC, Englewood, NJ, ⁴Metro Urology, Woodbury, MN, ⁵Advanced Urogynecology of Michigan PC, Dearborn, MI, ⁶Division of Urology, Penn Medicine, University of Pennsylvania, Philadelphia, PA, ⁷NYU School of Medicine, New York, NY, ⁸Alliance Urology Specialists, Greensboro, NC, ⁹Medtronic, Minneapolis, MN
Presented By: Kathleen C. Kobashi, MD, FACS

8:50 a.m. #47 FLUID RESTRICTION AND URINARY SYMPTOMS IN PATIENTS WITH MULTIPLE SCLEROSIS
Justina Tam, Alice Cheung, Jason Kim, Steven Weissbart
Stony Brook Medicine, Department of Urology
Presented By: Alice Cheung
9:00 a.m. #48 REASONS FOR CLEAN INTERMITTENT CATHETERIZATION CESSION AFTER SPINAL CORD INJURY: RESULTS FROM THE NEUROGENIC BLADDER RESEARCH GROUP (NBRG)
Darshan P. Patel, MD1, John Stoffel, MD2, Sean Elliott, MD, MS3, Sara Lenherr, MD, MS3, Angela Presson, PhD, MS3, Blayne Welk, MD, MSc3, Jeremy Myers, MD3
1University of Utah, 2University of Michigan, 3University of Minnesota, 4University of Western Ontario
Presented By: Darshan P. Patel, MD

9:10 a.m. #49 DO APPRECIABLE CHANGES IN THE MOTOR CAPABILITY TO PERFORM CLEAN INTERMITTENT CATHETERIZATION COME ABOUT WITH TIME AFTER TRAUMATIC SPINAL CORD INJURY?
Christopher S. Elliott1,2, Dimitar Zlatev3, James Crew4, Kazuko Shem4
1Stanford University Medical Center, Department of Urology, 2Santa Clara Valley Medical Center Division of Urology, 3Stanford University Medical Center Department of Urology, 4Santa Clara Valley Medical Center Department of Physical Medicine and Rehabilitation
Presented By: Christopher S. Elliott, MD, PhD

9:20 a.m. #50 LONG-TERM DISCONTINUATIONS OF BOTULINUM TOXIN A INTRADETRUSOR INJECTIONS FOR NEUROGENIC DETRUSOR OVERACTIVITY: A MULTICENTER STUDY
Benoit Peyronnet, MD1, Maximilien Baron, MD2, Annabelle Aublé, MD3, Juliette Hascoet, MD3, Evelyne Castel-Lacanal, MD3, Gabriel Miget4, Thomas Prudhomme, MD3, Andrea Manunta, MD3, Jean-Nicolas Cornu, MD PhD2, Xavier Gamé, MD PhD3
1University of Rennes, 2University of Rouen, 3University of Toulouse
Presented By: Benoit Peyronnet, MD
Pelvic Organ Prolapse/Reconstruction Moderated Poster Session  
Saturday, March 2, 2019  
8:00 a.m. – 9:30 a.m.  
Moderators: Gopal H. Badlani, MD  
Karyn S. Eilber, MD, FPMRS

Poster #M34  
INCIDENCE, RISK FACTORS, AND COST OF BLADDER INJURY DURING CESAREAN SECTION IN THE NATIONAL INPATIENT SAMPLE  
Christopher R. Haas, Elisabeth M. Sebesta, Joseph M. Caputo, MD Doreen E. Chung  
Columbia  
Presented By: Joseph M. Caputo, MD

Poster #M35  
PREVALENCE OF FEMALE URETHRAL STRICTURE AND SURGICAL TREATMENT IN THE FEMALE MEDICARE POPULATION  
Annah Vollstedt, MD, Amanda Swanton, MD, PhD, E. Ann Gormley, MD  
Dartmouth-Hitchcock Medical Center  
Presented By: Annah Vollstedt, MD

Poster #M36  
CYSTECTOMY AND URINARY DIVERSION FOR END-STAGE BLADDERS IS ASSOCIATED WITH LOW COMPLICATION RATES AND QUALITY OF LIFE IMPROVEMENT  
Margaret Higgins, MD, Lauren Hicks, APRN, Shubhum Gupta, MD  
University of Kentucky, Dept. Urology, Lexington KY  
Presented By: Margaret Higgins, MD

Poster #M37  
EARLY AND DELAYED COMPLICATIONS OF URINARY DIVERSION FOR BENIGN ETIOLOGY  
Jacqueline M. Zillioux, MD1, David Rapp, MD1, Luriel Smith-Harrison, MD2,3, Matthew Wang, BS1, Raymond Costabile, MD1  
1University of Virginia, Department of Urology, Charlottesville, VA, 2University of Virginia, Charlottesville, VA, 3Virginia Commonwealth University, Division of Urology, Richmond, VA  
Presented By: Jacqueline M. Zillioux, MD

Poster #M38  
OUTCOMES OF URINARY DIVERSION CREATED FOR LATE ADVERSE EFFECTS OF GYNECOLOGIC RADIOTHERAPY  
Daniel W. Smith, MD1, John T. Stoffel, MD2, Joseph Pariser, MD1, Jacob Albersheim-Carter, MD1, Rachel Moses, MD2, Diana O’Dell, MPH1, John Stoffel, MD1, Jeremy Myers, MD3, Sean Elliott, MD1  
1University of Minnesota Department of Urology, 2University of Utah Division of Urology, 3University of Michigan Department of Urology  
Presented By: John T. Stoffel, MD

Poster #M39  
EFFICACY AND SAFETY COMPARISON OF ROBOTIC-ASSISTED SACROCOLPOPEXY USING LIGHT-WEIGHT AND HEAVY-WEIGHT POLYPROPYLENE MESH  
Emily Huang, Deborah Hess, Philippe Zimmerm, Maude Carmel  
UT Southwestern  
Presented By: Emily Huang

Poster #M40  
HOW CAN A PATIENT FIND RELIABLE INFORMATION ONLINE? MACHINE LEARNING ALGORITHMS SUCCESSFULLY IDENTIFY THE QUALITY OF LAY-PERSON DIRECTED ARTICLES  
Kai B. Dallas, MD1, Lisa Rogo-Gupta2, Christopher S. Elliott1,3  
1Stanford University, Department of Urology, 2Stanford University, Department of Obstetrics and Gynecology, 3Santa Clara Valley Medical Center Division of Urology  
Presented By: Kai B. Dallas, MD

Poster #M41  
CADAVERIC STUDY OF SACRAL FIXATION TECHNIQUES FOR SACROCOLPOPEXY  
Giulia Lane, MD, Iryna Crescenze, MD, Payton Schmidt, MD, Anne Cameron, MD, Paholo Barboglio-Romo, MD, Priyanka Gupta, MD  
University of Michigan  
Presented By: Giulia Lane, MD
Poster #M42  TOTAL AUTOLOGOUS FASCIA LATA ANTERIOR AND APICAL SUSPENSION FOR THE TREATMENT OF PELVIC ORGAN PROLAPSE: EXPERIENCE IN THIRTY-THREE PATIENTS
Fahad Chaus, MD, MBA, Jayce Pangilinan, BA, Joel Funk, MD, Christian Twiss, MD
University of Arizona - Division of Urology, Tucson, Arizona
Presented By: Fahad M. Chaus, MD, MBA

Poster #M43  ADVANCED OAB THERAPIES ARE EQUALLY EFFECTIVE IN UNTREATED AND TREATED PELVIC ORGAN PROLAPSE PATIENTS
Raveen Syan1, Shannon L. Wallace, MD2, Michelle Torosis2, Eric Sokol2
1Stanford University, Department of Urology, 2Stanford University, Department of Urogynecology
Presented By: Raveen Syan
*Pelvic Organ Prolapse/Reconstruction/Neurogenic Bladder and Female Urology Non-Moderated Poster Session

*Not CME Accredited

Saturday, March 2, 2019
8:00 a.m. – 9:30 a.m.

**Poster #NM166**

**DORSAL ONLY BUCCAL MUCOSA VS VAGINAL-FLAP “BLANDY” URETHROPLASTY FOR FEMALE URETHRAL STRICTURE: A SINGLE-CENTER SERIES**

Rachael D. Sussman, Benoit Peyronnet, MD, Ricardo Palermola, Dominique Malacarne, Michael Granieri, Christina Escobar, Lee Zhao, Nirit Rosenblum, Victor Nitti, Benjamin Brucker

New York University

Presented By: Rachael D. Sussman, MD

**Poster #NM167**

**TEMPORAL TRENDS IN THE INCIDENCE OF PELVIC FRACTURE ASSOCIATED URETHRAL INJURIES IN UNITED STATES**

Hanson Zhao1, Andrew Chen1, Colby P. Souders1, Catherine Bressee1, D. Joseph Thum1, Alex Hannemann2, Jennifer T. Anger1, George D. Webster2

1Cedars-Sinai Medical Center, Los Angeles CA, 2University of South Dakota Sanford School of Medicine, Vermillion, SD, 3Duke University Medical Center, Durham, NC

Presented By: Hanson Zhao, MD

**Poster #NM168**

**USE OF NEXT GENERATION DNA SEQUENCING TO EVALUATE THE BIOME OF UROLOGICAL PROSTHETICS: A PILOT STUDY**

Seth Teplitsky, BS, Akhil Das, MD, Patrick Shenot, MD, Edouard Trabulsli, MD, Irving Hirsh, MD, Paul Chung, MD

Department of Urology, Thomas Jefferson University Hospital, Philadelphia, Pennsylvania

Presented By: Seth Teplitsky, BS

**Poster #NM169**

**EVALUATION OF TRANSGENDER PREPAREDNESS IN AN OUTPATIENT CLINIC**

Seth Teplitsky, BS, May Jean Counsilman, MD, Patrick Shenot, MD, Leonard Gomella, MD, Paul Chung, MD

Department of Urology, Thomas Jefferson University Hospital, Philadelphia, Pennsylvania

Presented By: Seth Teplitsky, BS

**Poster #NM170**

**ASSESSMENT OF CAREGIVER BURDEN AFTER URINARY DIVERSION FOR BLADDER CANCER**

Wai Lee1, Chris Du2, Una J. Lee1, Kathleen C. Kobashi1, John Corman1, Alvaro Lucioni1

1Department of Urology, Virginia Mason, Seattle, WA, 2Department of Urology, Stony Brook Medicine, Stony Brook, NY

Presented By: Wai Lee, MD

**Poster #NM171**

**ECTOPIC URETERS DIAGNOSED IN ADULTHOOD: PRESENTATION, DIAGNOSIS AND SURGICAL MANAGEMENT**

Bogdan Toia, Mahreen Pakzad, Rizwan Hamid, Tamsin Greenwell, Jeremy Ockrim

University College London Hospital

Presented By: Jeremy Ockrim, MD, BSc(Hons), FRCS

**Poster #NM172**

**A CRITICAL ANALYSIS OF FEMALE URETHRAL STRICTURE DISEASE: PATHOLOGIC AND HISTOLOGIC PARAMETERS FROM 7 PATIENTS UNDERGOING DORSAL VAGINAL GRAFT URETHROPLASTY**

Steven Petrou, Department of Urology1, Xochiquetzal Geiger, Department of Pathology1, Ram Pathak, Department of Urology2, Steven Lomax, MD, Department of Urology1, David Thiel, Department of Urology1

1Mayo Clinic Florida, 2Wake Forest Health

Presented By: Steven Lomax, MD
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Poster #NM173  APPENDIX OR ILEUM – WHICH IS THE BEST MATERIAL FOR MITROFANOFF CHANNEL FORMATION?
Rachel Barratt, Eabhann O'Connor, Mahreen Pakzad, Rizwan Hamid, Jeremy Ockrim, Tamsin Greenwell
University College Hospital, UCLH
Presented By: Rachel Barratt, BMBS, BMedSci, MRCS

Poster #NM174  PELVIC RECONSTRUCTIVE SURGERY PERFORMED WITH MONITORED ANESTHESIA CARE AND LOCAL ANESTHESIA
Tess Crouss, MD1, Caitlin Lim, DO2, Briana Mancenido, Medical student1, Neha Rana, MD1, Xibe Jia, MD1, Kristene Whitmore, MD1
1Drexel University, 2Einstein Urology, 3Philadelphia Urological Associates PC
Presented By: Tess Crouss, MD

Poster #NM175  GENDER-AFFIRMING VAGINECTOMY AND COLPOCLEISIS
Helen Y. Hougen, Daniel Dugi, Kamran Sajadi
Oregon Health and Science University, Department of Urology, Portland, OR
Presented By: Helen Y. Hougen, MD

Poster #NM176  MODIFIED PSOAS HITCH CAN REPLACE BOARI FLAP WITHOUT COMPROMISING VASCULARITY
Majid Mirzazadeh, Department of Urology, Whitney R. Smith, MD, Department of Urology
Wake Forest Baptist Medical Center, Winston-Salem, NC
Presented By: Whitney R. Smith, MD

Poster #NM177  OUTCOMES OF PREGNANCY FOLLOWING SURGERY FOR PELVIC ORGAN PROLAPSE: A SYSTEMATIC REVIEW
Ashley Caron1, A. Lenore Ackerman, MD, PhD2, Pooja Parmeshwar3, Karyn Eilber, MD1, Jennifer Anger, MD, MPH1
1Department of Urology, Cedars-Sinai Medical Center, Los Angeles, CA, 2Department of Urology, Cedars-Sinai Medical Center, Los Angeles, CA, 3Stanford University School of Medicine, Stanford, CA
Presented By: Ashley Caron, BS

Poster #NM178  KNOWLEDGE, ATTITUDE, BEHAVIORS AND BELIEFS REGARDING PELVIC FLOOR DISORDERS IN LATINA WOMEN
Claudia Sevilla1, Christine Horton1,2, Tope Rude1, Katherine Volpe1,2, Lourdes Baezconde-Garbanati3, Jennifer Unger1, Mariana Stern1, Larissa Rodriguez1
1University of Southern California, Department of Urology, Los Angeles, CA, 2University of Southern California, Department of Obstetrics and Gynecology, Los Angeles, CA, 3University of Southern California, Department of Preventive Medicine, Los Angeles, CA
Presented By: Claudia Sevilla, MD

Poster #NM179  TRENDS AND SAFETY OF CONCURRENT SACROCOLPOPEXY AND RECTOPEXY
Claire S. Burton, MD1, Catherine Bresee, MS2, Coulby Souders, MD2, Alex Hanneman3, Karyn Eilber, MD2, Jennifer T. Anger, MD2
1University of California Los Angeles, 2Cedars Sinai Medical Center, 3University of South Dakota
Presented By: Claire S. Burton, MD

Poster #NM180  IS PRIMARY ELECTIVE CESAREAN DELIVERY PROTECTIVE AGAINST PELVIC FLOOR DISORDERS?
Colby P. Souders, MD1, Farnoosh Nik-Ahd2, Ashley Caron1, Karyn Eilber, MD1, Jennifer Anger, MD1
1Cedars-Sinai Medical Center, Los Angeles, CA, 2David Geffen School of Medicine at UCLA, Los Angeles, CA
Presented By: Colby P. Souders, MD
Poster #NM181  
**LONG-TERM REOPERATION RATES ARE EQUIVALENT FOR PELVIC ORGAN PROLAPSE REPAIRS WITH BIOLOGIC AND SYNTHETIC GRAFTS IN A LARGE POPULATION BASED COHORT**  
Kai B. Dallas, MD\(^1\), Ericka Sohlberg\(^1\), Christopher S. Elliott\(^{1,2}\), Lisa Rogo-Gupta\(^3\)  
\(^1\)Stanford University, Department of Urology, Stanford, CA, \(^2\)Santa Clara Valley Medical Center, Department of Urology, San Jose, CA, \(^3\)Stanford University, Department of Obstetrics and Gynecology, Stanford, CA  
Presented By: Kai B. Dallas, MD

Poster #NM182  
**POSTPARTUM WOMEN'S EXPERIENCE WITH PELVIC ORGAN PROLAPSE: INSIGHT REVEALED FROM REDDIT**  
Chris Du\(^1\), Wai Lee\(^2\), Amin Katherine\(^3\), Kathleen C. Kobashi\(^4\), Alvaro Lucioni\(^2\), Una J. Lee\(^2\)  
\(^1\)SUNY Stonybrook, \(^2\)Virginia Mason  
Presented By: Chris Du, BA

Poster #NM183  
**TRANSVAGINAL REPAIR OF PELVIC ORGAN PROLAPSE AFTER CYSTECTOMY/ANTERIOR PELVIC EXONERATION**  
Iryna Crescenze, Paholo Barboglio Romo, Priyanka Gupta, Daniel Morgan  
University of Michigan  
Presented By: Iryna Crescenze, MD

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**USING DIGITAL ETHNOGRAPHY TO UNDERSTAND THE BIOPSYCHOSOCIAL ILLNESS EXPERIENCE OF WOMEN SUFFERING FROM PELVIC ORGAN PROLAPSE**  
Gabriela Gonzalez\(^1,2\), Yuliya Zektser\(^3,4,5\), Carine Khalil, PhD\(^5,6\), Kristina Vaculik\(^3,4\), Corey Arnold, PhD\(^5\), Christopher V. Almario, MD, MSHPM\(^4,6,7\), Brennan M.R. Spiegel, MD, MSHPM\(^4,6,7\), Jennifer T. Anger, MD, MPH\(^2\)  
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Presented By: Gabriela Gonzalez, BS

Poster #NM185  
**ROBOT-ASSISTED LAPAROSCOPIC SACROCOLPOPEXY WITH AUTOLOGOUS FASCIA LATA: TECHNIQUE AND INITIAL OUTCOMES**  
Victoria C.S. Scott\(^1\), Janine L. Oliver\(^2\), Michelle Van Kuiken\(^1\), Frank Lin\(^1\), Nika Vinson\(^1\), Shlomo Raz\(^1\), Ja-Hong Kim\(^1\)  
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Presented By: Michelle Van Kuiken, MD

Poster #NM186  
**OUTCOMES OF SACROCOLPOPEXY WITH CONCURRENT COLORECTAL SURGERY FOR MULTICOMPARTMENT PROLAPSE REPAIR**  
Carrie A. Stewart, Hanson Zhao, Gonzales Gabriella, Christopher Gonzales-Alabastro, Karen Zaghian, Beth Moore, David Magner, A. Lenore Ackerman, Jennifer Anger, Karyn Eliber  
Cedars-Sinai Medical Center  
Presented By: Carrie A. Stewart, MD

Poster #NM187  
**OUTCOMES AFTER IMPLEMENTATION OF GUIDELINES LIMITING OPIODS AFTER UROGYNECOLOGIC SURGERY**  
Shirly Solouki, MD\(^1\), Nitya Abraham, MD\(^2\)  
\(^1\)Albert Einstein College of Medicine/Montefiore Medical Center Department of OB/GYN, \(^2\)Albert Einstein College of Medicine/Montefiore Medical Center Department of Urology  
Presented By: Shirly Solouki, MD
Poster #NM188

FACTORS CONTRIBUTING TO HEALTH DISPARITIES IN SPANISH-SPEAKING LATINA WOMEN WITH PELVIC FLOOR DISORDERS
Claudia Sevilla1, Christine Horton1,2, Katherine Volpe1,2, Lourdes Baezconde-Garbanati3, Jennifer Unger3, Mariana Stern1,3, Larissa Rodriguez1
1University of Southern California, Department of Urology, Los Angeles, CA, 2University of Southern California, Department of Obstetrics and Gynecology, Los Angeles, CA, 3University of Southern California, Department of Preventive Medicine, Los Angeles, CA
Presented By: Claudia Sevilla, MD

Poster #NM189

EFFECT OF PROLAPSE REDUCTION ON VOIDING PARAMETERS DURING URODYNAMIC EVALUATION OF WOMEN WITH PELVIC ORGAN PROLAPSE
Daniela Kaefer, MD, Elizabeth Ferry, MD, Natasha Ginzburg, MD
SUNY Upstate Medical University, Dept. of Urology
Presented By: Daniela Kaefer, MD

Poster #NM190

DOES PELVIC SURGERY IMPACT THE EFFICACY OF PELVIC FLOOR PHYSICAL THERAPY FOR PELVIC PAIN?
Esther Han, DO1, Laura Nguyen, MD2, Jason Gilleran, MD1,2, Jamie Bartley, DO1,2, Lisa Odabachian, P.T.1, Kim Killinger, MSN, Kenneth Peters, MD1,3, Yi Ling Dai1, Judith Boura, MS2, Larry Sirls, MD1,3
1Beaumont Health, 2McMaster University, 3Oakland University William Beaumont School of Medicine, Ascension Macomb-Oakland Hospital
Presented By: Esther Han, DO

Poster #NM191

DE NOVO DEFECATORY SYMPTOMS AND POSTERIOR COMPARTMENT PROLAPSE AS A COMPLICATION OF SACROCOLPOPEXY
Hanson Zhao1, Carrie A. Stewart1, Gabriela Gonzalez2, Christopher Gonzales-Alabastro2, A. Lenore Ackerman1, Karyn Eilber1, Jennifer T. Anger1
1Cedars-Sinai Medical Center, Los Angeles CA, 2UCLA College of Medicine, Los Angeles CA
Presented By: Hanson Zhao, MD

Poster #NM192

A NATIONAL CONTEMPORARY ANALYSIS OF PERIOPERATIVE OUTCOMES FOR MINIMALLY-INVASIVE SACROCOLPOPEXY VERSUS VAGINAL APICAL SUSPENSION
Brian J. Linder, MD, MS1, Boris Gershman, MD2, Katherine Bews1, Amy Glasgow1, John Occhino, MD1
1Mayo Clinic, 2Brown University
Presented By: Brian J. Linder, MD, MS

Poster #NM193

AETIOLOGY AFFECTS THE LONG TERM OUTCOME OF THE MITROFANOFF CHANNEL IN ADULTS.
Eabhann O’Connor, Rachel Barratt, Mahreen Pakzad, Rizwan Hamid, Jeremy Ockrim, Tamsin Greenwell University College London Hospital, UCLH@ WestmorelandStreet. London W1G9PH
Presented By: Rachel Barratt, BMBS, BMedSci, MRCS

Poster #NM194

ROBOT-ASSISTED BLADDER NECK ARTIFICIAL URINARY SPHINCTER IMPLANTATION IN MALE PATIENTS WITH NEUROGENIC STRESS URINARY INCONTINENCE: A MULTICENTER STUDY
Benoit Peyronnet, MD1, Florence Encatassamy, MD2, Juliette Hascoet, MD1, Thomas Prudhomme, MD2, Andrea Manunta, MD1, Loic Lenormand, MD2, Xavier Gamé, MD PhD2, Marie-Aimée Perrouin-Verbe, MD2
1University of Rennes, 2University of Nantes, 3University of Toulouse
Presented By: Benoit Peyronnet, MD

Poster #NM195

OUTCOMES IN PATIENTS WITH IDIOPATHIC OVERACTIVE BLADDER UNDERGOING AUGMENTATION CYSTOPLASTY IN THE ERA OF ONABOTULINUMTOXIN-A AND INTERSTIM
Akshay Sood, MD, Ben Eilender, BS, Phil Wong, MD, PhD, Humphrey Atiemo, MD
Vattikuti Urology Institute, Henry Ford Hospital, Detroit, MI
Presented By: Akshay Sood, MD
Poster #NM196  PREVALENCE OF PELVIC ORGAN PROLAPSE IN MINNESOTA WOMEN USING A VALIDATED EPIDEMIOLOGIC SURVEY: A CROSS-SECTIONAL STUDY
Makinna Oestreich, BA1, Martina Gabra, MD2, Katelyn Tessier, MS3, Cynthia Fok, MD, MPH4, Nissrine Nakib, MD2, John Fischer, MD, FACOG4
1University of Minnesota Medical School, Minneapolis, MN, 2University of Minnesota, Dept. of Urology, Minneapolis, MN, 3University of Minnesota, Masonic Cancer Center, Biostatistics Core, Minneapolis, MN, 4University of Minnesota, Dept. of OB/GYN, Minneapolis, MN
Presented By: Makinna Oestreich, BA

Poster #NM197  OUTCOMES OF NATIVE TISSUE SACROSPINOUS LIGAMENT FIXATION WITH UNILATERAL DESCHAMP NEEDLE SUTURE LIGATION
Vini Chopra, MD, Vicki Irish, CNP, Humphrey Atiemo, MD
Henry Ford Hospital
Presented By: Vini Chopra, MD

Poster #NM198  RISK OF PROLAPSE RECURRENCE AFTER NATIVE TISSUE ANTERIOR VAGINAL WALL SUSPENSION FOLLOWING ANTERIOR COLPORRHAPHY WITH LONG-TERM FOLLOWUP
Deborah Hess1, Rena Malik2, Alana Christie1, Philippe Zimmern1
1UT Southwestern, 2University of Maryland
Presented By: Deborah Hess, MD, MS

Poster #NM199  NATURAL HISTORY OF ASYMPTOMATIC POP RECURRENCE: WHAT HAPPENS NEXT? WHAT SHOULD I ADVISE MY PATIENT?
Gabriela Alarcon1, Marcelo Mass-Linenbaum1, Javier Pizarro-Berdichevsky1
1Division de Obstetricia y Ginecología, Pontificia Universidad Católica de Chile, 2Universidad de los Andes, Chile, 3Division de Obstetricia y Ginecología, Pontificia Universidad Católica de Chile
Presented By: Javier Pizarro-Berdichevsky, MD

Poster #NM200  EVALUATION OF TRANSVAGINAL UTEROSACRAL LIGAMENT HYSTEROPEXY VS. UTEROSACRAL LIGAMENT SUSPENSION WITH HYSTERECTOMY: A RETROSPECTIVE COMPARISON STUDY WITH TWO YEAR OUTCOMES
Samantha M. Raffee, MD1, Naveen Kachroo, MD, PhD1, Solafa Elshatanoufy, MD2, Humphrey Atiemo, MD1
1Vattikuti Urology Institute, Henry Ford Hospital, Detroit, MI, USA, 2Department of Obstetrics and Gynecology, Henry Ford Hospital, Detroit, MI, USA
Presented By: Samantha M. Raffee, MD

Poster #NM201  PRE-OPERATIVE RISK FACTORS LEADING TO POSTOPERATIVE FAILED VOIDING TRIAL AFTER ROBOTIC SACROCOLOPEXY (RSC)
Dayron Rodriguez, Deborah Hess, Emily Huang, Maude Carmel
UT Southwestern
Presented By: Dayron Rodriguez, MD, MPH

Poster #NM202  TRANSOBLIQUE PLACEMENT OF URINARY DIVERSIONS WITH IPSILATERAL VERTICAL RECTUS ABDOMINIS MYOCUTANEOUS FLAP AT TIME OF PELVIC EXENTERATION
Ajaydeep Sidhu, MD1, Felix Cheung, MD2, Nicole Benfante3, Bernard Bochner, MD1, Laura Leddy, MD1, Jaspreet Sandhu, MD1
1Memorial Sloan Kettering Cancer Center, Department of Surgery, Urology Service, 2NYU Winthrop Hospital, Mineola, New York, 3Memorial Sloan Kettering Cancer Center
Presented By: Ajaydeep Sidhu, MD

Poster #NM203  PROSPECTIVE COST ANALYSIS OF 3 VAGINAL ANTI-INCONTINENCE PROCEDURES AT A TERTIARY CARE CENTER
Daniel Wong1, Alana Christie, MS2, Gary Lemack, MD1, Philippe Zimmern, MD1
1Department of Urology, UT Southwestern Medical Center, 2Simmons Comprehensive Cancer Center, UT Southwestern Medical Center
Presented By: Daniel Wong
Poster #NM204  THE USE OF MIRABEGRON IN PATIENTS WITH PARKINSON’S DISEASE AND STORAGE LOWER URINARY TRACT SYMPTOMS: A SINGLE-CENTER SERIES
Benoit Peyronnet, MD1, Gregory Vurtle, Mr1, Dominique Pape, MD1, Jose-Alberto Palma-Cardozo, MD1, Andrew Feigin, MD1, Rachael Sussman, MD1, Ricardo Palmerola, MD1, Nirit Rosenblum, MD2, Steven Frucht, MD1, Horacio Kaufmann, MD1, Victor Nitti, MD1, Benjamin Brucker, MD1
1New York University, 2New York University
Presented By: Benoit Peyronnet, MD

Poster #NM205  LONG-TERM OUTCOMES OF ARTIFICIAL URINARY SPHINCTER IN FEMALE PATIENTS WITH SPINA BIFIDA
Juliette Hascoet, MD1, Andrea Manunta, MD1, Marie-Aimée Perrouin-Verbe, MD2, Jacques Kerdraon, MD1, Magali Jezequel, MD2, Elsa Bey, MD2, Loïc Lenormand, MD2, Grégoire Capon, MD1, Benoît Peyronnet, MD1
1University of Rennes, 2University of Nantes, 3University of Bordeaux
Presented By: Benoît Peyronnet, MD

Poster #NM206  GENDER AND URINARY SYMPTOMS IN PATIENTS WITH MULTIPLE SCLEROSIS
Bradley Garden, Justina Tam, Alice Cheung, Jason Kim, Steven Weissbart
Stony Brook Medicine, Department of Urology
Presented By: Bradley Garden, MD

Poster #NM207  APPROPRIATE SCREENING FOR UROLOGIC COMPLICATIONS AFTER SPINAL CORD INJURY IN A NON-DESIGNATED SCI CENTER VETERANS AFFAIRS HOSPITAL
Alyssa Greiman, Rohail Kazi, Cox Lindsey
Medical University of South Carolina
Presented By: Alyssa Greiman, MD

Poster #NM208  VALSALVA VOIDING VS. CLEAN INTERMITTENT CATHETERIZATION IN ADULT SPINA BIFIDA PATIENTS WITH NEUROGENIC ACONTRACTILE DETRUSOR: A CASE CONTROL STUDY
Mehdi El-Akri1, Charlène Brochard, MD1, Juliette Hascoet, MD1, Magali Jezequel, MS1, Quentin Alimi, MD1, Zine-Eddine Khene, MD1, Claire Richard, MS1, Jacques Kerdraon, MD1, Xavier Gamé, MD, PhD2, Andrea Manunta, MD1, Laurent Siproudhis, MD, PhD1, Benoît Peyronnet, MD1
1University of Rennes, 2University of Toulouse
Presented By: Benoît Peyronnet, MD

Poster #NM209  NATURAL HISTORY OF UPPER TRACT CALCULI IN SPINAL CORD INJURY
Giulia Lane, MD1, Rachel Mann2, Iryna Crescenze1, John Stoffel1, William Roberts1, J Quentin Clemens1, Diana O’Dell1, Anne Cameron1
1University of Michigan, 2University of Minnesota
Presented By: Giulia Lane, MD

Poster #NM210  UROLOGIC CARE OF A MULTIPLE SCLEROSIS PATIENT POPULATION — SINGLE PROVIDER EXPERIENCE
Samantha M. Raffee, MD, Philip Wong, MD, PhD, Isaac Palma-Zamora, MD, Vicki Irish, NP, Humphrey Atiemo, MD
Vattikuti Urology Institute, Henry Ford Hospital, Detroit, MI, USA
Presented By: Samantha M. Raffee, MD

Poster #NM211  NEUROGENIC DYSFUNCTION IN ADULTS WITH CEREBRAL PALSY: A 10 YEAR EXPERIENCE
Ruthie Su1, Gray L. Roberge2, Wade Bushman2
1University of Wisconsin, 2University of Wisconsin, Department of Urology, Madison, WI
Presented By: Gray L. Roberge, MD
**Poster #NM212**

**FEASIBILITY AND PERIOPERATIVE OUTCOMES OF ROBOT-ASSISTED AUGMENTATION CYSTOPLASTY IN ADULT PATIENTS WITH NEUROGENIC BLADDER: A PRELIMINARY SINGLE-CENTER EXPERIENCE**

Benoit Peyronnet, MD, Juliette Hascoet, MD, Louis-Paul Berthelot, Jacques Kerdraon, MD, Caroline Voiry, MD, Karim Bensalah, MD PhD, Grégory Verhoest, MD, PhD, Quentin Alimi, MD PhD

University of Rennes

Presented By: Benoit Peyronnet, MD

**Poster #NM213**

**INITIATION OF INTERMITTENT CATHETERIZATION IS ASSOCIATED WITH INCREASED RISK OF URINARY TRACT INFECTION IN MULTIPLE SCLEROSIS PATIENTS WITH ELEVATED POST-VOID RESIDUAL**

Lauren E. Corona, Nadia R. Sion, Elizabeth Dray, Anne P. Cameron, J. Quentin Clemens, Yongmei Qin, John T. Stoffel

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Presented By: Lauren E. Corona, MD

**Poster #NM214**

**ILEOVESICOSTOMY OUTCOMES IN PATIENTS WITH NEUROGENIC BLADDER DYSFUNCTION**

Lauren Beeder, Jie Cai, David Ginsberg

1. Keck School of Medicine of University of Southern California, Los Angeles, CA, 2. Department of Urology, University of Southern California, Los Angeles, CA

Presented By: Lauren Beeder, BS

**Poster #NM215**

**LESSONS LEARNED FROM THE LONGEST REPORTED STUDIES ON OPEN STRESS URINARY INCONTINENCE PROCEDURES IN WOMEN.**

Amy Kuprasertkul, BS, Philippe Zimmern, MD

Department of Urology, UT Southwestern Medical Center

Presented By: Amy Kuprasertkul, BS

**Poster #NM216**

**THE ROLE OF ANESTHESIA IN URINARY RETENTION FOLLOWING MID URETHRAL SLING**

Eric Katz, Kareem Alazem, Kristian Stensland, Lara MacLachlan

Institute of Urology, Lahey Hospital Medical Center, Burlington, MA, USA

Presented By: Eric Katz, BA, MD

**Poster #NM217**

**DYSPAREUNIA IN FEMALE ADULT ENTERTAINERS CAN BE A CAUSE OF FEMALE SEXUAL DYSFUNCTION**

Daniel Furlong, Justin Dubin, Aubrey Greer, Maria Becerra, Cadence Valentine, Ian O’Brien, Eric Leue, Lisa Paz, Ashley Winter, Ranjith Ramasamy

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Presented By: Daniel Furlong, MD, MBA

**Poster #NM218**

**TRENDS IN GENDER REPRESENTATION OF AUTHORSHIP AT THE ANNUAL SUFU MEETING**

Caitlin Lim, DO, Sarah Christianson, DO, Rebecca Spinaris, BS, Joshua Cohn, MD, Justin Friedlander, MD

Albert Einstein Medical Center

Presented By: Caitlin Lim, DO, MS

**Poster #NM219**

**SURGICAL INTERVENTIONS FOR THE COMPLICATIONS FROM SYNTHETIC MESH AFTER MIDURETHRAL SLING SURGERY**

Ji-Yeon Han, Sung Tae Cho

1. Pusan National University Yangsan Hospital, 2. Hallym University School of Medicine

Presented By: Ji-Yeon Han, MD, PhD
ABSTRACT LISTING

Poster #NM220  RISK FACTORS FOR POOR ADHERENCE TO ANTICHOLINERGICS THERAPY IN CHILEAN PATIENTS WITH OVERACTIVE BLADDER (OAB): ANALYSIS OF A LARGE DATASET FROM A PROSPECTIVELY COLLECTED DATABASE
Marcelo Mass-Lindenbaum1, Gabriela Alarcón2, Javier Pizarro-Berdichevsky3
1Universidad de los Andes, 2División de Obstetricia y Ginecología, Pontificia Universidad Católica de Chile, 3Urogynecology Unit Sótero del Río Hospital. División de Obstetricia y Ginecología, Pontificia Universidad Católica de Chile
Presented By: Javier Pizarro-Berdichevsky, MD

Poster #NM221  TVT EXACT® V/S KIM® SYSTEM SLINGS, COMPARISON OF THE EFFICACY IN THE TREATMENT OF FEMALE URINARY STRESS INCONTINENCE.
Fabiola Schlageter1, Gabriela Alarcón1, Marcelo Mass-Lindenbaum2, Javier Pizarro-Berdichevsky1
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Presented By: Javier Pizarro-Berdichevsky, MD

Poster #NM222  WITHDRAWN

Poster #NM223  URETHRAL BULKING IN THE IMMEDIATE POST-OPERATIVE PERIOD FOR THE TREATMENT OF STRESS URINARY INCONTINENCE AFTER PELVIC ORGAN PROLAPSE REPAIR
Rachael D. Sussman, Benoit Peyronnet, MD, Ricardo Palmerola, Christina Escobar, Victor Nitti
New York University
Presented By: Rachael D. Sussman, MD
2019 Basic Science Prize Essay Award Recipient

AN EXTERNAL COMPRESS-RELEASE PROTOCOL INDUCES DYNAMIC ELASTICITY IN A WORKING PORCINE BLADDER MODEL
Andrea Balthazar¹, Zachary Cullingsworth², Naveen Nandanan¹, Uzoma Anele¹, John Speich², Adam Klausner¹
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Presented By: Andrea Balthazar, MD

Introduction: In studies aimed at developing novel urodynamic metrics, our group previously identified “dynamic elasticity.” This biomechanical process lowers intravesical pressure via filling and passive emptying (strain softening), and active voiding restores baseline pressure. Dynamic elasticity is important because it shows, in contrast to previously held beliefs, that bladder compliance can be acutely regulated. However, because filling and passive bladder emptying requires an invasive catheter, we hypothesized that bladder strain softening can be produced non-invasively using an external compress-release protocol. The aim was to determine if strain softening produced by filling and passive emptying is equivalent to strain softening produced by repeated external compress-release cycles in a porcine bladder model.

Methods: Ex vivo working perfused porcine bladders were used for both passive emptying and external compress-release experiments. In the passive emptying experiments (fig 1A), the bladder was filled to 250 ml (pre-strain softening pressure) and filling was continued to 500ml (reference pressure). The bladder was then passively emptied via syringe aspiration back to 250ml (post-strain softening pressure). The bladder was then voided with high KCl buffer to induce “active” contraction and refilled back to 250 ml (pressure after active contraction) to demonstrate dynamic elasticity. For the compress-release experiments (fig 1B), the bladder was filled to 250ml, and external compression was applied to isovolumetrically increase to the reference pressure. The compression was held for 15s and released for 15s for 5 cycles. The 5 min equilibrium pressure after release (post-strain softening) was noted. In both studies, the following pressures were compared: pre-strain softening, post-strain softening, after active voiding.

Results: Ten bladders were studied. Strain softening occurred in both the passive emptying (p < 0.05) and compress-release (p 0.05), suggesting a similar degree of strain softening was induced by each method (fig 1C).

Conclusion: Repeated external compression can induce a similar degree of strain softening as compared to filling and passive emptying. This technique may represent a potential means to acutely regulate bladder compliance and be used as a mechanical treatment for urinary urgency.
Basic Science Podium/Poster #BS1

EXCITATORY AFFERENTS TO PONTINE MICTURITION CENTER NEURONS PROMOTE MICTURITION

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Introduction: Addressing Lower urinary tract symptoms (LUTS) clinically, has been hampered by an incomplete understanding of neural control of bladder function. Glutamatergic Pontine Micturition Center (PMC) neurons (PMCVglut2), including corticotropin releasing hormone (PMCCrh) and estrogen receptor-expressing (PMCEsr) neurons, provide descending control of detrusor and sphincter function. Here we identify a network of afferent neurons, spanning several forebrain and brainstem regions, which directly modulate these PMC neuron populations to initiate voiding behavior.

Methods: We combined neural mapping methods with optogenetic and chemogenetic stimulation of neurons and recording of neural activation, whilst recording video thermography and cystometrogram to monitor voiding behavior and bladder pressure in awake mice. We also used Channelrhodopsin Assisted Circuit Mapping (CRACM) to characterize the functional contribution of neurons that provide afferent regulation of the PMC.

Results: Afferents to PMCVglut2 and PMCCrh neurons arose from the periaqueductal gray (PAG), the preoptic area (POA), the lateral hypothalamic area (LHA), and multiple other sites. We focused on afferents from the PAG and LHA because PAG receives abundant afferent input from the sacral cord, and LHA likely coordinates bladder function with other homeostatic mechanisms. Using CRACM we demonstrated synaptic connections between excitatory PAG and excitatory LHA neurons and PMC neurons. Optogenetic stimulation of PAGVglut2 -> PMC and LHAVglut2 -> PMCTerminals led to prompt detrusor contraction and voiding. We recorded Ca2+-dependent fluorescence changes in distinct neuron populations to study the timing of neuronal activity with respect to detrusor contraction and voiding, and found that activity in axon terminals in the PMC preceded increases in bladder pressure during conscious CMGs.

Conclusion: Our results taken together begin to identify a network of neurons that control voiding and continence through activation of postsynaptic PMC neurons. We have demonstrated functional and facilitory roles of periaqueductal grey (PAG) and hypothalamic afferents to the PMC for voiding and modulating continence. This information helps us with a detailed understanding of how forebrain, brainstem and spinal inputs converge to control bladder filling and voiding, and hence the neurologic mechanisms of LUTS in mice and humans.
Basic Science Podium/Poster #BS2

ROLE OF CORTICOTROPIN RELEASING HORMONE IN MOUSE MICTURITION BEHAVIOR
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Introduction: A significant component of Lower urinary tract symptoms (LUTS) is due to failure of nervous control of bladder function, or failure of neural pathways to compensate for bladder dysfunction. However, brain control of bladder filling and voiding remains poorly understood. Glutamatergic Pontine micturition center (PMCVglut2) and a subset of these expressing corticotropin releasing hormone (PMCCrh/Vglut2), project axons directly to sacral spinal cord nuclei that control detrusor contraction and sphincter relaxation. Here we show that PMC neuron subtypes are critical for specific aspects of micturition behavior.

Methods: Micro-injections of adeno-associated viruses (AAVs) or Diphtheria Toxin subunit-A (DTA) were placed into anatomically defined regions of the mouse brain, enabling highly selective expression of proteins in target neuron populations. A novel non-invasive void-spot assay, micturition video thermography (MVT), was used to track voiding behavior in awake-behaving mice. MVT was combined with optogenetic and chemogenetic stimulation, conditional neuron ablation, brain site-specific gene knockout, and recording of neural population activity. Following MVT, manipulations were repeated while recording bladder pressure in behaving mice or under anesthesia.

Results: Optogenetic stimulation of PMCVglut2neurons was sufficient to generate strong bladder contractions and voiding responses. Direct optogenetic stimulation of specifically PMCCrh/Vglut2somas also generated voiding responses, although surprisingly these responses were comparably modest. To further understand these contrasting behaviors, we used a genetically targeted approach to selectively ablate PMCCrh/Vglut2 or PMCVglut2neurons. Genetic ablation resulted in abnormal micturition behaviors. Subsequent specific disruption of CRH but not glutamate signaling in PMCneurons had no effect on voiding or voiding contractions. We recorded Ca2+fluorescence changes to study timing of neural activity with respect to detrusor contraction and voiding, and found that subpopulations have distinct activity patterns that may drive particular aspects of bladder control.

Conclusion: Our results taken together begin to identify the molecular identity of PMC neurons with functional roles in controlling urinary voiding and continence. Our results further suggest that glutamatergic PMC neurons are necessary and sufficient in regulating bladder function. Though the PMCCrh/Vglut2subpopulation of glutamatergic PMC neurons plays a role in controlling bladder function and can serve as a convenient marker neuron population, expression of CRH is not essential to the function of these neurons.
Basic Science Podium/Poster #BS3
QUANTIFICATION OF CEREBRAL BLOOD FLOW DURING BLADDER FILLING IN HEALTHY SUBJECTS*
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Introduction: Urine storage is a complex physiologic process that is under central nervous system control. It is unclear how brain activity changes as bladder volume and bladder sensations change. In this study, we quantify cerebral perfusion and the change in brain activity in healthy subjects during bladder filling.

Methods: We performed a prospective study of 8 women without bladder pathology. Participants were asked to undergo an fMRI exam while their bladders were filled via a catheter at a rate of 50ml/minute. Images were obtained at bladder volumes of 0, 50, 100, 200, 350, and 500mL. Subjects were instructed to indicate when they experienced the first sensation of bladder filling, first desire to void, and strong desire to void. For this exam, we used arterial spin labeling fMRI, which quantifies cerebral blood flow (CBF), which serves as a proxy for brain activity.

Results: On average, participants experienced first and strong desire to void after 112 and 284mL filling, respectively. During bladder filling, there was a steady increase in CBF followed by a steep decrease in CBF (Figure 1). The insula exhibited significantly increased perfusion at first desire to void compared to baseline (Figure 1), while the sensorimotor cortex exhibited decreased perfusion for the same comparison.

Conclusion: Our study results suggest that suppression of the desire to void results in deactivation of the regions that are initially activated by initial desire to void.
Basic Science Podium/Poster #BS4

OPTOGENETIC INHIBITION OF NEURONS EXPRESSING CORTICOTROPIN-RELEASING HORMONE (CRH) IN BARRINGTON'S NUCLEUS FACILITATES MICTURITION

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Introduction: Lower urinary tract dysfunction (LUTD) affect 20% of “normal” children and >40% of adults over the age of 40. The neuro-urologic pathways involved in normal and dysfunctional voiding are largely unknown and recent interest has focused on neurons that express corticotropin-releasing hormone (CRH) in Barrington’s nucleus (BN), the pontine micturition center. A recent optogenetic study provided evidence for a role of these specific BN neurons in micturition (Hou et al, Cell 2016; 167:73) and we previously presented our work showing that stimulation of these neurons inhibits micturition. Here we examine the effects of optogenetic inhibition of these CRH neurons in BN on the in vivo voiding phenotype and urodynamics in awake mice. We hypothesized that inhibiting these neurons would lead to facilitation of voiding with smaller voided volumes and shorter time between voids.

Methods: Double transgenic male mice expressing archaerhodopsin channel (ArchRd) in CRH cells had fiberoptic probes implanted into BN at 8 weeks of age and a catheter secured into the bladder for in vivo cystometry. In vivo cystometry before and during optogenetic inhibition at various frequencies was performed 5 days postoperatively. Saline was perfused at 10µl/min and baseline stable voiding cycles were established.

Results: Optogenetic silencing (530 nm at 10, 25 and 50 Hz) of CRH neurons in BN produced a significant decrease in intermicturition interval (time between voids), bladder capacities and voided volumes (Figure 1). Control non double mice showed no effects from optogenetic stimulation.

Conclusion: Our results suggest that optogenetic silencing of CRH-BN neurons at high frequencies elicits bladder contractions and facilitates micturition leading to a voiding phenotype of more frequent and small volumes voids. Further elucidation of the heterogeneous population of neurons in BN are warranted to understand micturition and how it may be manipulated in disease states such as in patients with infrequent voiding or acute urinary retention.
Basic Science Podium/Poster #BS5

CEFTRIAXONE INHIBITS STRESS-INDUCED HYPERALGESIA AND ALTERS CEREBRAL MICTURITION AND NOCICEPTIVE CIRCUITS: A MULTIDISCIPLINARY APPROACH TO THE STUDY OF CHRONIC PELVIC PAIN (MAPP) RESEARCH NETWORK STUDY

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Presented By: Larissa V. Rodriguez, MD, FPMRS

Introduction: Chronic emotional stress plays a role in the exacerbation and development of interstitial cystitis/bladder pain syndrome (IC/BPS), with neuroimaging in patients suggesting a unique functional and structural reorganization of specific brain regions associated with the perception, processing and response to pain. Our prior findings in a rat model demonstrated that water avoidance stress (WAS) elicits a visceral hypersensitivity during bladder filling, as well as an increased engagement of portions of the supraspinal micturition circuit responsive to urgency, viscerosensory perception and its relay to motor regions coordinating imminent bladder contraction. Given the significant overlap of brain circuits involved in stress, anxiety, and micturition, and the documented role of glutamate in their regulation, the current study examined the effects of ceftriaxone (CEF)-dependent upregulation of the glutamate transport on the central amplification of stress-induced bladder hyperalgesia.

Methods: Adult, female Wistar-Kyoto rats were exposed to WAS (1 hr/d x 10 d) or sham paradigms following the daily administration of CEF or vehicle. On day 11, cystometrograms were obtained during titrated bladder dilation, with visceromotor responses (VMR) recorded simultaneously. Functional brain activation was assessed during passive bladder distension (20-cmH2O) following i.v. administration of [14C]-iodoantipyrine. Regional cerebral blood flow was quantified by autoradiography and analyzed in 3D reconstructed brains with statistical parametric mapping.

Results: WAS in rats, elicited visceral hypersensitivity during bladder filling as demonstrated by a decreased pressure threshold and visceromotor threshold triggering the voiding phase, as well as by increased VMR to bladder distension. Perfusion mapping revealed stress effects in brain regions noted to be responsive to passive bladder filling. Administration of CEF diminished visceral hypersensitivity and attenuated many of the stress-related functional brain changes within the supraspinal micturition circuit. A significant differential effect of CEF on the brains of stressed rats compared to controls was noted in posterior cingulate/anterior retrosplenial and primary somatosensory cortices. These regions contribute to nociceptive and to micturition circuits, show stress effects, and have been previously reported to demonstrated altered functionality in IC/BPS patients.

Conclusion: Given the actions of CEF on the glutamate transporter, our results suggest the possibility of glutamatergic pharmacologic strategies in modulating stress-related centrally mediated bladder dysfunction.
Basic Science Podium/Poster #BS6
TEMPORAL DYNAMICS OF THE GENITOURINARY MICROBIOME
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Introduction: Recent advances in next-generation DNA sequencing (NGS) have revealed that human organs and body surfaces form habitats for interacting microbial communities of great diversity and complexity. Alterations in these communities are often associated with disease states. In comparison with other organ sites, the microflora of the lower urinary tract has not been extensively studied. Our aim was to assess the temporal stability of the genitourinary microbiome, in addition to the interactions and relationships between the bacterial communities, of the female genitourinary tract.

Methods: Samples were obtained from four anatomic sites in 23 premenopausal women over 12 consecutive weeks. Specimen sites included the urine, vagina, rectum, and inguinal skin crease. The bacterial community composition of each sample was determined using NGS of the 16S ribosomal genomic DNA locus to determine individual bacterial genera. Bacterial taxa were identified by alignment to the GreenGenes sequence database. The relative abundances of individual taxa, overall microbial diversity, and total microbial burdens for each microbial community were compared between individuals and within individuals for different body sites.

Results: The urinary microbiome appears similar in composition to the vaginal microbiome, while the skin and rectum appear independent and unique. In menstruating women, the microbiome of the vagina and urine fluctuated contemporaneously. Women using hormonal contraception, such as an intrauterine device or oral contraception who did not menstruate, did not exhibit the same cyclical fluctuations in the microbiome. Even in menstruating women, the rectal and skin microbiota remained relatively consistent over time.

Conclusion: The urinary microbiome of premenopausal women appears heavily influenced by the vaginal community, suggesting that alterations in the vaginal microbiome may be a therapeutic method to alter the urinary microbiome.
Basic Science Podium/Poster #BS7
LOSS OF BETA1-INTEGRIN DISRUPTS FOCAL ADHESIONS AND MUSCARINIC SIGNALING REQUIRED FOR SMOOTH MUSCLE CONTRACTION IN MOUSE BLADDER
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Presented By: Warren Hill, PhD

Introduction: Cell and matrix interactions are required to maintain tissue-level structure and function. As integrins span the plasma membrane and dynamically link the actin cytoskeleton to the extracellular matrix they play a critical role in tissue function including a prominent role in mechanotransduction. The urinary bladder as a uniquely elastic organ, must regularly cycle between relaxing and contracting during filling and emptying respectively. Abnormal bladder symptoms, including overactivity, underactivity and incontinence, are thought in many cases to arise from disrupted muscle contractility or mechanosensitive neural signaling.

Methods: To study mechanotransduction in the bladder smooth muscle (BSM), we knocked-out β1-integrin using a tamoxifen (TMX)-inducible, tissue-specific Cre/lox system in mice.

Results: Six weeks after TMX induction in adult males, β1-integrin was downregulated by >90% (western blotting/PCR). Void-spotting assays on filter paper revealed a progressive increase in number of voids from 2.5/4 h to 8.3/4h over a period of 60 days (PPP80% and histology revealed muscle bundles were disorganized.

Conclusion: We conclude that β1-integrin is necessary for BSM integrity via focal adhesions and for muscarinic signaling during force generation. Many of these molecular and phenotypic signatures are seen in diabetic bladders, suggesting possible insights into this class of bladder dysfunction.
Basic Science Podium/Poster #BS8
TRPM4 CHANNEL INHIBITORS 9-PHENATHROL AND GLIBENCLAMIDE DECREASE GUINEA PIG DETRUSOR SMOOTH MUSCLE EXCITABILITY AND CONTRACTILITY
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Presented By: John Malysz, PhD

Introduction: Recent findings from our laboratory support a role for non-selective cation channels, consistent with transient receptor potential melastatin 4 (TRPM4), in detrusor smooth muscle (DSM). 9-Phenathrol (9-Phen), a commonly-used TRPM4 channel inhibitor, reduced cation currents in human and guinea pig DSM cells and attenuated DSM contractility. Glibenclamide (Glib) also inhibited TRPM4 via a mechanism involving sulfonylurea receptor-TRPM4 (SUR-TRPM4) complexes in addition to its selective K-ATP (SUR-Kir6.x) channel blockade. Diazoxide, a SUR agonist, activated SUR-TRPM4 complexes. Here, we evaluated the contributions of TRPM4/SUR-TRPM4 complexes to DSM excitability and/or contractility by utilizing the aforementioned target-modulating pharmacological tools.

Methods: Freshly-isolated DSM cells were prepared by enzymatic dissociation of urothelium-free DSM from adult male guinea pigs and used in amphotericin-B perforated patch-clamp experiments under conditions optimized for recording voltage step-induced non-selective cation currents. We assessed the effects of compounds in urothelium-free DSM strips on spontaneous and 20 mM KCl-induced phasic contractions using isometric tension recordings.

Results: In voltage-clamped DSM cells, complete removal of extracellular Na+ decreased currents at negative and positive voltages confirming Na+ dependence (n=8). Although Glib (100 μM) and 9-Phen (100 μM), each alone, reduced cation currents (n=8-10, p<0.05). 9-Phen, but not Glib or Diaz, increased cell capacitance (cell surface area indicator) by 11.2±2.1% (n=8, p<0.01). In DSM contractility studies, Glib displayed lower potency than 9-Phen attenuating spontaneous and 20 mM KCl-induced phasic contraction parameters by 18-25-fold (n=12-19) and 7-16-fold (n=10-29), respectively. Glib compared to 9-Phen showed lower maximum efficacy (7-63% difference) for KCl-induced, or similar for spontaneous phasic contraction parameters.

Conclusion: The two TRPM4 inhibitors, Glib and 9-Phen, reduced cation currents in DSM cells and phasic contractions in DSM strips. More robust effects of 9-Phen than Glib suggest that in DSM cells the same type of cation channel is either differentially modulated or that the compounds act on different targets. 9-Phen-sensitive cation channels may be involved in DSM cell volume regulation. SUR-TRPM4 complexes do not contribute to DSM whole cell cation currents in guinea pig DSM cells.
Basic Science Podium/Poster #BS9
PURINERGIC RECEPTORS P2Y12 AND A2B ANTAGONISTICALLY REGULATE BLADDER FUNCTION
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Presented By: Weiqun Yu, PhD

Introduction: Abnormalities in purine availability, purinergic receptor density, and purinergic contractility are commonly seen in patients with lower urinary tract symptoms (LUTS), but the underlying mechanisms relating altered receptor function to LUTS are not well understood. We hypothesize that purinergic P2Y12 and A2B receptors play an important role in regulating bladder contraction and relaxation through mediating extracellular ADP and adenosine signaling.

Methods: Control wildtype, P2Y12KO, and A2BKO mice in C57BL/6J background were used. Bladder phenotyping was performed using voiding spot assay and cystometrogram. Contractility of bladder smooth muscle (BSM) strips were evaluated by myography in response to electrical field stimulation, combined with specific receptor agonists and antagonists, and further validated by calcium imaging on cultured BSM cells. Lastly, molecular and imaging approaches were used to study potential underlying mechanisms.

Results: We provide extensive evidence for the reciprocal interplay of multiple receptors responding to ATP, ADP and adenosine, agonists which regulate bladder function significantly (see figure). ADP stimulated P2Y12 receptors, causing BSM contraction, while adenosine signaling actively inhibited BSM purinergic contractility through A2B receptors. The modulation of adenylyl cyclase - cAMP signaling via A2B and P2Y12 interaction actively regulated bladder contractility by modulating intracellular calcium levels. Knockout mice lacking the receptors display diametrically opposed bladder phenotypes with P2Y12KOs exhibiting an underactive bladder phenotype with increased bladder capacity and reduced voiding frequency, while A2BKO mice have overactive bladder with decreased capacity and increased voiding frequency. The opposing phenotypes in P2Y12KO and A2BKO mice not only resulted from dysregulated BSM contractility, but also from abnormal BSM cell growth. Finally, we demonstrate that intraperitoneal administration of drugs targeting P2Y12 or A2B receptor rescues these abnormal phenotypes in both knockouts.

Conclusion: We conclude that P2Y12 or A2B receptor antagonistically modulate bladder capacity and voiding frequency through regulating downstream adenylyl cyclase - cAMP signaling pathway. These findings strongly indicate that P2Y12 and A2b receptors are attractive therapeutic targets for human patients with LUTS.

Figure 1. Interplay of P2Y12 and A2b signaling plays a key role in regulating BSM cell function and overall bladder activity.
Basic Science Podium/Poster #BS10

URINARY TIMP-2 IS SIGNIFICANTLY ASSOCIATED WITH POOR BLADDER COMPLIANCE AND UPPER URINARY TRACT DAMAGE IN ADULT PATIENTS WITH SPINA BIFIDA

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Introduction: The aim of the present study was to assess the predictive values of 5 urinary markers (NGF, BDNF, TIMP-2, TGF-B1 et PGE2) for detrusor overactivity/poor bladder compliance and for upper urinary tract damage in adult patients with spina bifida.

Methods: A single-center prospective trial was conducted from March 2015 to March 2017 including all consecutive adult spina bifida patients seen for urodynamic testing. The urine of the voiding/self-catheterization immediately preceding the urodynamic were collected and stored at -80°C. An upper urinary tract imaging was systematically performed. At the end of the inclusion period, urines were defrosted and urinary NGF, BDNF, TIMP-2, TGF-B1 were assessed using validated ELISA kits. The urinary markers level were adjusted on the urinary creatinine level. The primary endpoint was upper urinary tract damage defined as: renal scaring or renal atrophy or hydronephrosis on imaging.

Results: 41 patients were included. Of all urinary markers, only TIMP-2 was significantly associated with poor bladder compliance (p=0.04). There was no other statistically significant association between urinary markers and urodynamic parameters (bladder compliance, Maximum detrusor pressure (Pdet max), maximum cystometric capacity or detrusor overactivity). TIMP-2 was also the only urinary marker significantly associated with upper urinary tract damage on imaging (p=0.02). Of all urodynamic parameters, poor bladder compliance was the only one associated with upper urinary tract damage (p=0.01), while Pdetmax did not reach statistical significance (p=0.07). The diagnostic performances of urinary TIMP-2 for upper urinary tract damage were slightly superior to PdetMax and slightly inferior to bladder compliance (ROC curves, figure 1) with an area under the curve (AUC) of 0.72. For the optimal threshold of 400 pg/ml, sensitivity was 71.4% and specificity was 74.1%.

Conclusion: This study confirms the potential interest of TIMP-2 to predict high-risk urodynamic features and upper urinary tract damage in adult spina bifida patients. This finding confirms the strong pathophysiological role of extracellular matrix alteration in adult spina bifida patients and DO/poor bladder compliance. TIMP-2 could be a therapeutic target in this population.
Poster #BS1
AN EXTERNAL COMPRESS-RELEASE PROTOCOL INDUCES DYNAMIC ELASTICITY IN A WORKING PORCINE BLADDER MODEL*
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Introduction: In studies aimed at developing novel urodynamic metrics, our group previously identified “dynamic elasticity.” This biomechanical process lowers intravesical pressure via filling and passive emptying (strain softening), and active voiding restores baseline pressure. Dynamic elasticity is important because it shows, in contrast to previously held beliefs, that bladder compliance can be acutely regulated. However, because filling and passive bladder emptying requires an invasive catheter, we hypothesized that bladder strain softening can be produced non-invasively using an external compress-release protocol. The aim was to determine if strain softening produced by filling and passive emptying is equivalent to strain softening produced by repeated external compress-release cycles in a porcine bladder model.

Methods: Ex vivo working perfused porcine bladders were used for both passive emptying and external compress-release experiments. In the passive emptying experiments (fig 1A), the bladder was filled to 250 ml (pre-strain softening pressure) and filling was continued to 500ml (reference pressure). The bladder was then passively emptied via syringe aspiration back to 250ml (post-strain softening pressure). The bladder was then voided with high KCl buffer to induce “active” contraction and refilled back to 250 ml (pressure after active contraction) to demonstrate dynamic elasticity. For the compress-release experiments (fig 1B), the bladder was filled to 250ml, and external compression was applied to isovolumetrically increase to the reference pressure. The compression was held for 15s and released for 15s for 5 cycles. The 5 min equilibrium pressure after release (post-strain softening) was noted. In both studies, the following pressures were compared: pre-strain softening, post-strain softening, after active voiding.

Results: Ten bladders were studied. Strain softening occurred in both the passive emptying (p < 0.05) and compress-release (p 0.05), suggesting a similar degree of strain softening was induced by each method (fig 1C).

Conclusion: Repeated external compression can induce a similar degree of strain softening as compared to filling and passive emptying. This technique may represent a potential means to acutely regulate bladder compliance and be used as a mechanical treatment for urinary urgency.
Poster #BS2
DEVELOPMENT OF A STRESS-INDUCED PELVIC PAIN MODEL IN C57BL/6 MICE USING FORCED SWIM STRESS
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Presented By: H. Henry Lai, MD

Introduction: Animal models of pelvic pain that are induced by bladder inflammation (e.g., with cyclophosphamide) are critiqued due to the lack of bladder inflammation in the majority of patients with interstitial cystitis/bladder pain syndrome (IC/BPS), and the acute nature of the chemical cystitis induced. Here we describe the development of a stress-induced pelvic pain model in C57BL/6 mice using forced swim stress.

Methods: 9 weeks old male C57BL/6 mice was forced to swim for 30 minutes per day for 5 consecutive days, versus regular handling without forced swimming (sham). Von Frey filament testing of the suprapubic area (referred pelvic hyperalgesia), non-invasive filter paper voiding spot assay (VSA), and cystometry were compared between the forced swim stress group and the sham group for up to 30 days.

Results: The forced swim stress mice demonstrated significantly decreased mechanical thresholds to von Frey filament stimulation to the suprapubic area starting on day 1 of the forced swim, and continued until day 16 (more than 2 weeks after the initiation of forced swim, p-values 0.0001 to 0.025, compared to baseline, see diagram). The pelvic hyperalgesia began to normalize by day 23 and day 30 in the forced swim stress group. Pelvic hyperalgesia did not develop in the sham group at any time point after baseline (p>0.05). For voiding spot assay (VSA), no differences in the total number of voids and mean voided volumes were noted between day 5 and baseline in either group. For cystometry, no differences in inter-contractile intervals (ICI) or contractile amplitudes were noted between the stress mice and sham mice on day 5.

Conclusion: We have developed a pelvic pain model in C57BL/6 mice using forced swim stress. This stress-based mouse model avoided the use of bladder irritants and exhibited pelvic hyperalgesia for up more than 2 weeks after the first stress exposure.

Support: NIH MAPP (Multi-Disciplinary Approach to the Study of Chronic Pelvic Pain)
Poster #BS3
A MURINE MODEL OF CHRONIC SACRAL NEUROMODULATION USING THE OPTOGENETIC TECHNIQUE
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Presented By: Shannon L. Wallace, MD

Introduction: Sacral neuromodulation is a treatment option to alleviate lower urinary tract symptoms. However, the mechanisms of bladder neuromodulation are still very poorly understood as an animal model has not been well established. We describe a murine model of chronic, repetitive neuromodulation using the technique of optogenetics. Optogenetics enables specific neurons to be activated by light through injection of target neurons with viral vectors carrying the opsin light-channel gene. Transdermal light can then stimulate targeted nerves multiple times noninvasively. In order to better characterize this model, we sought to examine the effect of optogenetic neuromodulation on normal bladder behavior. This pilot study is essential for establishing that the optogenetic methodology does not alter bladder behavior and therefore introduce error into the model.

Methods: In this pilot study, five mice were injected with AAV6-hSyn-ChR2(H134R)-eYFP virus into their sciatic nerves. AAV6-hSyn-ChR2(H134R)-eYFP encodes an excitatory opsin, enabling light-inducible stimulation. Four weeks after viral injection, all mice were exposed to 30 min of low intensity blue 475nm light daily in an LED chamber for 21 days. Voiding behavior before and after viral infection was monitored by 2-hour filter paper recordings twice weekly. The mice were perfused and sacrificed at 7 weeks to stain for YFP fluorescence and c-fos immunohistochemistry and quantification.

Results: All five mice underwent successfully surgery with injection of the AAV6-hSyn-ChR2(H134R)-eYFP virus into the epineurium of the sciatic nerve. Opsin expression was confirmed by positive YFP fluorescence stain in the dorsal root ganglia of the sciatic nerve. C-fos immunohistochemistry and quantification confirmed neural activation. In these mice with normal bladders, viral injection did not induce a significant change in urinary behavior.

Conclusion: In this pilot study, we verified transduction of the opsin gene and neural activation using our methodology. We aimed to characterize the effect of the intrasciatic optogenetic technique on the normal bladder and we have shown that normal bladder behavior is not altered and no additional error is introduced using this model. This confirmation is crucial for future studies which aim to examine the chronology of changes induced by neuromodulation in the diseased bladder.
Poster #BS4  
CAN MULTIPAROUS AND AGING RABBITS SERVE AS A MODEL TO STUDY PELVIC FLOOR DYSFUNCTION IN WOMEN?  
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Introduction: The striated skeletal pelvic floor muscles (PFM) form slings around the urogenital hiatus and rectum acting as true sphincters, and their dysfunction has been linked to Urinary Incontinence (UI). Aging and parity in women can result in myogenic and/or neurogenic damage affecting their activation pattern. Although no animal model fully mimics the human pelvic floor physiology, we studied the histomorphometry and neurophysiology of the pelvic floor nerves in multiparous and aging rabbits to determine if they exhibit comparable damage that in turn could alter PFM physiology and bladder efficacy.  

Methods: Following approval from the Ethics Committee from the Institute Biomedical Research at UNAM, 28 chinchilla-breed adult female rabbits (Oryctolagus cuniculus), young (1-2 years old; YN, n = 8) and aged nulliparous (3-4 years old; ON, n=4), and multiparous (4 vaginal deliveries; YM, n = 10; OM, n = 6) were studied. Nerves controlling the bulbospongiosus (BsN) and pubococcygeus (PcN) muscles were stimulated using hook electrodes to evoke and record compound action potentials (CNAP). The nerves were then dissected, fixed in glutaraldehyde, plastic embedded and evaluated using electron microscopy (EM), by an evaluator blind to the study design. Axon size, myelination (g-ratio) and myelin morphology were compared using unpaired two-tail Student-t or Mann-Whitney U tests.  

Results: Neurophysiological studies confirmed a 40-60% reduction in CNAP amplitude in both BsN and PcN in multiparous rabbits. Histomorphometric analysis showed that the number of large diameter axons in aged multiparous animals (4.46 ± 1.84 per 1000 µm2) were comparable to those in nulliparous rabbits (5.21 ± 1.54 fibers per 1000 µm2). Conversely, g-ratios were not affected by parity, but were reduced approximately 25% in aged multiparous rabbits. Axons undergoing Wallerian degeneration and those with abnormal myelin morphologies including wide Schmidt-Lanterman incisures, and those with thin myelin suggestive of re-myelination, were observed. Aging increased 20% the characteristic degenerative invagination of the myelin sheath.  

Conclusion: Multiparity causes partial damage to the PFM nerves indicated by Wallerian degeneration and re-myelination. These changes were exacerbated by aging. Together with previous published data on reduced bladder efficiency in multiparous and aging rabbits, these findings support the use of this animal model to study pelvic floor deficits.
Poster #BS5
LIQUID CRYSTAL ELASTOMERS AS DYNAMIC MATERIALS FOR THE TREATMENT OF INCONTINENCE
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Presented By: Julia Henricks

Introduction: Current sling materials placed around the urethra are permanently fixed and do not adapt to the patient's continence needs. We report on the design of a novel, shape-changing, material that could support and compress the urethra to achieve continence but can be triggered by the patient to permit effortless voiding.

Methods: To fabricate this dynamic sling, a recently reported (patent pending) class of shape-changing materials, liquid crystal elastomers (LCEs), that can be 3D printed[1] for various shapes and sizes, and respond to changes in temperature was used. A tolerable temperature change, between 37 to 45°C, can be delivered transcutaneously using infrared (IR) light. We tested this class of materials for cytotoxicity (ISO Protocol 10993-5: Biological evaluation of medical devices) to determine its biocompatibility using human fibroblasts.[2]

Results: Mechanical characterization of the LCE material showed actuation occurring over the temperature range 20 to 45°C (Figure 1a), displaying the feasibility of creating dynamic shape change within the body without causing thermal injury to the surrounding cells. Using an LCE-carbon black composite that creates a stronger photothermal effect, a 3D-printed semicircle, 8mm in diameter and 1 mm in thickness, actuates in response to IR light (Figure 1b). The viability of cells on this class of materials, after 24 hours of exposure to 50% or 100% extracts, exhibited survival percentages of 99.7 ± 0.6 and 87.6 ± 4.9%, greater than the 70% threshold for viability.[2]

Conclusions: This new technology allows for the design of a sling that can be dynamically adjusted and 3D printed according to the needs of the patient and her urethral configuration. The material is powered using IR light which can be delivered transcutaneously in a physiological range. The material is shown to be non-cytotoxic. Future work will involve sling testing in an in-vivo model.

OPTIMIZING THE NANOPARTICLE ENHANCED ADHESION OF MUSSEL INSPIRED HYDROGELS FOR TISSUE INTERFACING

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Introduction: Current clinical bioadhesives exhibit weak tissue adhesion with fast degradation [1]. Mussel inspired approaches to new bioadhesives involve synthetic hydrogel systems with catechol moieties grafted onto polymer chains [2], albeit these have lower adhesiveness compared to mussel’s strong underwater adhesion. Our group has demonstrated that a combination of nanoparticles and mussel-inspired hydrogel systems can enhance tissue adhesive nanocomposites (NCs) [ref]. The goal of this study was to further optimize tissue adhesion by varying the nanoparticles (NP) types, sizes and concentrations. Specifically, a nanocomposite of hyaluronate based biomimetic, mussel-inspired hydrogel and PLGA or polydopamine nanoparticles was developed, and its adhesion strength on tissue interfaces was optimized.

Methods: Amussel-inspired polymer (HA-Dopa) was synthesized by grafting dopamine onto sodium hyaluronate (HA) (MW:151-300KDa) under aqueous conditions using EDC-NHS carbodiimide chemistry [4]. Several NCs were formulated combining HA-Dopa polymer with, poly(D, L-lactic-co-glycolic acid) (PLGA) nanoparticles, or N-hydroxysuccinimide (NHS) modified PLGA NPs (PLGA-NHS) or polydopamine (polydopa) NPs using sodium metaperiodate (PI) as a cross-linker. These NCs were characterized for their tissue adhesiveness (Uniaxial lap shear testing, cross head speed:10mm min-1) on a porcine skin-muscle interface (Figure 1A). The effect of nanoparticle concentration (0-20%w/v), nanoparticle type, and size on the tissue adhesion was investigated. Finally, the in vitro cytocompatibility of the optimized NCs was evaluated using human dermal fibroblasts (HDFs).

Results: The HA-Dopa had a dopamine content of 32.7 ± 1.3%. Mechanical testing of NCs on porcine skin-muscle interfaces (Figure 1A) 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 HA-Dopa-Polydopa group, compared to HA-Dopa alone (20.1 ± 2.8 kPa) (Figure 1B). The 100-200 nm sized polydopamine NPs caused the best increase in tissue adhesion strength of HA-Dopa hydrogels. The variation of nanoparticle concentrations revealed a concentration-dependent increase in adhesive strength in all groups of NCs.

Conclusion: In this optimization project, we determined that these nanocomposites may serve as adhesives for applications in tissue interfacing, such as temporary bio-glues for dry to wet tissue adhesion.
Poster #BS7
EXPRESSION PROFILE OF PLATELET-DERIVED GROWTH FACTOR RECEPTOR A (PDGFRα+)-MEDIATED GENESETS DIFFERENTIATES INTERSTITIAL CYSTITIS
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Presented By: Tong Zhou, PhD

Introduction: Platelet-derived growth factor receptor-α (PDGFRα) is a transmembrane tyrosine kinase receptor, which plays a pivotal role in mediating fibrogenesis. Despite the lack of detailed molecular mechanism, several studies have attempted to understand the physiological effect of PDGFRα in human bladder diseases. Here, we provides a novel transcriptomic insight into the impact of PDGFRα in bladder microenvironment and corresponding role in interstitial cystitis (IC) pathogenesis.

Methods: Using RNA-seq techniques, we screened the genome-wide gene expression pattern for the unsorted and sorted PDGFRα immune-positive (PDGFRα+) cells in murine suburothelial and detrusor layers, respectively. We compared the geneset expression pattern between unsorted and PDGFRα+ cells. The differentially expressed genesets were designated as PDGFRα-mediated.

Results: We translationally mapped the PDGFRα-mediated genesets to human IC bladder transcriptomic data and observed a significant overlap between the PDGFRα-mediated genesets and the genesets deregulated in IC. We indicate that i) the PDGFRα-mediated genesets differentiate between IC patients with normal and low bladder capacity and ii) the PDGFRα-mediated genesets differentiate ulcerative IC patients from controls in two independent cohorts, respectively.

Conclusion: Our study suggests a central role of PDGFRα in IC pathogenesis and provides a novel and useful diagnostic method to differentiate IC human subjects.
Poster #BS8
INCIDENCE AND MORBIDITY OF RADIATION-INDUCED HEMORRHAGIC CYSTITIS IN PROSTATE AND BLADDER CANCER
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Introduction: Hemorrhagic cystitis is a complication of pelvic radiation, with an estimated incidence in the literature of ≤5%. This is a challenging condition, as patients often suffer high morbidity and require multimodal treatment. Despite improvements in radiation, series have shown significantly lower rates of gastrointestinal but not genitourinary toxicity. Our study sought to determine if reported incidence rates are accurate and to assess the morbidity and treatment of hemorrhagic cystitis.

Methods: A retrospective chart review was completed of 740 patients at two Detroit Medical Center hospitals who underwent radiation therapy for prostate or bladder cancer between January 2000 and September 2015. In patients who developed hemorrhagic cystitis, we analyzed the incidence, radiation modality, morbidity, treatment, and complications.

Results: The incidence rate of hemorrhagic cystitis was 11.1%. Numerous radiation treatment modalities were utilized including external-beam radiation therapy, intensity-modulated radiation therapy, salvage radiation, mixed neutron/photon beam radiation, brachytherapy, and adjuvant radiation, with no significant difference between them and the development of hemorrhagic cystitis. Patients developed hemorrhagic cystitis an average of 70.3 months (4-300 months) after radiation. The average number of admissions was 2.6 (1-9) with an average length of stay of 7.3 days (1-42 days). 54.9% of patients required blood transfusion with an average of 8.3 units transfused per patient (1-33U). The most common treatment was cystoscopy with fulguration/clot evacuation in 86.4% of patients; patients required an average of 2.6 cystoscopies (1-11). Complications included UTI (30.5%), AKI (23.2%), urethral stricture (14.6%), urosepsis (13.4%), hydronephrosis (4.9%), death (4.9%) and bladder rupture (3.7%).

Conclusion: The incidence of hemorrhagic cystitis following radiation therapy for prostate or bladder cancer is underreported in the literature. Despite improvements in radiation, there was no significant difference between the type of radiation therapy and the development of hemorrhagic cystitis. Hemorrhagic cystitis is associated with high morbidity for patients, requiring multiple hospitalizations, blood transfusions, and procedures. Complications range from infection to death, and urologists need to educate their patients accordingly.
CYCLO-OXYGENASE 2 (COX-2) DETECTION IN BLADDER BIOPSIES OF POST-MENOPAUSAL WOMEN WITH RECURRENT URINARY TRACT INFECTIONS

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Presented By: Amy Kuprasertkul, BS

Introduction: Increased resistance to antibiotics used to treat recurrent urinary tract infections (RUTIs) has created an urgent need for alternative treatments. Studies in mice have linked increased COX-2 levels in infected bladders to recurrence and FDA-approved COX-2 inhibitors protected mice against recurrence (1,2). Furthermore, results from randomized controlled trials suggest that NSAIDs may be an effective treatment for uncomplicated UTIs (3). Our goal was to determine if COX-2’s role in human RUTI by studying COX-2 expression in bladder biopsies from post-menopausal RUTI patients.

Methods: Following IRB approval, cold cup bladder biopsies from control regions (absence of cystitis visually) and infected regions (presence of cystitis visually) were obtained from women with antibiotic refractory RUTI undergoing electrofulguration under anesthesia. Immunostaining was performed on control and infected biopsy sections with antibodies against COX-2 (Rabbit, Cell Signaling) and elastase (Mouse, RD) to detect neutrophils. Stained tissues were visualized with confocal microscopy. For each sample, 10 representative confocal images (40X) of the urothelium were obtained. ImageJ was used to quantify total urothelium cells, COX-2 expressing cells, and neutrophils, and localization recorded in the urothelium. A ratio of COX-2+ urothelial cells to total urothelial cells was calculated. The same ratio was calculated for neutrophils.

Results: Results are presented in the attached table. COX-2 expression was detected in the infected regions of 2/3 patients. In Patient 1, 41% of cells in the infected region expressed COX-2 compared to 10% in the control region. In Patient 3, the infected and control COX-2+ counts were 49% and 4%, respectively. Various cell types expressed COX-2, including umbrella cells, neutrophils, and transitional urothelial cells. Neutrophils expressing COX-2 were found in the infected regions of all patients.

Conclusion: In this preliminary study, expression of COX-2 was detected in the urothelium of bladder biopsies from post-menopausal RUTI patients. These new findings suggest that selective COX-2 inhibitors may be useful in the treatment of RUTIs in humans.
Poster #BS10

PROSTAGLANDIN E2 (PGE2) IN URINE OF POST-MENOPAUSAL WOMEN WITH RECURRENT URINARY TRACT INFECTIONS FOR MONITORING OF URINARY TRACT INFECTION EVOLUTION

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Introduction: Recent studies in mice suggest targeting COX-2 for treatment of recurrent urinary tract infections (RUTI) (1, 2). However, the role of COX-2 in human RUTI remains undefined. Our goal was to measure levels of PGE2, a product of the COX-2 enzymatic pathway, in patients with and without RUTI to determine if PGE2 had the potential to serve as urine biomarker for RUTI.

Methods: Following IRB approval and patient consent, urine was collected from post-menopausal women seen at a tertiary care urology clinic and cultured on CHROMagar. Patients had varying urine analysis (UA), history of urinary tract infections (UTI), and treatment regimens. Urinary PGE2 levels were measured in triplicate for each sample by an accurate and commercially available PGE2 ELISA (Enzo) that was normalized to urinary creatinine (Cr) by a quantitative creatinine assay (Sigma). PGE2/Cr levels were compared between groups of patients classified by several different criteria: clinical history of UTIs, clinical positive vs. negative UA, and bacteriuria count (>104 CFU/ml).

Results: Over 4 months, urine samples of 45 postmenopausal women were analyzed. Women with a history of RUTI with a positive UA (+UA) (n=21) had statistically significant (p = 0.0128) increased levels of normalized urinary PGE2 (mean=1403 pg/mg) compared to patients with no history of UTI with negative UA (-UA) (n=6, mean=464 pg/mg) (see Figure). In women with negative UA, the difference in normalized PGE2 levels between patients with a history of RUTI (n=18, mean=1204) and those with no lifetime history of UTI was not significantly significant. The latter group never had values exceeding the 1,000 PGE2/Cr, whereas both groups with a history of RUTI had levels two to threefold higher. No significant difference in normalized PGE2 levels was noted when patients were classified based on presence vs. absence of bacteriuria on CHROMagar.

Conclusion: In this exploratory study on post-menopausal women, we found a statistically significant increase in levels of urinary PGE2/Cr in patients with a history of RUTI with +UA versus patients reporting never having a UTI. These new findings suggest that PGE2 may be a useful urine biomarker for RUTI.

References:
Poster #BS11
HISTOPATHOLOGICAL SCORING OF CHRONIC AND ACUTE INFLAMMATION IN THE BLADDER WALL DURING RECURRENT URINARY TRACT INFECTION (RUTI)
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Introduction: Mouse studies suggest that the host inflammatory response plays a critical role in RUTI and that the intensity of the neutrophil response determines the propensity for recurrence (1, 2). Another hypothesis is that UTIs reoccur because the adaptive immune response to UTI is severely limited (3). Since the local bladder immune response during human RUTI remains undefined, we studied bladder wall biopsies from postmenopausal RUTI patients to create a histopathological scoring scheme for local acute (innate) and chronic (adaptive) inflammation in the bladder, and then used this scheme to analyze the severity of these inflammatory processes.

Methods: Following IRB approval and patient consent, cold cup biopsies were taken from 14 women under anesthesia undergoing cystoscopy with fulguration of trigonitis for treatment of antibiotic refractory RUTI. Tissue biopsied from control (visual cystitis) and infected (no visual cystitis) bladder regions was fixed in 4% paraformaldehyde, paraffin-embedded and longitudinally sectioned. One section was stained with Hematoxylin and Eosin for each biopsy. A scoring scheme was developed to describe both acute and chronic inflammation and then used by an experienced bladder pathologist (JM) to score all sections (see table footnote). Immunohistochemistry was performed on sections from control and infected regions to detect T-cells (CD3+) and B-cells (CD20+), and the quantity and location of these cell types was recorded.

Results: Acute and chronic inflammation scores are reported in the table and the scoring scheme described in the footnote. All patients demonstrated at least mild chronic inflammation (chronic score>1) evidenced by the presence of lymphocytes within the urothelium and lymphoid aggregates. Detected lymphocytes included CD3+ T-cells, CD20+ B-cells, and plasma B-cells. Acute inflammation was more varied, as a robust neutrophil response (acute score>2) was only observed in the infected regions of 7/14 patients.

Conclusion: This preliminary study provides insight into the immunological landscape of the bladder during RUTI. We demonstrated that lymphocytes from both B-cell and T-cell lineages are present in the bladder wall of postmenopausal RUTI patients, suggesting that the adaptive immune response is active during human RUTI.

References:
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Poster #BS12

URINE METABOLOMICS AND RAPID BACTERIAL GROWTH
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Presented By: Larry Reitzer, BS, PhD

Introduction: The extremely rapid growth of uropathogenic Escherichia coli, the most common cause of urinary tract infections (UTIs), is recognized as a virulence factor. Rapid growth requires abundant nutrients. We compared and normalized large urine metabolomics databases to examine likely components for rapid bacterial growth.

Methods: Only two large metabolic data repositories exist. The first summarizes 400 components measured prior to 1974 [1]. The second set is the continually updated Human Urine Metabolome [2], which summarizes 2651 metabolites detected in urine. All values are given as concentrations, even though the original results were normalized to creatinine levels.

Results: Components over 1 millimolar were urea (300 mM), Na+ (120 mM), Cl− (115 mM), K+ (45 mM), NH4+ (30 mM), SO4− (20 mM), PO4− (10 mM), creatinine (10 mM), Ca+2 (5 mM), Mg+2 (3 mM), citrate (2.5 mM), hippuric acid (2.3 mM), uric acid (1.6 mM), glycine (1.2 mM), and cysteine (1 mM). The most abundant carbon sources were amino acids: ~4 mM free amino acids and an additional ~3 mM amino acids in peptides. The five most abundant amino acids were glycine (1.6 mM), cysteine (0.97 mM), histidine (0.56 mM), glutamine (0.46 mM), and serine (0.30 mM). Urine contained several carbohydrates (none over 1 mM), some TCA cycle intermediates, and nucleobases. Utilizable sources of nitrogen (ammonia), sulfur (sulfate), and phosphorus (phosphate) were more abundant than carbon sources, which implies that they do not limit bacterial growth. The average variation of a urine component is 50%.

Conclusion: Knowledge of nutrients required for rapid bacterial growth in urine is critical to develop new treatment strategies for UTIs. A large range of variability exists in urinary metabolites, not only between individuals, but also for one individual over time. These ranges could be important for understanding UTIs, since an individual may become susceptible to infection when a limiting nutrient concentration becomes favorable.

**Poster #BS13**

**CHRONIC MONITORING OF VOIDING FUNCTION IN A NOVEL MODEL OF DETRUSOR UNDERACTIVITY**

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Presented By: Eric Gonzalez, PhD

**Introduction:** Detrusor underactivity (DUA) is an understudied health concern with inadequate clinical management. The limited availability of animal models that exhibit the pathophysiology of DUA impedes the development of new therapeutic approaches. The current studies monitored chronic voiding function in an obesity model of DUA and investigated the contractility of detrusor and urethral tissues.

**Methods:** Eight-week old female obese prone (OP) rats were fed a 45% fat diet from 9-21 weeks and a 60% fat diet from 21 weeks to end of study. Chronic bladder function (voided volume and voiding frequency) was assessed twice per week for up to 30 weeks in metabolic cages. After voiding function testing, rats were euthanized and full thickness longitudinal bladder strips and urethral rings (proximal and middle) were harvested and mounted in tissue baths (DMT, Denmark). Tissue contraction and viability was assessed with potassium chloride (120mM). Both bladder strips and urethral rings underwent escalating concentration response curves to carbachol (10⁻⁸M to 10⁻⁵M). Bladder strips also underwent electric field stimulation (EFS) with or without atropine (10⁻⁷M) or alpha,beta-methylene ATP (10⁻⁶M), whereas EFS in urethral rings was in the presence or absence of a ryanodine receptor antagonist, dantrolene (10⁻⁵M), to distinguish between smooth and skeletal muscles.

**Results:** During the chronic monitoring of bladder function, voiding frequency and voided volumes of OP rats remained relatively constant when normalized to water intake. Following implantation of an indwelling catheter, OP rats increased voiding frequency and decreased voided volume over a 5-10 week monitoring period (p≤0.001). Bladder contractility to carbachol and EFS was decreased in OP rats and the carbachol EC50 was increased compared to naive rats (p≤0.001). In addition, cholinergic mechanisms mediated 40% of the EFS-evoked contractions in OP rats, whereas only 7% were mediated by purinergic mechanisms. The mid-urethral ring with striated muscle exhibited increased contractility with carbachol and EFS compared to the proximal urethral ring in OP rats. Dantrolene also decreased mid-urethral contractility to the baseline levels of proximal urethral contractility suggesting we were able to separate smooth and skeletal muscle responses.

**Conclusion:** This animal model may be used to determine the myogenic and neurogenic contributions to DUA and to evaluate chronic voiding function when developing novel therapeutics.
EFFECT OF TIBIAL NEUROMODULATION ON MULTIPLE SHEEP BREEDS

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Introduction: Tibial neuromodulation (TNM) is clinically approved for refractory OAB. Like other therapies, only a subset of patients responds to TNM. TNM, but not transcutaneous electrical nerve stimulation (TENS), has been shown to increase bladder capacity in the female, Polypay sheep. Though this effect has been characterized in one breed, animal models using homogenous populations often do not recapitulate variability of the clinical population. Introduction of additional sheep breeds may introduce physiological variability and better represent the clinical population. This study tested the effect of TNM on bladder capacity in Suffolk, Dorset, and Freisen sheep breeds.

Methods: Three sheep of each breed (Suffolk, Dorset and Freisen) received unilateral percutaneous TNM (20Hz, 0.2 ms pulse width, at maximum tolerable amplitude) using the NURO™ system. Maximum tolerable amplitude (MTA) was the highest current setting that the awake sheep comfortably tolerated. Ten single-fill cystometry trials were performed in each experimental session as described previously. Briefly, warmed saline was infused (30 ml/min) via a 12Fr urinary catheter until bladder pressure sharply rose past 30 mm Hg and the sheep assumed a voiding posture (crouching stance with bent rear legs) or after bladder pressure reached 30 mm Hg for more than 5s with no postural response. The primary measure was bladder capacity, defined as saline volume (in ml) infused into the bladder before voiding. Trials 1-5 were conducted with no TNM, while TNM was applied throughout trials 6-10. Statistics were performed using SigmaPlot (Systat Software, Inc., San Jose, CA) with p<0.05 considered significant.

Results: Average bladder capacity was 99.8±6.1 ml for Suffolk, 91.4±7.0 ml for Dorset and 61.0±7.0 ml for Freisen sheep. TNM significantly increased bladder capacity to 133±7.1 ml in Suffolk and 116.4±7.3 ml Dorset breeds (33% and 27%, respectively) similar to the previously reported effect of TNM in Polypay (70.0±10.8 to 105.0±11.1 ml, 50% increase). Bladder capacity in Freisen sheep did not significantly change with TNM (57.9±6.4 ml, non-significant 5% decrease).

Conclusion: Differences in responsiveness to TNM across breeds suggest potential neurophysiological and/or urological variation that may more accurately reflect clinical realities. Future work should investigate the source of these differences and expand the breadth of the sheep model.
**Poster #BS15**  
**TRAUMATIC BRAIN INJURY-RELATED VOIDING DYSFUNCTION IN MICE IS CAUSED BY DAMAGE TO ROSTRAL PATHWAYS, ALTERING INPUTS TO THE REFLEX PATHWAYS**

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Presented By: Ian Bryce Maclver, PhD

**Introduction:** Neurodegenerative diseases, including those caused or worsened by traumatic brain injury (TBI) often lead to severe bladder dysfunction, which can be extremely debilitating and can force long term institutionalization. The causal mechanisms remain unclear. TBI can result from a single severe event (e.g. a motor vehicle accident) or from repetitive events, (e.g. contact sports); both forms lead to chronic traumatic encephalopathy (CTE). CTE results in pathological neurofibrillary tangles of phosphorylated tau protein, which spreads through the brain; CTE resembles and can be a model for neurodegenerative diseases.

**Methods:** Two month old male C57BL6/J mice were subjected to repetitive moderate brain injury (rmdTBI) using a closed head injury model with a subgroup treated over a 4 month period with *cis* pT231-tau monoclonal antibody, an antibody that prevents tau neurofibrillary tangles forming, while the remaining animals received mouse IgG. Sham mice underwent an identical procedure without receiving injury. Mice were monitored by void spot assay at 2 weeks, 2 months and 6 months post injury. At 8 months post injury we used urodynamic cystometry (CMG) to test bladder function in conscious mice, after which mice were sacrificed for recovery of brain and bladder tissue.

**Results:** Void spot assay showed indications of bladder dysfunction developing in the TBI group 6 months after injury, but not before, whereas *cis* pT231-tau antibody treated and sham mice showed no dysfunction. On CMG, TBI mice showed overactive bladder, with significantly reduced intervoid intervals and maximal voiding pressures, while *cis* pT231-tau antibody treated and sham mice showed generally normal voiding patterns. Brain sectioning revealed tauopathy in cortex and hippocampus regions of TBI mice, but not in mid brain (Periaqueductal Gray) and hind brain (Barrington's nucleus) regions associated with control of bladder filling and voiding. No bladder pathology was observed.

**Conclusion:** rmdTBI leads to bladder dysfunction, which can be prevented by treatment with *cis* pT231-tau antibody. Brain pathology was observed in cortical and hippocampal regions, but not in regions directly controlling filling/voiding reflexes, which shows that inputs from higher brain regions are required for normal bladder functioning, and that derangements in these inputs causes bladder dysfunction in TBI.
Poster #BS16
SAFETY AND MECHANISM OF ACTION OF ENERGY-BASED DEVICES FOR THE TREATMENT OF UROGYNECOLOGICAL CONDITIONS
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Presented By: Maria Canter, MD, FPMRS, FACOG, MSC

Introduction: The characteristics of available energy-based technologies, the scientific data supporting use in the clinical setting, indications for use, the differences between lasers and radiofrequency (RF) energy administration and proven clinical outcomes are important considerations when selecting an energy-based device for urogynecologic conditions, particularly with recent regulatory communication. There were concerns with precedent devices in the treatment of urogynecologic conditions which makes the characterization of energy-based devices all that more important.

Methods: Preclinical experimentation was performed to better characterize the safety and mechanism of action (MOA) of cryogen-cooled monopolar radiofrequency (CMRF) treatment. Studies included ex vivo and in vivo tissue and temperature assessments, as well as gene expression evaluation. In addition, a literature review was conducted to compare the different types of energy-based treatments and the research to date.

Results: Ex vivo experiments with ovine tissues showed that the administration of CMRF energy at varying doses to different areas of the vaginal canal did not cause abnormalities or thermal injury to vaginal or peri-vaginal tissue. Further in vivo studies demonstrated histological changes and tissue temperatures reminiscent of tissue restoration throughout the lamina propria. Gene expression profiles following CMRF treatment further support the proposed MOA. The depth of treatment and cellular effects differ between technologies. Lasers have a more superficial effect, as do some RF devices, which may be beneficial for certain purposes, while monopolar RF is able to penetrate more deeply. Unless the intent is to ablate tissue, protecting the surface tissue may be important to minimize damage. There are many energy-based treatment options for urogynecologic conditions, with varying degrees of supportive information and available research. The gold standard for understanding efficacy and safety of a treatment is a randomized, blinded, placebo-controlled trial; this is imperative to minimize bias and discern treatment effect over placebo.

Conclusion: Current data support the safety of CMRF treatment, superior to precedent RF devices. Basic research helps define the MOA of the energy-based devices while clinical data validates the scientific hypotheses and safety. Different methodologies may offer benefit for different medical conditions. Together they may be synergistic. It's important to understand the capabilities and limitations of the available technologies to make the best decisions for patients.
**Poster #BS17**

**EPIGENOMIC MODIFICATION AS A MECHANISM OF HYPERGLYCEMIC MEMORY IN THE DIABETIC BLADDER**

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Albert Einstein College of Medicine
Presented By: Kelvin Paul Davies, MSc, PhD

**Introduction:** Diabetes results in several bladder pathologies, commonly referred to as diabetic bladder dysfunction (DBS). Even when diabetic patients are brought under glycemic control, this often fails to fully restore normal bladder physiology (a condition known as “hyperglycemic memory”). Hyperglycemic memory in the bladder has neither been widely reported nor systematically investigated. The goal of this study was to increase our understanding of the mechanisms resulting in hyperglycemic memory in the bladder and identify novel targets to treat DBD that persists in patients that are under glycemic control.

**Methods:** We used streptozotocin-(STZ)-treatment of Fischer F344 rats as a model of Type-1 diabetes (T1D). Detrusor tissue was isolated from three groups of animals; 1) 4-month STZ-diabetic rats ($N=5$), 2) 3-month STZ-diabetic rats treated for 1-month with insulin ($N=5$) and 3) non-diabetic age matched control ($N=5$). Detrusor from the three groups was analyzed for global metabolite expression (by metabolomics) and genome wide DNA-methylation profiling (using the HELP- (HpaII fragment Enrichment by Ligation-mediated PCR) assay. Western blot assay were used to confirm that epigenomic modification of specific genes correlated with protein expression.

**Results:** Metabolomic analysis demonstrated that insulin-treatment of diabetic animals reversed the majority of the effects of diabetes on metabolism in detrusor, but certain pathways were refractory to insulin treatment, such as the metabolism of leucine, isoleucine and valine. Similarly, the methylation pattern in diabetic animals demonstrated that the majority of epigenomic changes were reversed with insulin-treatment, however, a subset of the changes were not reversed with insulin. Interestingly, changes in the methylation pattern of genes in the loci which are involved in the metabolism of leucine, isoleucine and valine were not reversed by insulin correlating with the failure of insulin treatment to reverse the metabolism of these amino acids. Western blot analysis confirmed methylation patterns are predictive of changes in expression.

**Conclusion:** Overall these data strongly support a role for methylation in hyperglycemic memory and demonstrate our ability to link specific epigenetic modifications to changes in specific metabolic pathways. We believe identifying the genes most likely to be responsible for hyperglycemic memory represent the most promising pharmaceutical targets for treating pathophysiology associated with DBD not reversed by glycemic control.
Poster #BS18
PATIENT AND UROLOGIST INTERACTIONS: SEXUAL HARASSMENT A SURVEY AMONG UROLOGISTS
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1San Antonio Uniformed Services Health Education Consortium, 2San Antonio Uniformed Services Health Education Consortium
Presented By: Pansy Uberoi, MD, MPH

Introduction: Prevention of sexual harassment is emphasized in the workplace. Required training and education often addresses interactions between colleagues and co-workers. However, there is little known if or to what degree urologists experience harassment from patients. This survey investigates the frequency, nature of such interactions and the impact sexual harassment has on urologists.

Methods: A 15 question survey was sent to 118 accredited Urology residency programs in the US as well as the Society of Women in Urology list-serve.

Results: Two-thirds of respondents endorse having been sexually harassed by a patient in a medical setting; no differences were noted among race/ethnicity or level of training. The response rate was 2.5% with 110 physicians responding to the questionnaire. Nine percent report having been touched inappropriately by a patient. Females reported experiencing sexual harassment significantly more than males, p < 0.001. When compared to males, females were more likely to have been asked on a date (p=0.013), more likely to be complimented on their facial features (p<0.0001), more likely to receive compliments about their body (p=0.019), more likely to have experienced a prolonged embrace (p=0.017), and more likely to have endured comments regarding touching the patient’s genitalia (p<0.0001). Among all respondents, approximately half considered their experiences moderate or severe harassment. One third of urologists who were mostly dissatisfied with their career have experienced severe levels of harassment. Sexual harassment has an impact on physicians, 23% reported feeling violated and 20% were unsure of themselves as a result of these experiences.

Conclusion: A majority of urologists that responded to this survey have experienced some degree of sexual harassment from patients. The frequency of harassment may be over represented due to response bias. Incorporating techniques on how to handle such situations during training may be beneficial to decrease the frequency of such experiences and mitigate the impact on physicians. Employers and practice groups should consider establishing policies for managing patients whose behavior is considered harassing in nature.

Poster #BS19 - WITHDRAWN
AMBULATORY AND EX-VIVO EFFECT OF INTRADETRUSOR iPSC-DERIVED HUMAN PROGENITOR SMOOTH MUSCLE CELLS IN A RAT MODEL OF RADIATION INDUCED BLADDER DYSFUNCTION

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1Stanford University, Dept. of Urology, 2Stanford University, Dept. of Obstetrics and Gynecology, 3Stanford University, Dept. of Radiation Oncology

Presented By: Amy D. Dobberfuhl, MD, MS

Introduction: Adverse effects of pelvic radiation include radiation cystitis, urothelial hemorrhage and ischemic bladder fibrosis. Mesenchymal stem cells are known to promote tissue repair and inhibit inflammation/fibrosis. Our aim was to investigate the ambulatory and ex-vivo effect of intradetrusor iPSC-derived human progenitor smooth muscle cells (pSMC) in a rat model of radiation cystitis.

Methods: Twenty-four female Rowett-nude rat bladders were irradiated on day 0 [n=6 (0Gy); n=18 (20Gy)]. On day 53, randomized-blinded intradetrusor injection was performed [n=5 (20Gy-Vehicle); n=8 (20Gy-pSMC)]. Nocturnal void volume was measured using metabolic cages biweekly (day 0-81). 4-weeks after injection (day 81), bladders were assessed by cystometry, organ bath and histology. Data were analyzed in SAS.

Results: There were 1,242 nocturnal voids (146 cage cycles, 7 time points). Volume per void was immediately reduced following irradiation. There was 28% (5/18) mortality from radiation proctitis (day 28-51). Following injection, survival of cells was confirmed by luciferase bioluminescence imaging. Nocturnal mean voided volume was partially improved after 20Gy-pSMC injection at 2-weeks after injection. After pSMC injection (day 51-81), there was normalization in number of voids (r=-0.03, p=0.892), total urine production (r=0.01, p=0.96) and stool output (r=-0.15, p=0.53). On multivariate linear regression, after adjusting for covariates (water intake, total urine output, rat weight, stool output), there was a reduction in voided volume after vehicle injection (p<0.20%). Improved voiding (VE>30%) was noted in 80% (4/5) of rats at 4-weeks after pSMC injection (day 81). On organ bath myography (day 81), irradiation weakened carbachol response in all tissues. pSMC bladder strips demonstrated partial improvement in potassium-chloride response (100-200mM) and sustained increase in electrical field stimulation contractility at 64Hz [mean tension 1.21g (20Gy-pSMC) vs. 0.84g (0Gy), p=0.12]. On histology, human nuclei colocalized with smoothelin, a marker of smooth muscle.

Conclusion: Following pelvic irradiation, pSMC intradetrusor injection partially improved ambulatory mean voided volume, cystometric voiding efficiency, potassium-chloride response and electrical field stimulation contractility.
POSTER #BS21  
FACTORS AFFECTING TEMPORAL CHANGES IN PANNEXIN 1 CHANNEL EXPRESSION IN THE DIABETIC BLADDER  
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1Albert Einstein College of Medicine/Montefiore Medical Center Department of OB/GYN, 2Albert Einstein College of Medicine/Montefiore Medical Department of Urology, 3Albert Einstein College of Medicine/Montefiore Medical Center Department of Urology  
Presented By: Shirly Solouki, MD  

Introduction: Pannexin 1 (Panx1) channels are key components of the urothelial mechanosensory system and play important roles in sensation of bladder distention. We observed that Panx1 expression in diabetic mice is altered in a time-dependent manner and correlates with bladder transition from a compensated overactive to decompensated underactive state. Hyperglycemia and polyuria are viewed as main factors leading to emergence and temporal progression of diabetic bladder dysfunction (DBD). Moreover, in a diuresis model, we observed an early increase in hypoxia markers in the urothelium, suggesting a role for hypoxia. The interplay and individual roles of hyperglycemia, polyuria and hypoxia in DBD has yet to be determined. Our objective is to examine the individual contribution of these factors in dysregulating Panx1 expression in the diabetic urothelium.  

Methods: Immortalized-human (TRT-HU1) and mouse urothelial cell cultures were submitted to three conditions: (1) High extracellular glucose (HG; 450 mg/dL glucose) or control glucose level (100 mg/dL) for 8, 12, 24 hours, 4 and 8 days; (2) hypoxia (1% oxygen) or normoxia (21% oxygen) for 1, 4, 6 and 8 hours; and (3) mechanical stimulation by cyclic uniaxial stretch (5 min at 10% strain with 5 min rest intervals) for 2 and 5 hours or non-stimulated. Total RNA was extracted from these cells and processed for Panx1 mRNA analysis by qRT-PCR.  

Results: Short-term exposure to HG increased Panx1 expression (12 hours: 1.13±0.03; N=3; p<0.01) relative to controls. Exposure to hypoxic conditions induced a progressive increase in Panx1 expression (8 hours: 1.63±0.21; N=3; p<0.01) relative to controls. Prolonged cyclic-stretch downregulated Panx1 expression (5 hours: 0.66±0.07; N=3; p<0.05) relative to non-stimulated controls.  

Conclusion: Exposure to high glucose, prolonged mechanical stimulation and hypoxia individually and in combination plays a role in altering Panx1 expression in the bladder urothelium. Further studies focusing on the underlying mechanisms of the effect of these factors on the bladder urothelium can identify therapeutic targets to prevent and better manage temporal progression of DBD.
Poster #BS23
DEVELOPMENT OF AN EX VIVO FUNCTIONAL PIG BLADDER MODEL FOR THE QUANTIFICATION OF ACUTE DYNAMIC ELASTICITY
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Presented By: Naveen Nandanan, MD

Introduction: Recent studies have shown that the viscoelastic property of the bladder wall is not static, but a dynamic characteristic which can be acutely adjusted through repeated filling and passive emptying. Furthermore, this strain softening is reversed though active voiding, which has been termed “dynamic elasticity.” The aim of this study was to quantify this biomechanical feature of the bladder in a controlled isolated environment.

Methods: Pig bladders were harvested immediately after slaughter from local abattoirs. Thevesical arteries were cannulated to allow perfusion of oxygenated Krebs-Henseleit buffer and the urethra was catheterized to allow infusion, monitor intravesical pressure and to permit voiding. The bladders then underwent a urodynamics protocol employing an initial fill and 3 comparative test fills (1-3) to 250mL followed by either passive emptying through syringe aspiration or active voiding through potassium induced contractions. The initial fill was followed by an active void to empty the bladder and filling data “after active voiding” was recorded in Fill1. The bladder was passively emptied following Fill1 and filling data was recorded “after passive emptying” during Fill2. The bladder was actively voided after Fill2 and filling data “after active voiding” was recorded in Fill3. The average pressure throughout each fill was calculated and dynamic elasticity was quantified as the change in average pressure between fills divided by the change in percent capacity of filling (assumed to be 50% of a 500mL bladder).

Results: The comparative-fill protocol was performed on two male pig bladders. Both showed decreased average pressure throughout filling after passive emptying (Fig 1a, Fill2 compared to Fill1) and an increase back to baseline during filling after active voiding (Fig 1a, Fill3 compared to Fill1). Dynamic elasticity was lost to strain softening and was regained following active voiding (Fig 1b).

Conclusion: By quantifying dynamic elasticity in an isolated pig bladder model, it can be studied in a controlled environment. The factors affecting dynamic elasticity can be further investigated individually leading to a better understanding of this phenomenon and its role in the biomechanics of the bladder. This could have diagnostic and therapeutic implications in the management of bladder pathology.
Poster #BS24
LOCALIZATION AND EXPRESSION OF EXTRACELLULAR MATRIX COMPONENTS VERSICAN AND HYALURONAN IN URETHRAL AND VAGINAL TISSUES IN HUMAN SPECIMENS AND IN RAT MODEL OF URINARY INCONTINENCE
Ingrid Harten1, Stephen Evanko1, Jay Choe2, Eugene Lee3, Marika Bogdani1, Thomas Wight1, Una J. Lee4
1Matrix Biology Program, Benaroya Research Institute at Virginia Mason, 2Naval Medical Center, 3Kaiser Permanente, 4Section of Urology, Virginia Mason
Presented By: Una J. Lee, MD, FPMRS

Introduction: Abnormal extracellular matrix (ECM) has been correlated with stress urinary incontinence (SUI). ECM components versican (VC) and hyaluronan (HA) play key roles in regulating tissue inflammation and maintaining connective tissue homeostasis. The objective of this study is to analyze the localization and expression of ECM components VC and HA in urethral and vaginal tissues in human clinical specimens and in a rat model of urinary incontinence.

Methods: Nulliparous Sprague-Dawley female rats underwent vaginal distension (VD), a rodent model of SUI, or a sham procedure. Tissues were harvested from 6 rats per group at days 1, 4, and 21 for immunohistochemistry and RNA expression analysis of ECM components. Urethral and vaginal samples from female patients with and without SUI were also examined.

Results: High intensity staining of VC was found in both sham and VD animals 1 day after surgery. This elevation persisted at day 4 in VD compared to sham, with concurrent reduced mRNA expression of VC degrading enzymes ADAMST 5 and 9 (Figure 1). Abundance of HA was not different between VD and sham, however mRNA expression of the HA synthase Has2 was significantly reduced in VD at day 4. Abundant versican staining was found in 60% of patient samples with SUI, which was strongest in regions of disrupted elastin.

Conclusion: Reduction of VC degrading enzymes and HA synthases at day 4 post surgery indicate a potential delay in ECM turnover associated with SUI. Abundant VC is associated with inflammation and elastin fiber network disruption, warranting further investigation to determine its role in the pathogenesis of SUI.
Poster #BS25
VOLUNTARY EXERCISE IMPROVES VOIDING FUNCTION AND BLADDER HYPERALGESIA IN AN ANIMAL MODEL OF STRESS-INDUCED VISCERAL HYPERSENSITIVITY
Melissa T. Sanford1, Jih Chao Yeh2, Jackie Mao2, Rong Zhang2, Zhuo Wang2, Daniel Holschneider2, Larissa Rodriguez2
1Texas Tech University Health Sciences Center, 2University of Southern California
Presented By: Melissa T. Sanford, MD

Introduction: The underlying mechanism of IC/BPS is not well understood and evaluation of current therapeutic interventions have not identified any generally effective treatments. Physical activity has shown beneficial effects on individuals suffering from chronic pain. Anxiety-prone rats exposed to WAS develop urinary frequency and bladder hyperalgesia with high face and construct validity for the study of interstitial cystitis/bladder pain syndrome (IC/BPS). The aim of this study was to evaluate the role of chronic voluntary exercise on urinary frequency, voiding function and hyperalgesia in animals exposed to WAS.

Methods: Twenty-six female Wistar-Kyoto rats were exposed to WAS and were randomized to either weekly voluntary exercise for 3 weeks or sedentary groups. Voiding parameters, tactile allodynia and referred bladder hyperalgesia were assessed at baseline, post-WAS, and weekly for 3 weeks. Prior to euthanasia, the animals underwent cystometrogram (CMG), external urinary sphincter electromyography, and assessment of visceromotor response to isotonic bladder distension (IBD).

Results: WAS caused adverse changes in voiding parameters and von Frey sensitivity testing in animals exposed to WAS. Compared to sedentary animals, animals in the voluntary exercise group had improved voiding parameters on metabolic cage and CMG and improved bladder hypersensitivity as determined by VMR response to isotonic bladder distention.

Conclusion: Voluntary exercise in an animal model of chronic stress leads to improvement in voiding function and bladder visceral hyperalgesia.
Poster #BS26
MRI SHOWS BLADDER WALL THICKNESS AND DETRUSOR MUSCLE VOLUME INCREASE IN ASSOCIATION WITH AGE-DEPENDENT INCREASE IN PROSTATE VOLUME
Lucille Anzia¹, Shane Wells², Wade Bushman¹, Alejandro Roldán-Alzate²
¹Department of Urology - UW Madison, ²Department of Radiology - UW Madison
Presented By: Alejandro Roldán-Alzate, PhD

Introduction: Previous studies of aging men utilizing imaging, specifically US and CT, have demonstrated age-related increases in bladder wall thickness (BWT) and increased detrusor muscle volume (DMV). Additionally, these studies have shown BWT and DMV are greater in men with BPH/LUTS and bladder outlet obstruction. We report here the first use, to our knowledge, of magnetic resonance imaging (MRI) to quantify age-related changes of BWT, DMV and prostate volume (PV) in a cohort of men with MRI obtained for indications unrelated to the genitourinary system. We describe our methodology and association of highly significant age-related increases in prostate volume, bladder wall thickness and detrusor muscle volume in a population of men between the age of 30 and 69.

Methods: Fifty-eight pelvic MRI examinations were retrospectively analyzed. Patients were divided by decade of age into four groups (n30 = 14, n40 = 15, n50 = 15, n60 = 14). MRI was performed on a clinical 3T scanner (Discovery MR 750, GE Healthcare, Waukesha, WI) with an 32-channel body coil (NeoCoil, Pewaukee, WI). The prostate and detrusor muscle volumes as well as bladder wall thickness were measured from ‘fast-spin echo’ (FSE) T2-weighted acquisitions using a segmentation software (Mimics) (Fig1A). This sequence allows for clear visualization and segmentation of the prostate and bladder wall.

Results: PV, BTW and DM were found to be progressively and significantly increased from the third to the sixth decade (p* = 0.04, 0.01 and 0.01, respectively).

Conclusion: This study demonstrates that MRI can be used to determine PV, BTW and DMV in male patients. Further, this cross-sectional study provides evidence that increases in BTW and DMV occur in association with age-related increases in PV, and support the notion that increased outlet resistance elicits a hypertrophic response from the bladder detrusor muscle.

Figure1.A. 3D segmentation of the bladder and prostate from MR images. B. Prostate volume; C. Bladder wall thickness and D. Detrusor muscle volume changes with age.
Poster #BS27
COMPARISON OF ARTIFICIAL FINGER MEASUREMENTS OF CONTROL AND PROLAPSED ANTERIOR VAGINAL WALL TISSUE IN OPERATING ROOM AND CLINIC SETTINGS
Connie N. Wang1, Alana Christie, MS1, Michael Abraham, MS2, Christopher Abrego, PhD2, Panos Shiakolas, PhD2, Philippe E. Zimmern, MD1
1UT Southwestern, Dallas, TX, 2UT Arlington, Arlington, TX
Presented By: Connie N. Wang

Introduction: To compare biomechanical properties of anterior vaginal wall (AVW) tissue in prolapsed and control women in response to different indentations applied via an operator-independent artificial finger in operating room (OR) and clinic settings.

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 AVW deformations in non-prolapsed (control) and prolapsed women at 10, 15 and 20 degree angles in both OR and clinic settings. All measurements were performed in the supine position, with patients under general anesthesia in the OR or with minimal patient movement in clinic. Each AVW deformation sequence included 1 second upwards indentation, 1 second maintenance “hold”, and 1 second return of the fingertip to the baseline. Deformations were done in triplicate with a 3 second interval between each. Real-time voltages, equivalent to reaction forces sensed by the sensor during each indentation, were modeled as motion profiles, which were used to calculate average 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 for each deformation sequence.

Results: 23 women were studied, of which 9 were control patients, 6 had stage 1 prolapse, 7 had stage 2 prolapse, and 1 had stage 3 prolapse. 6 women had measurements performed in clinic setting and 17 women had measurements performed in the OR. Multivariate analysis of motion profile properties is shown in Table 1. There was a significant (<.001) difference in baseline voltage, amplitude change, and slope of indentation at 10 degrees of indentation for all women. There was no significant difference in any motion profile parameter between OR and clinic settings.

Conclusion: The biomechanical properties of AVW tissue in prolapsed and non-prolapsed women can be objectively measured via an operator-independent artificial finger with significant sensitivity at 10 degrees of indentation. There is no significant difference between artificial finger measurements of AVW tissue in OR and clinic settings.

Table 1: Differences in voltage readings from the intelligent Finger, multivariate model, all controls

<table>
<thead>
<tr>
<th>Group</th>
<th>Baseline Mean (95% CI)</th>
<th>p</th>
<th>Amplitude Mean (95% CI)</th>
<th>p</th>
<th>Slope Mean (95% CI)</th>
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<tr>
<td>Control (n=9)</td>
<td>0.9 (0.4, 1.3)</td>
<td>0.871</td>
<td>1.5 (0.7, 2.3)</td>
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<td>Stage 1 (n=6)</td>
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<td>1.7</td>
<td>1.8 (0.9, 2.7)</td>
<td>0.21</td>
<td>1.1 (0.2, 2.1)</td>
<td>0.19</td>
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<tr>
<td>Stage 2 (n=7)</td>
<td>0.7 (0.2, 1.1)</td>
<td>0.92</td>
<td>1.1 (0.2, 1.9)</td>
<td>0.10</td>
<td>1.2 (0.2, 2.2)</td>
<td>0.23</td>
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<tr>
<td>Stage 3 (n=1)</td>
<td>0.5 (0.7, 0.7)</td>
<td>0.7</td>
<td>0.7 (-1.3, 2.7)</td>
<td>0.7</td>
<td>0.7 (-1.5, 3.0)</td>
<td>0.09</td>
</tr>
<tr>
<td>Degree of indentation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10°</td>
<td>0.9 (0.5, 1.3)</td>
<td>&lt;0.001</td>
<td>0.8 (0.1, 1.4)</td>
<td>&lt;0.001</td>
<td>0.8 (0.1, 1.5)</td>
<td>0.0004</td>
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<td>0.4367</td>
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<td>0.9032</td>
<td>1.0 (0.2, 2.1)</td>
<td>0.4367</td>
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**Poster #BS28**

**EFFECT OF WHOLE FRUIT CRANBERRY ON URINARY PROANTHOCYANIDIN METABOLITES IN WOMEN**

Katherine Amin¹, Lynn Stothers², Ying Liu², Paula N. Brown², Dena Moskowitz¹, Alvaro Lucioni¹, Kathleen C. Kobashi¹, Una J. Lee³

¹Virginia Mason Medical Center, ²University of British Columbia

Presented By: Katherine Amin, MD

**Introduction:** Proanthocyanidin-A (PACs), the active component of cranberry (*Vaccinium macrocarpon*), inhibits bacterial adhesion to urothelial epithelium, possibly leading to UTI prevention, however variability exists among cranberry supplements and detection of PAC metabolites. To date, little is known about *in vivo* metabolism of whole fruit cranberry. We investigate urinary PAC metabolite levels, measured as peonidin-3-O-galactoside (P3Ga), in women after ingestion of fresh or frozen whole fruit cranberry.

**Methods:** In this prospective IRB-approved study, we included healthy adult females. Women with a history of neurogenic bladder, taking chronic anti-inflammatory medication, warfarin, or any antibiotic, or with an active UTI or symptoms were excluded. We obtained two types of whole fruit cranberry: fresh locally sourced cranberries (Fr) and commercially available frozen cranberries (Co). Both were stored in a conventional freezer (-20 °C) and thawed to room temperature before ingestion. Participants were randomized to Fr or Co, instructed to follow a washout diet, and urine was collected before ingestion (0-) and at 1-, 8-, and 24- hours after ingestion. This was repeated 3 times in the same subjects for 5, 10, and 20 berries (8, 16, 32 grams respectively). High-performance liquid chromatography with ultraviolet detection (HPLC-UV) was used for P3Ga quantification.

**Results:** 13 participants were enrolled, however 3 had incomplete collection due to NSAID use (1) and other berry ingestion (2). There was no difference between Fr or Co groups in age, history of UTI, postmenopausal status, and childbirth history. In both groups, peak P3Ga urine content occurred at 1-hours and P3Ga content nearly returned to baseline by 24-hours (Table 1). Overall, P3Ga was higher in Fr compared to Co at 1-hour, with statistical significance detected for 10 berries (p=0.03). There was no difference between 10 and 20 berries at 1-hour (p=0.93) in the Fr Group.

**Conclusion:** This *in vivo* study detecting PAC metabolites after ingestion of whole fruit cranberry among healthy adult women demonstrated peak urinary levels at 1-hour. The Fr Group had similar P3Ga for 10 and 20 berries at 1-hour. Interestingly, and possibly due to commercial manufacturing, the Fr Group had overall higher P3Ga comparatively. Future studies are necessary to further explore the role of whole fruit cranberry in UTI prevention.
Poster #BS29
SURFACE MOTILITY IN NONPATHOGENIC ESHERICHIA COLI AND STRAINS ISOLATED FROM WOMEN WITH RECURRENT URINARY TRACT INFECTIONS
Sankalya Ambagaspithye, MS1, Parker McDill, MS1, Jacob Hogins1, Sushmita Sudarshan, MS1, Philippe Zimmern, MD2, Larry Reitzer, BS, PhD3
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Presented By: Sankalya Ambagaspithye, MS

Introduction: E. coli, the most common cause of urinary tract infections (UTIs), exhibits two forms of flagella-dependent motility: swimming in a liquid and swarming on a surface. Mouse models suggest that flagella is required for infection of the kidney, but not of the bladder. We examined the flagella requirement for surface motility of nonpathogenic E. coli, and also of uropathogenic E. coli from women with recurrent UTIs.

Methods: Surface motility was assessed on plates with glucose, tryptone, and 0.5% agar. In one nonpathogenic strain, W3110, we examined the surface motility in mutants lacking either the main flagella component (FliC), the major structural component of the mannose-binding pili (FimA), or both. The motility properties of W3110 were compared to those of 11 nonpathogenic E. coli strains and five uropathogenic E. coli (UPEC) strains.

Results: Strain W3110 exhibited oscillating motility that produced a pattern of concentric rings. Unexpectedly, loss of FimA in W3110 altered surface motility, but loss of FliC did not, which implies pili-dominant motility (Figure 1). Such motility in E. coli has not been characterized. A double mutant without FliC and FimA still moved, which suggests a previously undescribed form of surface motility. Variants of W3110 that moved more rapidly were easily isolated, and these variants had lost the oscillatory pattern. Motility of these variants was altered by loss of FliC, which indicates flagella-dominant motility. This pattern of motility was observed for 9 of the 11 nonpathogenic strains, and all five of the pathogenic strains.

Conclusion: E. coli has at least three forms of surface motility, and their relevance to UTIs needs to be evaluated. Flagella-dominant motility is often the result of a mutation that allows flagella expression in the presence of glucose. Our results suggest that flagella-dominant motility may be important for human UTIs. This result differs from results using mouse models, which showed that flagella were not required for infection of the urinary tract. These results incorporating human strains emphasize the need to confirm conclusions from mouse models in humans.
Poster #BS30
METABOLIC REQUIREMENTS FOR UROPATHOGENIC ESCHERICHIA COLI DURING URINARY TRACT INFECTIONS
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Presented By: Larry Reitzer, BS, PhD

\textbf{Introduction:} Two basic approaches have been used to determine the importance of particular metabolic genes and pathways for uropathogenic E. coli (UPEC) during urinary tract infections (UTIs). First, metabolic genes were identified that were expressed during growth in urine or during a UTI. Second, mutant strains lacking various metabolic genes are introduced in a mouse model for a competitive fitness assay. A comprehensive review of all relevant publications was undertaken to determine required metabolic genes and pathways during UTIs. Knowledge of required metabolic pathways may suggest ways to develop anti-metabolites that could impair bacterial function during UTIs.

\textbf{Methods:} All articles were reviewed that analyzed (a) gene expression during growth in urine or from bacteria causing a UTI, and (b) competitive fitness of mutants in a mouse UTI model.

\textbf{Results:} During growth in urine or during a UTI, the following metabolic genes were up-regulated: genes for biosynthesis of 11 amino acids (alanine, arginine, aspartate, glutamine, glutamate, isoleucine, leucine, lysine, and methionine), purines, and pyrimidines; genes for transport of amino acids, nucleobases, and carbohydrates; and genes for catabolism of carbohydrates. However, highly expressed genes were not necessarily required for a UTI. Mutations in the following metabolic genes reduced competitive fitness in a mouse model system: peptide transport, carbohydrate transport and catabolism, the citric acid cycle, gluconeogenesis, the non-oxidative branch of the pentose cycle, and acetogenesis. In contrast, glycolysis, the Entner-Doudoroff pathway, and the oxidative branch of the pentose cycle were dispensible.

\textbf{Conclusion:} The pattern of required metabolic genes indicate that amino acids, not carbohydrates, are the energy sources for bacteria during UTIs. The diversity and flexibility of energy-generating pathways, a combination of the citric acid cycle for oxidative phosphorylation and acetogenesis for substrate-level phosphorylation, will allow rapid growth of UPEC strains, and the ability to handle diverse and changing environments. The relevance of these findings on UPEC strains from women with recurrent UTIs is under investigation.
THE PARADOX OF RAPID GROWTH AND INDUCTION OF STRESS RESPONSES OF UROPATHOGENIC ESCHERICHIA COLI: INDUCTION OF THE NITROGEN-REGULATED (NTR) RESPONSE

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Presented By: Karthik Urs, BS, MS

**Introduction:** Growth of uropathogenic *Escherichia coli* during a urinary tract infection induces at least two stress responses: the responses to nitrogen and iron limitation. The response to nitrogen limitation, called the nitrogen-regulated or Ntr response, induces glutamine synthetase (GlnA) and several amino acid and peptide transporters (Reitzer, 2003). Expression of Ntr genes is unexpected because urine contains abundant ammonia, which is *E. coli*’s preferred source of nitrogen, and ammonia assimilation into glutamine prevents expression of Ntr genes. We tested the hypothesis that a component of urine inhibits GlnA activity, even in the presence of plentiful ammonia, and thereby induces the Ntr response.

**Methods:** We grew *E. coli* strains, nonpathogenic W3110 and pathogenic CFT073, in a pH 6 medium that contained glucose, ammonia, and the following solutes: urea, NaCl, KCl, Na2HPO4, (NH4)2SO4, MgCl2, CaCl2, and FeSO4 at concentrations often found in urine (Table 1). To this basal medium, we added various components present in urine, and examined growth.

**Results:** The basal medium supported rapid growth. Addition of five of the six most abundant amino acids in urine (glycine, cysteine, histidine, serine, and alanine) at concentrations commonly found in urine prevented growth. The inhibition was overcome by addition of amino acid mixtures (casamino acids or tryptone), and certain groups of amino acids (Table 1). The responses of pathogenic and nonpathogenic strains were different.

**Conclusion:** The most abundant amino acids in urine are known to inhibit GlnA activity by binding to the glutamate substrate site. The observation that glutamate overcomes the inhibition implies that these amino acids inhibit GlnA activity. The inhibitory amino acids do not prevent a rapid growth rate, perhaps because of induction of amino acid and peptide transporters. Therefore, the Ntr response, which is normally associated with nitrogen limitation and slow growth, may be required for rapid growth of uropathogenic *E. coli*.

**Reference:**
Poster #BS32
THE ASYMPTOMATIC BLADDER: GROSS AND HISTOLOGICAL FINDINGS IN A SERIES OF PATIENTS
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Presented By: Mason Briggs, BS

Introduction: While a normal histology of the urinary bladder has been described in detail, there are insufficient descriptive data on the gross and histologic variations that exist in asymptomatic bladders across a wide age range. Hence, we sought to describe the gross appearance and histology of a series of patients without lower urinary tract symptoms in conjunction with their medical history and social habits. These data should support the establishment of ranges for the “normal” bladder.

Methods: IRB exemption and external approval from Donor Network West’s (federally designated organ procurement organization) Internal Research Council and Medical Advisory Board Research Subcommittee was obtained for collection of primary bladder tissue from five male and four female transplant donors. Bladders were procured by a board certified urologist immediately after removal of organs allocated for human transplant. Primary tissue was then processed into paraffin blocks, 5 um sections were made, and a hematoxylin and eosin stain was performed. Slides of both the dome and trigone were reviewed by a genitourinary pathologist.

Results: All bladders evaluated demonstrated benign histology, with three of nine bladders (two female and one male) exhibiting signs of chronic inflammation, non-keratinizing squamous metaplasia, and cystitis cystica, respectively. The three patients with bladder inflammation were all over 30 years old and had no bladder symptoms reported in their histories. While the two females were found to have inflammation in the dome and trigone, the male patient’s inflammation was confined to the trigone (Table 1). All three patients with inflammation had a history of recreational drug and cigarette use. A gross observation of a smooth, slightly distended urothelium, lacking defined rugae, coincides with histological evidence of inflammation; whereas a bladder of similar age without inflammation demonstrates a more rugated gross appearance (Figure 1).

Conclusion: The observations from this series of patients ranging from age 2-55 years of age suggest that chronic inflammation is a common finding in the asymptomatic bladder. Further studies are needed to investigate the longitudinal progression of these findings and whether there is a correlation with specific social habits.

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Table 1: Patient clinical and histological assessment of normal and symptomatic bladders

<table>
<thead>
<tr>
<th>Case</th>
<th>Gender</th>
<th>Age</th>
<th>Medical history</th>
<th>Social habits</th>
<th>Biopsy</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>F</td>
<td>31</td>
<td>history of bladder disease</td>
<td>smoking</td>
<td>normal</td>
</tr>
<tr>
<td>2</td>
<td>M</td>
<td>50</td>
<td>history of bladder disease</td>
<td>smoking</td>
<td>normal</td>
</tr>
<tr>
<td>3</td>
<td>F</td>
<td>22</td>
<td>history of bladder disease</td>
<td>smoking</td>
<td>normal</td>
</tr>
<tr>
<td>4</td>
<td>M</td>
<td>37</td>
<td>history of bladder disease</td>
<td>smoking</td>
<td>normal</td>
</tr>
<tr>
<td>5</td>
<td>F</td>
<td>42</td>
<td>history of bladder disease</td>
<td>smoking</td>
<td>normal</td>
</tr>
<tr>
<td>6</td>
<td>M</td>
<td>55</td>
<td>history of bladder disease</td>
<td>smoking</td>
<td>normal</td>
</tr>
<tr>
<td>7</td>
<td>F</td>
<td>30</td>
<td>history of bladder disease</td>
<td>smoking</td>
<td>normal</td>
</tr>
<tr>
<td>8</td>
<td>M</td>
<td>38</td>
<td>history of bladder disease</td>
<td>smoking</td>
<td>normal</td>
</tr>
<tr>
<td>9</td>
<td>F</td>
<td>45</td>
<td>history of bladder disease</td>
<td>smoking</td>
<td>normal</td>
</tr>
</tbody>
</table>

Figure 1: Gross and histological comparison of 70 y/o patient's bladder (left) and 75 y/o normal bladder (right)
VOIDING BEHAVIOR CHANGES IN A MURINE MODEL OF CHRONIC UTI IS CORRELATED TO URINARY BACTERIAL LOAD AND INFLAMMATORY CYTOKINES/CHEMOKINES

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Presented By: Toby C. Chai, MD

Introduction: Chronic urinary tract infections (UTIs) is defined by persistent lower urinary tract symptoms (LUTS). We studied bacteriologic load and immune mechanisms that correlated with altered voiding behavior in a chronic UTI animal model.

Methods: We created a chronic UTI murine model by inoculating C57BL/6 female mouse, aged 10 weeks old, with uropathogenic E. coli (UPEC, 10^8 CFU/50 μl) two times, 24 hours apart. Chronicity of UTI was defined by urine CFU ≥10^4 CFU at 28 days post infection (dpi). 14 mice were used in this study. At 28 dpi, UPEC loads in urine, bladder and kidney specimens were measured by culture CFUs. Cytokines/chemokines levels in urine, bladder and kidney specimens were measured with 32-plex ELISA. Linear regression correlations between 4- hour voiding spot assay (VSA) parameters with #1. UPEC loads (in urines, bladders, kidneys) and #2. cytokines/chemokines levels (in urines, bladders, kidneys) were performed. Significance was defined by R≥0.5 and p<0.05.

Results: Increasing urine CFU was significantly correlated with increasing total spot volume (R=0.747, p=0.002), total spot volume outside (R=0.756, p=0.002), total volume/total spot (R=0.545, p=0.044), and number of primary void spots (R=0.95, p=0.001). Increasing bladder CFU was significantly correlated with increasing total spot volume (R=0.709, p=0.005), total spot volume outside (R=0.725, p=0.003), total volume/total spot (R=0.639, p=0.014), and number of primary void spots (PVS) (R=0.766, p=0.001). Increasing kidney CFU was significantly correlated with total number of spots outside (0.669, p=0.009), and number of primary void spots (R=0.630, p=0.016). RANTES, MIP-Ib, IL-17, IP-10, KC, MCP-1, MIP-2, M-CSF in different specimens were significantly correlated with voiding behavior changes. Select significant correlations of urinary UPEC load (CFU) and urinary IP-10 with various VSA parameters are shown in the Figure.

Conclusion: Increasing bacterial load and inflammatory cytokines (RANTES, MIP-Ib, IL-17, IP-10, KC, MCP-1, MIP-2, M-CSF) in urine, bladder and kidney are significantly correlated with bladder voiding behavior changes (towards overactive voiding behavior) in a murine chronic UTI model. These data help us understand how objective parameters (bacterial load and cytokine/chemokines) correlate with overactive voiding behavior in chronic UTIs. Treatment of LUTS in chronic UTI status could target changes in these cytokines/chemokines.
NEURAL PLASTICITY AND BLADDER OUTLET OBSTRUCTION IN MICE
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Presented By: Anne M.J. Verstegen, PhD

Introduction: A significant component of Lower urinary tract symptoms (LUTS) is due to failure of neural control of bladder function. Pontine micturition center (PMC) neurons directly control voiding by innervating sacral spinal cord nuclei that control bladder contraction and sphincter relaxation, and the PMC neurons are active during these processes. Here we use a model of benign prostatic hyperplasia (BPH) to examine the impact of bladder outlet obstruction (BOO) on timing of PMC neuron population activation.

Methods: Testosterone (25mg) and 17b-Estradiol (2.5mg) (T+E2) pellets were implanted subcutaneously in male mice. We micro-injected adeno-associated virus expressing a Cre-dependent calcium reporter for neural activity (AAV-GCaMP6s), into anatomically defined regions of the brain enabling highly selective expression of proteins in a target neuron population and an optical fiber was implanted to record the total fluorescence. A novel non-invasive void spot assay, micturition video thermography (MVT), was used to track voiding behavior in awake-behaving mice. MVT was combined with cystometry and recordings of neural activity, to detect the timing of activation of neuron populations during awake micturition behaviors in mice with BOO and in control pellet implanted mice. Finally, bladder contractility, bladder and prostate gland weights were measured.

Results: In mice with BOO, bladders were severely hypertrophied and increased 400% in weight. The muscle could generate less contraction force in response to field stimulation and KCl. During early stages of outlet being obstructed, bladder hyperactivity was detected with frequent voiding on the void spot assay. In later stages, bladder overfilling was identified as leaking during MVT and conscious cystometrogram (CMG). Corresponding to a hyperactive bladder, Crh-expressing neurons of the pontine micturition center were hyperactive.

Conclusion: Our mouse model of BOO demonstrates severely altered voiding behavior, increased bladder and prostate gland mass, decreased contraction force generated in response to stimulation in the in vitro whole bladder model, and in accordance with this, CMG traces showed dramatically increased frequency of bladder contractions. PMC neurons are also hyperactive, suggesting that detrusor contractions are not spontaneous and the result of only bladder and prostate hypertrophy, but rather of increased firing of PMC neurons. We plan to study the timing of activation of neurons in this circuit and afferent neurons connecting to them.
Poster #BS35
STRESS-INDUCED REEMERGENCE OF EXTINGUISHED BLADDER PAIN
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Presented By: Vijay K. Samineni, PhD

Introduction: Interstitial cystitis and bladder pain (IC/BPS) are chronic conditions that affect 8 million women in the United States. IC/BPS is often co-morbid with depression and anxiety. Majority of the patients report that the stress exacerbates bladder pain and elevated levels of IC symptoms, suggesting interaction between stress and IC.

Methods: To better understand the interaction between the cystitis induced bladder pain and affective state and stress, we used a mouse model of bladder pain and performed longitudinal studies to characterize the timeline of pain sensitization and negative affective behaviors after induction of the bladder pain and the relationship between stress and bladder pain.

Results: We used chemotherapeutic drug cyclophosphamide (CYP) to induce intense bladder inflammation. We observed CYP induced bladder pain in a dose dependent manner. Mice with a dose of 100mg/kg CYP, exhibited significant referred pain sensitization for 1 week and significant anxiety, depressive and anhedonia behavior for 10 days post. Whereas for a dose of 200mg/kg CYP, significant referred pain sensitization was observed for 6 weeks and significant anxiety, depressive and anhedonia behavior for 2 weeks. CYP induced referred pain sensitization dissipated completely 12 weeks post administration. To determine if stress exposure can reinstate the dissipated bladder pain symptoms in previously CYP treated mice, we exposed these mice to acute stress and tested for referred pain sensitization. Acute stress exposure reinstated referred pain sensitivity in the only in CYP treated mice post extinction of pain.

Conclusion: Our data suggests acute stress is a potent inducer for emergence of IC/BPS symptoms.
Poster #BS36
QUANTITATIVE ELECTROENCEPHALOGRAPHY AS A MEANS OF CHARACTERIZING BRAIN ACTIVITY DURING THE MICTURITION CYCLE
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Presented By: Evgeniy I. Kreydin, MD

Introduction: Our understanding of how the brain controls the lower urinary tract relies almost exclusively on magnetic resonance imaging (MRI). While MRI provides unparalleled spatial resolution, it suffers from poor temporal resolution and its correlation with neurophysiological events is uncertain. In this study, we assess quantitative electroencephalography (qEEG), which offers excellent temporal resolution and direct recording of electrophysiological signals, as a means to monitor brain activity during urine storage and voiding.

Methods: Two healthy male subjects underwent 64-channel qEEG while urodynamics were performed. Ten cycles of bladder filling and emptying were undertaken. The micturition cycle was divided into four epochs: bladder empty, bladder full, bladder voiding, and bladder empty (post-void). After band-pass filtering, qEEG signal was broken up into 5-second intervals, and power spectrum density analysis was applied to each interval. Power differences in each of the major brain oscillatory frequencies (α, β, γ and δ), were calculated between “bladder full” and “bladder empty” states.

Results: Both subjects exhibited increased power during “bladder full” vs. “bladder empty” states in the δ band (0-2Hz) over the medial posterior frontal (peri-sylvian) area. Both subjects also exhibited differences in the δ-band over the motor-sensory cortex. However, subject 1 exhibited decreased δ-band activity, while subject 2 exhibited increased δ-band activity in this region.

Conclusion: qEEG was able to detect changes in brain activity between different bladder states. The specific activity pattern is similar to that detected during invasive electrophysiological (electrocorticography) recording; with elevated δ-band activity in the peri-sylvian area likely representing bladder fullness interoception within the insular cortex [1]. Differences in δ-band activity between the two subjects underscore the intrinsic spatial uncertainty of EEG. Future studies will focus on combining the temporal resolution of qEEG and the spatial resolution of MRI to obtain a more complete understanding of brain activity during urine storage and voiding.

Introduction: Despite advances in the clinical management of many urological conditions, millions of Americans remain afflicted with benign conditions of the bladder and urogenital system, including urinary tract infections, urolithiasis, conditions associated with lower urinary tract symptoms such as urinary incontinence, over- and underactive bladder and bladder outlet obstruction, urologic chronic pelvic pain syndrome, and erectile dysfunction. The annual treatment cost of these illnesses is ≥$11.5 billion per year. Contributing to the inability to adequately treat patients are gaps in knowledge of the basic physiology, cell biology, and genetics of normal and abnormal urologic function; a lack of objective diagnostic criteria and tests for many benign genitourinary symptoms and conditions; inadequate characterization (phenotyping) of patients; and a paucity of epidemiological insights. This absence of a basic understanding of the mechanistic changes of the urogenital tract in disease also makes it difficult to establish clinically-relevant models of urologic conditions.

Methods: The O’Brien Urology Research Centers Program was established by the NIDDK in 1987 to support stand-alone research centers to address the many gaps in our understanding of urologic dysfunction. In 2012, the program was transitioned to a Cooperative Research Centers Program (U54). This transition was prompted by the need for more highly-interdisciplinary, integrated research and for the development of new resources for the wider benign genitourinary research community.

Results: The O’Brien Urology Cooperative Research Centers Program fosters broad basic, translational, and clinical research on questions of critical importance; develops research resources to support the larger urology research community; engages new and established investigators from urology and other clinical and research disciplines; and promotes the training of junior scientists. The O’Brien Centers Program works cooperatively with the NIDDK Developmental Centers for Interdisciplinary Research in Benign Urology (P20), the NIDDK Urologic Research (KURe) Career Development Program (K12), and the Urological Epidemiology (UroEpi) Institutional Research Career Development Program.

Conclusion: The long-term strategy for the O’Brien Urology Cooperative Research Centers Program is expected to continue to evolve in future years in an effort to optimize support of the urologic community and to foster development of high-quality, successful investigator-initiated research studies and applications (e.g., R01s).
Poster #BS38
TRANSCRIPTOMIC ANALYSIS OF BLADDER PDGFRα+ CELLS IN EARLY DIABETIC BLADDER
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University of Nevada Reno, Department of Physiology and Cell Biology
Presented By: Tong Zhou, PhD

Introduction: Early DBD is associated with an increase in NVCs and a decrease in compliance. We have reported that PDGFRα+ cells contribute to the stabilization of membrane excitability during filling. When excitability-related transcripts are suppressed in PDGFRα+ cells, detrusor muscles display increased NVCs and TCs, and submucosal fibrosis decreases the compliance in the early stages of DM. Thus, changes in transcriptomic profile of PDGFRα+ cells could result in symptoms of detrusor overactivity (DO) in early DM.

Methods: Akita mice (8wks and 16 wks old) were used for RNAseq analysis in submucosa and detrusor layers. The submucosal layer was dissected free of detrusor. RNA quality was verified in the Nevada Genomics Center and mRNA was collected and analyzed by RNA-seq. Using RNA-seq, we profiled the transcriptomes of detrusor and submucosa from control and Akita mice. We also used freshly dispersed PDGFRα+ cells from PDGFRα/eGFP mice. These cells were sorted for RNA-seq.

Results: Gene expression fold change was computed for each gene between control and Akita mice. We observed a significant negative correlation in fold change between detrusor and submucosa cells. In comparison of Pdgfra expression in detrusor and submucosa of control and Akita mice, Pdgfra was significantly upregulated in Akita submucosa. ECM-receptor interaction is one of the key pathways associated with fibrotic processes. ECM-receptor interaction pathway score was significantly higher in Akita submucosa than in controls (FDR).

Conclusion: These data suggest that transcriptomic deregulation in whole tissues in DM is causatively associated with phenotypic changes in specific cell populations, which might play a role for diabetic bladder dysfunction.
**Poster #BS39**  
**EFFECT OF KG7656 LIQUID FORMULATION ("VESIX") ON HUMAN UROPATHOGENIC ESCHERICHIA COLI STRAINS**  
Valerie J. Price, MD¹, Kelli L. Palmer, PhD¹, Nicole J. DeNisco, BS, PhD²,³, William Randolph Warner, Principal Managing Member⁴, Philippe Zimmern, MD⁵  
¹Department of Biological Sciences, University of Texas at Dallas, ²Department of Molecular Biology, UT Southwestern Medical Center, ³Howard Hughes Medical Institute, ⁴US-BioPharma, ⁵Department of Urology, UT Southwestern Medical Center  
Presented By: Valerie J. Price, MD  

**Introduction:** Few options are available for intravesical treatment of recurrent urinary tract infections (RUTI). A known compound, cetylpyridinium chloride, first commercialized in 1942 and the active ingredient of agents currently sold over the counter including lozenges, nasal sprays, and topical creams, was modified with hypertonic saline as a new excipient, KG 7656 (patent pending). The efficacy of KG 7656 ("Vesix") was studied in vitro against *Escherichia coli* strains recovered from urine of post-menopausal women with documented RUTIs.  

**Methods:** The efficacy of KG 7656 against uropathogenic *E. coli* was assessed using minimum inhibitory concentration (MIC) determination assays and time-kill assays in standard laboratory medium (Luria-Bertani medium) and media with a range of different pH representative of urine pH variability (pH 5.5, 6.5, 7.5 and 8.5). For time-kill assays, three different concentrations (10%, 15%, and 20%) of KG 7656 solutions were used. Colony forming units (CFU)/mL and optical density (turbidity) were used to quantify bacterial growth in the different assays. Five different uropathogenic *E. coli* strains obtained from RUTI patients, referred to as RUTI-12, PNK 16, PNK 29, PNK 30, PNK 45, were assessed. Experiments were performed independently at least three times.  

**Results:** A similar effectiveness of KG 7656 on five *E. coli* RUTI isolates was observed. Specifically, complete killing of these bacterial isolates with 20% KG 7656 solution within 15 minutes of exposure, regardless of the pH (5.5 to 8.5), was observed.  

**Conclusion:** When assessed for MIC and time-kill rate, KG 7656 exhibited a potent effect on human uropathogenic *E. coli* strains, justifying consideration of its selective testing in vivo.
ANTAGONISM OF CORTICOTROPIN-RELEASING FACTOR RECEPTOR 1 PREVENTS WATER AVOIDANCE STRESS-INDUCED BLADDER HYPERSENSITIVITY IN FEMALE MICE THAT UNDERWENT NEONATAL MATERNAL SEPARATION

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Presented By: Julie Christianson, PhD

Introduction: Patients with urologic chronic pelvic pain (UCPP) often report that their symptoms worsen during periods of heightened stress. Likewise, a history of early life stress increases the likelihood of developing UCPP later in life. We have developed a mouse model of neonatal maternal separation (NMS) that conveys UCPP-like hypersensitivity, increased micturition, and evidence of altered limbic regulation of the hypothalamic-pituitary-adrenal (HPA) axis and downstream neurogenic inflammation, which are exaggerated following exposure to water avoidance stress (WAS). Here, we are testing the hypothesis that antagonizing the corticotropin-releasing factor receptor 1 (CRF1) prior to WAS can prevent bladder hypersensitivity in female NMS mice.

Methods: Mouse pups underwent NMS for 3 hours per day from postnatal day (P) 1 to 21 and were weaned on P22. Baseline visceromotor response (VMR) to urinary bladder distension (UBD) was measured on adult female naïve and NMS mice and, one week later, mice were treated with saline or a CRF1 antagonist (NBI35965, 20mg/kg, intraperitoneal) 20 minutes prior to a 1h-long exposure to WAS. Mice were retested for VMR during UBD at 24h and 7d post-WAS. A separate group of mice was analyzed for micturition patterning at 24h post-WAS. Bladders and brains were removed and processed for mRNA extraction and RT-PCR was performed.

Results: A significant increase in VMR during UBD was observed in saline-treated NMS mice only at 24h post-WAS, which was prevented in NMS mice treated with NBI35965. Neither NMS nor NBI35965 had a significant impact on micturition. In the bladder, NMS and NBI35965 had a significant interaction effect on interleukin (IL)-10 mRNA levels and IL-6 mRNA levels were significantly higher in naïve mice than NMS, following NBI35965 treatment. Both the hypothalamus and right amygdala in NBI35965-treated naïve mice had significantly increased CRF and CRF receptor 2 (CRF2) mRNA levels, compared to saline-treated naïve or NMS mice.

Conclusion: Treatment with CRF1 antagonist prevented WAS-induced bladder hypersensitivity in female NMS mice. Naïve mice exhibited compensatory changes in limbic gene expression following CRF1 antagonism, which were not observed in NMS mice. Together, these data support our previous studies showing that CRF signaling processes are altered due to NMS in female mice.
**Poster #BS41**

**ROLE OF INSULIN RECEPTOR-MEDIATED SIGNALING IN DIABETIC BLADDER DYSFUNCTION**

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Presented By: Huan Chen

**Introduction:** Diabetes mellitus (DM) afflicts 9.4% of US population, and diabetic bladder dysfunction (DBD) is a major complication. DBD manifests with debilitating symptoms like incontinence, overactivity, and eventually underactivity. However, the molecular mechanism underlying DBD remains unclear. Recent studies have indicated that insulin receptor (IR) mediated signaling plays crucial roles not only in metabolism, but also in many cellular functions including proliferation, differentiation, and cell survival. We hypothesize that IR mediated signaling in bladder smooth muscle (BSM) plays a key role in the pathogenesis of DBD.

**Methods:** Insulin resistance in different cells/tissues contributes significantly to the pathogenesis of DM. However, the role of IR signaling in bladder smooth muscle (BSM) function is not well studied, and the role of BSM insulin resistance in the pathogenesis of DBD is unknown. To mimic the insulin resistance in BSM, we have generated a smooth muscle specific IR knockout (SMIRKO) mouse model by mating INSRf/f mice with Sm22a-cre mice (B6.Cg-Tg(Tagln-cre)1Her/J), and the bladder function of this mouse model was phenotyped by the combination of void spot assay (VSA), cystometry (CMG), myography, and morphological approaches.

**Results:** SMIRKO mice (12-16 week old) showed normal plasma glucose levels (wt: 160.4±17.8 mg/dL; SMIRKO: 153.4±1.2 mg/dL) and normal insulin tolerance. However, they had elevated glucose tolerance response and glucosuria (wt: 112.2±38.8 mg/dL; SMIRKO: 170.4±55.2 mg/dL). Interestingly, bladders of SMIRKO mice exhibited typical DBD phenotype. These bladders were flaccid with a thinner BSM wall. Extensive fibrosis in lamina propria and among muscle bundles was obvious. Significant dilation of vasculature in the bladder wall was noted. BSM bundles were abnormal and disorganized with significantly smaller size of BSM cells. Functional evaluation by VSA indicated polyuria and voiding frequency, and CMG study indicated increased voiding cycles, reduced contraction pressure and bladder compliance. Further myographic study indicated that BSM strips from these mice have significantly diminished contraction force in response to electrical field stimulation, carbachol, and KCl depolarization.

**Conclusion:** These data show that SMIRKO mice mimic human DBD and suggest an important role for insulin signaling in the pathogenesis of this condition. Further studies in this model will permit understanding of the mechanisms by which defects in insulin signaling might cause DBD.
Poster #BS42
HUMAN MESENCHYMAL STEM CELLS SECRETOME IS POTENTIALLY SAFE FOR POSTPROSTATECTOMY INCONTINENCE WITH A RESIDUAL TUMOUR (INVITRO MODEL)
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Presented By: Ahmad O. Khalifa, MD, PhD

Introduction: Injection of stem cells has been reported as a treatment modality for incontinence in animal models and human clinical trials. Safety with recurrent/residual tumour remains unclear. We aimed to understand the cytokines profiling of human mesenchymal stem cells (hMSCs), prostate cancer cell lines, LNCaP (androgen responsive) and PC-3 (androgen resistant) to study the safety of hMSCs and their secretome in prostate cancer survival in-vitro.

Methods: We cultured hMSCs, LNCaP and PC-3 cell lines individually. After third passage at 75-85% confluency, we collected the conditioned medium (secretome) of various cell lines after 72 hours. We evaluated the cytokine profiling using membrane microarray (RayBio-Human Cytokine-Antibody-Array AAH-CYT-1000-8).

We used 6-well trans-well plates to co-culture 1X10^6 of LNCaP cells/well with hMSCs in different concentrations (0.5:1, 1:1 and 1.5:1). One well was left as a negative control and one well was treated with hMSCs-secretome without cells. After 48 hours, we checked the count and morphology of LNCaP cells using Countess II. Prostate cancer cell lines were cultured in 96-well plates. Cells were treated with hMSCs-secretome in dose-variable fashion (0%, 50%, 75% and 100%) for 24 hours. Cells viability were evaluated using MTT proliferation assay. Optical densities were measured by using spectrophotometer at wavelengths 590nm/630nm.

Results: Twenty-one cytokines were highly expressed in hMSCs more than 10 times their expression in LNCaP including; IL1 alpha, IL-2, IL-4, IL-6, IL-7, IL-13, IL-16, LIGHT, SDF-1, BDNF, TNF-B, HGF, bFGF, FGF-7, IGFBP-4, GDNF, TGF-B1, MCP-1, MIG, Flt-3 lig. Co-culturing of hMSCs and LNCaP cells revealed regression of cancer cell count when co-cultured with equivalent (1:1) or more amount of hMSCs (2XhMSCs: 1XLNCaP). Treating cancer cells with the secretome revealed marked regression (figure A). After 24 hours of treatment of prostate cancer cells with hMSCs secretome without cells, MTT viability assay presented that LNCaP viability was significantly declined. (Figure B).

Conclusion: Our in-vitro cell culture results revealed that hMSCs secretome (not the cells) resulted in significant suppression of the growth of LNCaP cells. This might support its safety and provide an additional advantage for hMSCs secretome over the hMSCs cells in future regenerative applications. Understanding the involved signalling cascade between hMSCs and cancer cells may help patients with risk of cancer progression.
PRIMARY CULTURE OPTIMIZATION AND IN-VITRO CHARACTERIZATION OF UROTHELIAL CELLS

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Presented By: Mason Briggs, BS

Introduction: Urothelial cells (UCs) have proven to be a challenge to culture in-vitro, given their tightly bound in-situ structure, multiple morphological phenotypes, and often quiescent nature. We sought to optimize in-vitro culturing technique to enhance cell adhesion and proliferation.

Methods: IRB exemption and external approval from Donor Network West’s Internal Research Council and Medical Advisory Board Research Subcommittee was obtained for collection of benign (non-cancerous) primary bladder tissue from five male and four female transplant donors. Bladders were procured by a board certified urologist immediately after removal of organs allocated for human transplant. The urothelium was detached, scraped, and the cells isolated using a gradient medium. To optimize adhesion, cells were seeded at a density of 5.0 x 10⁴ cells/cm² on four different surfaces: a hydrophilic coating (Nuncol Delta), a modified polystyrene (Primaria), gelatin, and matrigel (gelatinous protein mixture) then cultured in duplicate at 37°C and 5% CO₂. To optimize proliferation, four different media were tested: keratinocyte serum free medium (KSFM), mTeSR, a 50/50 mixture of KSFM and embryonic fibroblast medium (EFM – 10% FBS/DMEM + 1% NEAA), and a 50/50 mixture of mTeSR and EFM. Cell attachment, proliferation, and cell count between passages were recorded. To ensure purity of the isolated cell population, immunofluorescence staining was performed using the following markers: AE1/AE3 (cytokeratin), desmin, αSMA, smoothelin, and Ki67.

Results: All duplicate cultures exhibited the same patterns of attachment and proliferation. More cells were observed to attach in matrigel than the other three surface coatings (Figure 1). Of the four media tested, only the 50/50 mixture of KSFM/EFM induced growth to confluence by day 6 (Figure 2). Cells did not reach confluence with the remaining three media. Immunofluorescence staining resulted in positive expression for all five markers tested.

Conclusion: Positive expression for the five immunofluorescence markers signified a pure UC population with potential to proliferate. Cell attachment and proliferation were enhanced with matrigel and the KSFM/EFM medium. Cells cultured in these conditions were observed to remain proliferative until at least passage 3. Additional studies are required to evaluate cell senescence.
2019 Clinical Science Prize Essay Award Recipient

TO STAGE OR NOT TO STAGE? - A COST MINIMIZATION ANALYSIS OF SACRAL NEUROMODULATION PLACEMENT STRATEGIES
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Presented By: Christopher S. Elliott, MD, PhD

Introduction: Sacral neuromodulation (SNM) is a standard therapy for refractory overactive bladder (OAB). Traditionally, SNM placement involves placement of an S3 lead with 1-3 weeks of testing before considering a permanent implant. Given the potential risk of bacterial contamination during testing and high success rates published by some experts, we compared the costs of traditional 2-stage against single-stage SNM placement for OAB.

Methods: We performed a cost minimization analysis using published data on 2-stage SNM success rates, SNM infection rates, and direct reimbursements from Medicare for 2017 (Figure 1). We compared the costs associated with a 2-stage versus single-stage approach. We performed sensitivity analyses of the primary variables to assess where threshold values occurred and used separate models for freestanding ambulatory surgery centers (ASC) and outpatient hospital departments (OHD).

Results: Based on published literature, our base case assumed a 69% SNM success rate, a 5% 2-stage approach infection rate, a 1.7% single-stage approach infection rate, and removal of 50% of non-working single-stage SNMs. In both ASC ($17,613 vs $18,194) and OHD ($19,832 vs $21,181) settings, single-stage SNM placement was less costly than 2-stage placement. The minimum SNM success rates to achieve savings with a single-stage approach occur at 65.4% and 61.3% for ASC and OHD, respectively.

Conclusion: Using Medicare reimbursement, single-stage SNM placement is likely to be less costly than 2-stage placement for most practitioners. The savings are tied to SNM success rates and reimbursement rates, with the success in centers of excellence (~90%) saving up to $5014 per case.
Podium #1
THE UTILIZATION OF PROSTATIC AND BLADDER MEDICATIONS AFTER TRANSURETHRAL PROSTATE SURGERY
Blayne Welk1, Jeffrey Campbell1, Jennifer Reid2, Michael Ordon3
1Western University, 2ICES Western, 3University of Toronto
Presented By: Blayne Welk, MD, MSc

Introduction: There is strong evidence supporting medical management of men with lower urinary tract symptoms due to benign prostatic hyperplasia (BPH). However, there is very little evidence supporting the efficacy of some of these medications after transurethral prostate surgery (TPS). Our objective was to determine the frequency of prostate- or bladder-specific medication utilization in men after TPS.

Methods: We used several linked, administrative healthcare databases from the province of Ontario Canada. We identified all men older than 66 years of age who underwent their first TPS between April 2003 and March 2016 (relevant medications are funded through a universal drug program in this age group). We excluded men with a prior diagnosis of prostate cancer, and those who underwent a simultaneous bladder tumor resection. Our outcome of interest was the proportion of men using at least 30 days of either prostate-specific alpha blockers (AB), 5-alpha reductase inhibitors (5ARI), or anticholinergics/beta-3 agonists (AC/B3). We determined the occurrence of filled prescriptions between 90 days after their TPS (to allow for the discontinuation of preoperative medications) until censoring or March 2017.

Results: We identified 58,038 men with a median age of 75 (interquartile range 71-81) and a median followup of 4.9 years post-TPS. In the 6 months prior to their TPS, AB, 5ARIs or AC/B3 were used by 62%, 32%, and 6% of men respectively. Following a 90 day post-TPS washout period, these medications were used by 27%, 20%, and 15% of men respectively. The cumulative probability of using these medications within the first 10 years after TPS was 0.38, 0.28, and 0.20 respectively. The median time to first use of these medications was approximately 1 year, and the median duration of use was ≥1 year for AB and 5ARIs. Of the men on AC/B3 prior to TPS, 46% also used this group of medications post TPS.

Conclusion: There is considerable use of AB and 5ARIs after TPS despite minimal physiological basis for using these medications in this setting. Given the lack of clinical evidence, and the well-characterized placebo response in BPH patients, this practice should be properly evaluated for clinical efficacy.
Podium #2
THE LEARNING CURVE FOR GREEN LASER ENUCLEATION OF THE PROSTATE (GreenLEP): A MULTI-INSTITUTIONAL STUDY OF 584 CASES

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Presented By: Benoit Peyronnet, MD

Introduction: All endoscopic enucleation of the prostate (EEP) requires a steep learning curve with a wide variability reported in the literature. The aim of this study was to report our analysis and assessment of the functional outcomes in the GreenLEP LC with a multi-institutional series.

Methods: All patients who underwent GreenLEP between July 2011 and March 2016 for the treatment of benign prostatic obstruction (BPO) by five different surgeons from five institutions were included in a retrospective study. We analyzed each surgeon’s individual LC and then carried out a comparison of all the series of 15 consecutive cases. To evaluate the LC multiple parameters were used: operative time, enucleation efficiency, morcellation efficiency, trifecta (defined as a combination of complete enucleation and morcellation within

Results: 584 patients were included. Surgeons 1, 3, 4 and 5 achieved the Trifecta/Pentafecta criteria in the 14th/18th, 10th/18th, 12th/36th and 21st/30th cases respectively. Surgeon 2, due to the long operative time, did not meet the Trifecta/Pentafecta criteria, although this surgeon did overcome the LC measured according to other criteria. Figure 1 shows the operative time evolution over consecutive cases. Overall, operative time significantly decreased after the first 30 cases (p<0.0001) to then reach a plateau, as did the morcelling time (p<0.0001) and the major complications rate (p=0.08) while the functional outcomes remained stable throughout the surgeons’ experience.

Conclusion: Our study is the first to analyze the GreenLEP LC in a large multi-institutional series. The number of cases needed to overcome the learning curve appeared to range from 10 to 40 cases depending on the outcome measurements used. These results are similar to those found in the literature for other laser EEP techniques. This supports the assumption that GreenLEP could be safe alternative EEP technique for the treatment of BPO.
WHAT DO POSTMENOPAUSAL WOMEN WITH RECURRENT URINARY TRACT INFECTIONS EXPERIENCE?
INSIGHTS FROM PATIENT FOCUS GROUPS
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Presented By: Taylor Sadun, MD

Introduction: Recurrent urinary tract infections (rUTIs) remain a significant burden for women of all ages. While there are well-established differences in the risk factors for development of UTIs amongst pre- and postmenopausal women, little is known about how perceptions of older women with rUTIs may differ from those of younger women. The aim of this study was to investigate the perspectives of postmenopausal women suffering from rUTIs using patient focus groups.

Methods: A total of 29 women were recruited from a tertiary urology practice. Three focus groups with 14 postmenopausal women (aged 52 to 81 years old) and three focus groups with 15 premenopausal women (aged 20 to 46 years old) were conducted by a clinician moderator. Participants were asked questions related to UTI knowledge, prevention strategies, the role of antibiotics in treatment, treatment alternatives, and impact on quality of life. Grounded theory methods were used to analyze focus group transcripts. Themes identified in the postmenopausal groups were then compared and contrasted to those reported amongst premenopausal women.

Results: Pre- and postmenopausal women sought information from different sources, which impacted the extent of their knowledge about rUTI pathophysiology and treatment. They expressed differences in rUTI treatment and prevention preferences, including variability in desire for shared decision making and perception of the role of self versus physician in this process. The two groups also displayed dissimilarity in managing the uncertainty experienced with rUTIs and in the mechanisms employed for coping with the condition. Participants from both groups displayed similarities in the triggers identified for UTIs, the distressing impact the condition has on quality of life, concern for the financial burden of rUTIs and frustration with the medical community's current management of their condition.

Conclusion: While rUTIs appear to have similarly adverse effects on the lives of pre- and postmenopausal women, postmenopausal women exhibit inferior knowledge about UTI pathophysiology and anatomy and display unique knowledge acquisition sources, treatment preferences, and expectations of medical providers. Physicians need to address the frustration with the current management of rUTIs experienced by women of all ages and employ different strategies in for managing pre- and postmenopausal women.
Podium #4
THE IMPACT OF FRAILTY ON THE TREATMENT OF OVERACTIVE BLADDER IN OLDER ADULTS*
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Presented By: Anne M. Suskind, MD, MS, FACS
*2015 OAB Grant Recipient

Introduction: Frailty is an important predictor of poor medical and surgical outcomes among older individuals, however, the impact of frailty on second- and third-line treatments for overactive bladder (OAB) in frail older adults remains unknown. The purpose of this study is to examine the effect of frailty on treatment outcomes in older adults starting pharmacotherapy, onabotulinumtoxinA and sacral neuromodulation.

Methods: This is a prospective study of men and women ages ≥60 years starting pharmacotherapy, onabotulinumtoxinA or sacral neuromodulation for OAB. Subjects were administered a questionnaire at baseline and again at 1- and 3-months. Frailty was assessed at baseline using the timed up and go (TUG) test (whereby a TUG time of ≥12 seconds was considered to be slow, or frail). Response to treatment was assessed using the overactive bladder symptom score (OABSS) and the OAB-q SF (both bother and HRQOL subscales). Information on side effects/adverse events was also collected. Mixed effects linear modeling was used to model changes in outcomes over time both within and between groups.

Results: A total of 45 subjects (22 pharmacotherapy; 12 onabotulinumtoxinA; 11 sacral neuromodulation) enrolled in the study, 40% (N=18) of whom had a TUG ≥12 seconds. There were no differences in responses to baseline OAB questionnaires between TUG groups (all p-values >0.05). Both TUG groups demonstrated improvement in OAB symptoms over time and there were no statistically significant differences in these responses per group (all p-values >0.05) (Figure). Similar trends were found for both OAB-q bother and OAB-q HRQOL questionnaire responses. Side effects and adverse events were comparable between groups (p’s>0.05).

Conclusion: Adults ≥60 years of age starting second- and third-line treatments for OAB, regardless of TUG time, demonstrated improvement in OAB symptoms at 3 months. These findings suggest that frail older adults receive comparable benefit and similar rates of side effects compared to less frail individuals, supporting the use of second- and third-line OAB treatments in properly selected older adults.
Podium #5
CHRONIC EXPOSURE TO PENTOSAN POLYSULFATE SODIUM ASSOCIATED WITH PIGMENTARY RETINAL TOXICITY
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Presented By: Jenelle E. Foote, MD

Introduction: Interstitial cystitis (IC) is a chronic regional pain syndrome manifesting as bladder or pelvic pain, urinary urgency, nocturia and dyspareunia. Currently, only two FDA-approved therapies for IC exist: oral pentosan polysulfate sodium (PPS) and intravesical dimethyl sulfoxide. We have recently observed vision-threatening retinal changes in patients undergoing chronic therapy for IC with PPS. In this study, we sought to characterize this newly described retinal condition, and explore the association between this medication and retinal degeneration.

Methods: Subjects were identified by query of a local electronic medical record system for patients seen at the Emory Eye Center with self-reported current or previous use of PPS and retinal degeneration. Medical records were reviewed for patient demographics, medication history, history of visual symptoms, clinical examination results, and retinal imaging from modalities including wide-field fundus photography, fundus autofluorescence imaging (FAF), and optical coherence tomography (OCT).

Results: A total of 10 patients were identified, with a median age of 59 years (range 38-68 years), and median time since IC diagnosis of 19 years (range 4-40 years). The most commonly reported visual symptoms described were difficulty reading (7 of 10 patients) and difficulty adapting to dim lighting (7 of 10 patients). All individuals reported use of PPS for treatment of symptoms related to IC, with a median cumulative exposure of 2062 grams (range 384-2883.5 g), over a median duration of 186 months (range 33-240 months). Mean logMAR best corrected visual acuity in all eyes measured was 0.13 (Snellen equivalent 20/27). Dilated fundus examination revealed symmetric fairly pigmentary changes in the retina. Retinal imaging with FAF and OCT technologies further characterized these pigmentary lesions, demonstrating abnormalities primarily in the retinal pigment epithelium, the cellular layer underlying the retina.

Conclusion: Here we describe a potentially avoidable retinal degeneration associated with chronic PPS exposure. Structural changes occur at the level of the retinal pigment epithelium, manifesting as characteristic pigmentary changes. While it remains unclear whether drug cessation will alter the course of retinal disease, we encourage affected patients to discontinue use, and patients with suggestive visual symptoms to undergo a comprehensive ophthalmic exam with OCT and FAF imaging, regardless of exposure. Further work to explore causality is ongoing.

Podium #6 - WITHDRAWN
Podium #7
PROSPECTIVE RANDOMIZED CONTROLLED TRIAL COMPARING THE EFFECT OF COMBINATION OF TRANSURETHRAL FULGURATION AND HYDRODISTENSION AND TRANSURETHRAL FULGURATION MONOTHERAPY IN INTERSTITIAL CYSTITIS/BLADDER PAIN SYNDROME
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1Yonsei University College of Medicine, 2Ewha Womans University, College of Medicine, 3CHA University College of Medicine, 4Dankook University College of Medicine, 5MizMedi Women’s Hospital
Presented By: Hee Seo Son, MD, PhD

Introduction: We performed prospective randomized controlled trial to compare therapeutic effect of transurethral fulguration(TUF) combined with bladder hydrodistension (HD) and TUF monotherapy in controlling the pain of Interstitial Cystitis/Bladder Pain Syndrome (IC/BPS).

Methods: With approval of institutional review board, IC/BPS patients with Hunner’s lesion, were enrolled from August 2015 to February 2018. Patients were randomly allocated to combination therapy of HD and TUF (HD+TUF), or TUF monotherapy (TUF) using permuted block randomization. For TUF group, mucosal fulguration was performed focused on the Hunner’s lesion. For HD+TUF group, additional bladder hydrodistension was performed prior to TUF at the pressure of 80cmH2O for 8 minutes. Treatment efficacy was evaluated at postoperative 1st, 2nd, 4th and 6th months.

Results: 51 (HD+TUF-25, TUF-26, M-7, F-44) patients were evaluated. Median age at operation was 64.0 (29.0~83.3) years. During the study period, 12 (HD+TUF-4, TUF-8) patients who needed intervention for recurrent pain were dropped out, and 7 (HD+TUF-2, TUF-5) patients refused to participate. Overall drop-out rate was 20.0% for HD+TUF group and 46.2% for TUF group by Intention-To-Treat analysis (P=0.075). Drop-out caused by pain was 17.4% for HD+TUF group and 38.1% for TUF group by Per-Protocol analysis (P=0.179). At postoperative 1 month, Visual Analogue Scale pain score (VAS) was not significantly different between groups; Superiority of HD+TUF to TUF was observed in the scores of EQ-5D Health questionnaire, Brief pain inventory-short form-pain severity and patient global assessment. From postoperative 2 months, significantly lower scores were observed in HD+TUF group; VAS, O’Leary-Sant Interstitial Cystitis questionnaire, Pelvic Pain and Urgency/Frequency patient symptom scale. The difference of VAS was most prominent at postoperative 4 months. Significant number of patients were dropped out for pain after postoperative 4 months; 8.7% of HD+TUF group, 28.6% of TUF group (P=0.126). When the remaining patients were analyzed at 6 months, VAS was still significantly lower in HD+TUF group, but the score difference was decreased (Table 1).

Conclusion: HD + TUF combination was superior to TUF monotherapy in treating the pain of IC / BPS. The most significant difference in therapeutic effect was observed at 4 months. Larger proportion of patients with TUF monotherapy required additional pain treatment within postoperative 6 months.
Podium #8

OPIOID PRESCRIPTION USE IN PATIENTS WITH INTERSTITIAL CYSTITIS
Jacqueline M. Zillioux1, C William Pike2, Matthew Clements1, David Rapp1
1University of Virginia School of Medicine, 2Georgetown University School of Medicine
Presented By: Jacqueline M. Zillioux, MD

Introduction: The opioid epidemic has been the recent focus of significant national initiatives to reduce the misuse of opioids and related addiction. Interstitial cystitis (IC) is a chronic pain state at risk for frequent narcotics use. Accordingly, we sought to assess narcotic prescription use in patients with IC through analysis of patient claims data.

Methods: Data were accessed from the Virginia All Payers Claims Database (VAPCD), a dataset that includes medical and pharmacy claims from state residents insured through Medicare, Medicaid, and private commercial insurers. We identified female patients with diagnosis of IC from 2011-2017 using International Classification of Disease (ICD) codes 595.1 (ICD9) or N30.10 (ICD10). A patient identifier was used to link diagnosis claims with outpatient prescription claims for opioids by using generic product identifiers. We then analyzed opioid prescriptions within 30 days of a claim with IC diagnosis.

Results: A total of 6,989 patients with an IC diagnosis were identified and were associated with 31,685 claims. Accordingly, the median number of IC claims per patients was 7 (IQR 3,21). Mean patient age was 48.6 (95% CI 48.5, 48.7). 27.8% of patients had at least 1 opioid prescription, with a median of 2 prescriptions (IQR 1, 4). In those patients receiving opioids, 186 (9.6%) patients had more than 10 prescriptions for opioids, with a max of 129. The most common prescriptions were hydrocodone (n=2579, 31.5%), oxycodone (n=1889, 23.1%), and tramadol (n=1139, 13.9%). In addition, prescriptions for methadone (n=101, 1.2%) and buprenorphine (n=40, 0.5%) were associated with IC diagnosis. Opioid prescriptions per month are shown in Figure 1, demonstrating a decline in opioid prescriptions per month for IC. However, the rate of narcotic prescriptions per IC diagnosis remained stable.

Conclusion: A significant number of patients with IC diagnosis are treated with opioids, with a percentage receiving a large number of opioid prescriptions. While the overall number of opioid prescriptions associated with IC appears to be declining, the prescription rate per IC diagnosis has not declined over the study years. As part of the national initiative to reduce narcotics use, our data suggest that IC treatment strategies should be examined.
Introduction: The use of antibiotic prophylaxis for urodynamic testing (UDS) is historically based on a paucity of outcomes data. The current best practice policy statement encourages prophylaxis in non-index patients. However, with the burden of antimicrobial resistance, there is value in critically assessing the necessity of such prophylaxis, in order to optimize antimicrobial stewardship.

Methods: A retrospective cohort review of all patients undergoing UDS was conducted at a single institution between May 2017 and July 2018. Inclusion criteria was as follows: no antimicrobials within seven days, for daily prophylaxis, or post-procedure; and documented follow-up within three months. The analysis was stratified by age, BMI, medical comorbidities, neurologic disease, immunosuppression, bladder management, history of orthopedic implants, and post void residual/bladder outlet obstruction. Index and non-index were compared, quantifying incidence of symptomatic urinary tract infections (UTI) within 30 days.

Results: Two hundred fifty patients qualified for analysis. Twelve (4.80%) patients total developed symptomatic UTI. Median time to infection was 8 days. No patient developed pyelonephritis or sepsis. There were 123 (49.2%) index patients with 5 (4.07%) UTIs, and 127 (50.8%) non-index patients with 7 (5.51%) UTIs. The non-index cohort (defined by the 2017 best practice policy statement), included the following patient sub-groups and rates of infection, respectively: age greater than 70 years old (N=84; UTI 3.57%); neurogenics (N=36; UTI 11.11%) sub classified as multiple sclerosis (N=17; UTI 17.65%), Parkinson’s disease, (N=6; 16.67%), CVA (N=12; no UTI), and spinal cord injury (N=1; no UTI); orthopedic implants (N=17; no UTI); post void residual greater than 100 (N=42; UTI 7.14%); bladder outlet obstruction (N=27; UTI 7.41%); immunosuppression (N=30; UTI 10.0%) [chemotherapy, chronic steroids, transplant, innate deficiency]; indwelling Foley or suprapubic tube (N=9; no UTI); and intermittent catheterization (N=3; 1.20%, no UTI).

Conclusion: This data demonstrates an acceptably low infection rate, by any standard, even in non-index patients. The highest rates of symptomatic UTI occurred in the multiple sclerosis and Parkinson’s disease sub-group. Nonetheless, not one patient developed sepsis or any more severe morbidity. This analysis provides concrete patient outcomes as a basis for shifting treatment paradigms; calling into questions the utility of antibiotic prophylaxis even in the non-index patient undergoing UDS.
Podium #10
URODYNAMIC FINDINGS IN PATIENTS WITH NOCTURIA: AN AGE- AND GENDER-MATCHED STUDY
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Presented By: Elisabeth M. Sebesta, MD

Introduction: Nocturia, defined as waking ≥1 times to void during sleep, with each void preceded by sleep, negatively impacts quality of life. Nocturia patients are a heterogeneous cohort due to its multifactorial causes, both urologic and systemic. Urodynamic (UDS) findings in patients with nocturia are not well described and may help guide management options. Our objective was to compare UDS findings in patients presenting with and without nocturia.

Methods: We retrospectively reviewed UDS of 1124 patients (2010-2017), of whom 484 (43%) presented with nocturia. Age-matching of patients with and without nocturia was done, separated by gender (156 men, 596 women). Presenting symptoms, demographic information, and UDS findings were compared between patients with and without nocturia using chi-squared, Fischer’s exact, and t-test.

Results: In both genders, past medical history including diabetes and cardiovascular disease did not differ between groups. However female patients with nocturia had significantly lower body mass index (BMI) (P=0.003) (TABLE). Men and women with nocturia were more likely to have daytime symptoms including frequency, urgency, and urgency incontinence (UUI). UDS findings in men did not differ between the cohorts, including findings of bladder outlet obstruction (BOO) and detrusor overactivity (DO). However, women with nocturia were more likely to have BOO (P=0.025). Men were further stratified by degree of nocturia in 27/76 (36%) patients. 37% reported 1-2 episodes per night and 63% 3 or more. When comparing to an age-matched cohort without nocturia, patients with 1-2 episodes had larger bladder capacity (602±386mL vs. 356±213mL, P=0.10), and significantly higher post-void residual (PVR) (322±275mL vs. 102±185mL, P=0.05) and incomplete emptying (P=0.005).

Conclusion: Here we present one of the only studies to compare UDS findings in contemporary, age- and gender-matched cohorts of patients with and without nocturia. While treatment of nocturia often involves attempts at resolving DO or BOO, our study suggests these findings are not necessarily more commonly present with nocturia. Women with nocturia were more likely to have BOO while men with mild nocturia were more likely to have larger bladder capacity, higher PVR, and incomplete emptying, suggesting an association between nocturia and longstanding BOO. This study highlights the multifactorial etiology of nocturia and its related management challenge.
Podium #11
CHALLENGES DEFINING “NORMAL” IN MULTI-CHANNEL URODYNAMICS
Natalie Swavely, MD, John Speich, PhD, Naveen Nandanan, MD, Andrea Balthazar, MD, Adam Klausner, MD
Virginia Commonwealth University
Presented By: Natalie Swavely, MD

Introduction: Multi-channel urodynamics testing is the gold standard for the diagnosis of lower urinary tract dysfunction. However, the study is invasive, non-physiologic, and prone to artifacts. These issues result in challenges in both interpretation and clinical utility, even when following strict practice guidelines. Therefore, the purpose of this investigation was to examine urodynamics in normal, healthy volunteers in order to better define “normal” in a modern cohort.

Methods: Healthy volunteers were recruited to undergo standard multi-channel urodynamic testing as part of a comparison group in a study evaluating novel urodynamic techniques. To be eligible, participants had to score ≤1 on all symptom questions of the ICIq-OAB survey and have no medical conditions or be on any medications that affect bladder function. The initial urodynamics fill was done according to ICS standards and used for evaluation. All tracings were evaluated twice by an expert neuro-urologist in a blinded fashion and discrepancies resolved. Data were analyzed categorically for the presence or absence of: 1) Low compliance (< 30ml/cmH20), 2) Detrusor overactivity, 3) Bladder outlet obstruction (BOO < 40), 4) Weak contractility (BCI < 100), 5) Straining to void 6) Poorly sustained detrusor contraction, 7) Uncoordinated EMG activity, and 8) Intermittent flow.

Results: A total of 24 participants completed the study including 10 men and 14 women. The mean age of the participants was 28.83±11.45 with mean BMI of 26.46±6.23. ICIq-OAB scores for frequency, nocturia, urgency, and urge incontinence were (0.17±0.38, 0.33±0.48, 0±0, 0±0, respectively). All participants had at least 1 urodynamic abnormality (fig 1) with an average of 4.43±1.28 abnormalities/participant. The most common abnormalities included uncoordinated EMG activity (87.50%), straining to void (79.17%), and intermittent flow (70.83%). There were no significant differences for sex, age, BMI.

Conclusion: This study demonstrated that normal, healthy volunteers have high rates of abnormal urodynamic findings. As all participants were completely asymptomatic, this suggests that artifacts and the non-physiologic nature of urodynamic testing present serious challenges in both diagnostic interpretation and clinical utility. This data highlights the need to develop less-invasive and more physiologic techniques to more accurately evaluate bladder function.
Podium #12
SLING REVISION FOR BLADDER OUTLET OBSTRUCTION IN WOMEN WITH PRIMARILY STORAGE SYMPTOMS: WHAT ARE THE BEST URODYNAMIC CRITERIA TO PREDICT OUTCOMES?
Christina Escobar, Benoit Peyronnet, MD, Rachael Sussman, Ricardo Palmerola, Nirit Rosenblum, Victor Nitti, Benjamin Brucker, Dominique Malacarne Pape
New York University
Presented By: Christina Escobar, MD

Introduction: Urodynamics have a limited role when patients clearly have symptoms of obstruction soon after anti-incontinence procedures. However, in patients with primarily storage symptoms after anti-incontinence procedures urodynamics may be useful. Five contemporary urodynamic criteria have been proposed to define bladder outlet obstruction (BOO) in females based on pressure-flow (PF) studies (Zimmern criterion, Blaivas-Groutz nomogram, BOO index (BOOi), Solomon nomogram) or video-fluoroscopy (Nitti video-urodynamic (VUD) criteria). The ability of these criteria to predict outcomes of women with primarily storage symptoms has not been studied. The aim of this study was to evaluate the clinical relevance of the five contemporary female BOO urodynamic criteria that assess for obstruction to predict surgical outcome in patients presenting with storage symptoms who underwent sling revision.

Methods: A retrospective chart review was performed of all female patients who underwent sling revisions between 2010 and 2018. Women with primarily storage symptoms, history of an anti-incontinence procedure, revision of an anti-incontinence procedure and complete urodynamic data were included. The primary outcome was patients' reported improvement in post-operative storage symptoms defined as cured or improved vs. unchanged or worsened. ROC curves were generated to compare predictive values of the five aforementioned urodynamic criteria.

Results: Thirty-three patients were eligible for inclusion. Postoperatively, 15.1% of patients had complete resolution of symptoms (cured), 48.5% were improved, 27.3% were unchanged and 9.1% were worsened. 63.6% of patients met the primary endpoint (storage symptoms cured/improved). Of patients with primary storage symptoms who were clinically thought to be obstructed from a sling, 48.4% met Nitti VUD criteria, 45.4% met Zimmern criteria, 66.7 % met Blaivas criteria and 24.2% met BOOi criteria for obstruction. For Solomon criteria, 39.4 % were classified as “obstruction almost certain”. The ROC curves of all 5 criteria are presented in figure 1. The VUD criteria had the best predictive value with a specificity of 67% and a sensitivity of 57.9%, however did not reach statistical significance (p=0.16).

Conclusion: When analyzing 5 contemporary criteria for BOO in females there was no significant evidence to support their predictive value for favorable outcomes in patients with clinical obstruction and primarily storage symptoms. Future work is needed to establish better objective predictors of favorable outcome.

Figure 1: ROC curves of the five female bladder outlet obstruction urodynamic criteria for predicting sling revision outcomes
Podium #13
A NOVEL MOBILE UROFLOWMETRY APPLICATION FOR ASSESSING LOWER URINARY TRACT SYMPTOMS
Craig V. Comiter, MD1, Edward Belotserkovsky, PhD2
1Stanford University School of Medicine, 2BE Technologies
Presented By: Craig V. Comiter, MD

Introduction: We developed a MenHealth® mobile touchless uroflowmetry application for the assessment of lower urinary tract symptoms. It processes the sound of urine hitting the water surface in the toilet and calculates urinary flow rate and voided volume in real time. We undertook a validation study of this novel uroflowmetry application.

Methods: To confirm the accuracy of the MenHealth® uroflowmetry application, a validation trial using a standard medical office urinary flowmeter (Laborie UROCAP II) as a reference was conducted. Two males, age 36 and 58, provided a total of 50 voids with measurement of uroflow and voided volume: 22 tests using UROCAP II and 28 tests using MenHealth® application. The average maximum flow rate and average voided volume were calculated and their ranges were determined. In a separate validation trial, 31 independent testers evaluated the MenHealth® application on their mobile device.

Results: Comparisons of average maximum flow and of average voided volume and their ranges demonstrated no significant statistical difference between the MenHealth® audio uroflowmetry and the Laborie UROCAP II. Results of the validation trial are presented in the table below. In a separate validation trial, 31 independent testers evaluated the MenHealth® application. Of the participants, 91% rated the application easy or very easy to use. Additionally, 56% responded that they would test their urine flow every week or several times a week, and 77% responded that they would conduct self-testing once per month or more often. Finally, 84% of testers responded that they would purchase the application if a physician recommended it, and all the testers responded that they would definitely use the app if cost was covered by their insurance.

Conclusion: The MenHealth® application is non-contact, hygienic, free from the need for cleaning between uses, and user-friendly. Equivalence with standard uroflowmetry has been established. This audio uroflowmetry application can convert any toilet into a mobile uroflowmeter. This novel technology can be used by men at home for self-assessment. Graphic recording of the uroflow curves, especially with multiple data points, should aid the physicians’ evaluation of voiding dysfunction.

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DIFFERENCES IN BLADDER SENSATION DESCRIPTORS IN PARTICIPANTS WITH OVERACTIVE VERSUS HEALTHY BLADDERS IDENTIFIED USING SENSATION METER DURING NON-INVASIVE HYDRATION STUDIES

Blessan Sebastian, BS1, Dhruv Sethi, MBA, MPH1, Anna S. Nagle, PhD2, Devina Thapa1, Naomi Vinod, BS1, Zachary Cullingsworth, BS2, Andrea Balthazar, MD1,3, Adam Klausner, MD1,3, John Speich, PhD2

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 Surgery Hunter Holmes McGuire Veterans Affairs Medical Center, Richmond, VA

Presented By: Andrea Balthazar, MD

Introduction: There is currently no standardized method to evaluate real-time bladder sensation during bladder filling outside of invasive urodynamic studies. A previously engineered sensation meter which implements unique sensation descriptors to track real-time changes in sensation has been used to characterize individuals with healthy bladders. The purpose of this study was to test the hypothesis that real-time bladder sensation events and descriptors are different in individuals with normal and overactive bladders using the sensation meter.

Methods: Individuals with no urgency or high urgency based on ICIq-OAB surveys (question 5a=0 or ≥3) were enrolled in an IRB-approved accelerated oral hydration protocol. Participants drank 2L Gatorade G2® and completed two consecutive fill-void cycles during which they utilized a tablet-based sensation meter to record real-time bladder sensation on a 0% to 100% scale and sensation descriptors of “tense,” “pressure,” “tingling,” “painful,” and “other” for each reported change in sensation, or “sensation event.”

Results: Data from 29 participants (12 healthy and 17 OAB) were analyzed. The rate of filling, based on voided volumes and durations between voids, was greater for Fill 2 in both groups. In Fill 1, “tingling” occurred at a lower sensation in OAB participants (mean±standard error=64±3%) than in healthy participants (77±3%, p=0.008). During faster filling in Fill 2, “tingling” in healthy participants (64±4%) and OAB participants (64±4%) were not different from each other and were not different from Fill 1 in OAB participants. In Fill 1, “tense” occurred at a lower sensation in the OAB group (78±3%) than in the normal group (94±1%, p<0.001) and “pressure” showed a similar trend.

Conclusion: These results suggest that OAB individuals experience tingling earlier during filling regardless of the fill rate and that faster filling may cause healthy individuals to exhibit OAB behavior for certain sensation descriptors. This study demonstrates that the rate of filling may have an important role in the identification of sensation patterns. Non-invasive characterization for sensation descriptors may provide valuable information for better understanding real-time sensation in OAB.

Figure 1: Box and whisker plots of percent sensation for each reported sensation event descriptor. Shaded plots represent the OAB group results. (*) indicates statistical significance when compared to the same descriptor in the healthy group.
Podium #15
DOES FEMALE PELVIC FLOOR MUSCLE STRENGTH EFFECT URODYNAMIC URETHRAL FUNCTION?
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Presented By: David Ossin, MD

Introduction: Maximal Urethral Closure Pressure (MUCP) is a passive measurement of urethral pressure, and leak point pressure (LPP) is a dynamic measurement of the abdominal pressure required to induce leakage during urodynamic testing. Our hypothesis is that LPP and MUCP can be stratified to pelvic floor muscle (PFM) function by a standardized scale of the Modified Oxford Scale (MOS).

Methods: This was a retrospective database review of patients presenting with stress urinary incontinence or stress predominance mixed urinary incontinence. The patients' MOS was divided into two categorical values: poor PFM (pPFM) and good PFM (gPFM) group. The pPFM group consisted of patients with the MOS of 0, 1 and 2. The gPFM group consisted of patients with the MOS of 3, 4, and 5. We performed a student t test of pelvic muscle strength groups for MUCP, LPP at 150 ml, and LPP at cystometric capacity.

Results: A total of 1234 patients with stress urinary incontinence were confirmed with LPP at 150 ml and/or capacity after urodynamic testing. Of those patients, a total of 1229 had recorded MUCP values. The mean MUCP for the pPFM group was 49.97 cmH2O ± 28.07 and the mean MUCP for the gPFM group was 56.30 cmH2O ± 28.92. There was a statistical difference between increasing MUCP values with stronger PFM (p = 0.0002). The mean LPP for the pPFM group was 76.55 cmH2O ± 36.49 at 150 cc and 69.1 cmH2O ± 34.03 at cystometric capacity. The mean for the gPFM group was 82.97 cmH2O ± 38.79 at 150 cc and 74.29 ± 37.31 at cystometric capacity. Women with stronger PFM strength were also statistically different with higher LPP for both 150 ml and cystometric capacity (p = 0.0238 and p = 0.0162).

Conclusion: Patients with stronger PFM strength had a statistically higher MUCP. This may be due to higher baseline pelvic tone created by the patient’s PFM leading to higher passive urethral pressure. Higher LPP at 150 ml and capacity was also statistically higher with stronger PFM strength. Stronger PFM may lead to higher urethral resistance to expulsive forces during maneuvers that increase intra-abdominal pressure, which may lead to higher LPP.
Podium #16
PREPAREDNESS FOR PROSTATECTOMY IMPACTS PATIENT-REPORTED POSTOPERATIVE URINARY OUTCOMES – 1 YEAR RESULTS
Bradley Gill, MD, MS1,2, Anna Faris, BS1, Abhinav Khanna, MD, MPH1, Anna Zampini, MD, MBA1, Daniel Hettel, MD1, Hadley Wood, MD1, Edmund Sabanegh, MD1
1Cleveland Clinic, 2Cleveland Veterans Affairs Medical Center
Presented By: Bradley C. Gill, MD, MS

Introduction: Prostatectomy effectively treats prostate cancer but has adverse effects on urinary function. Patient education can improve preparedness for surgery, which may also improve patient-reported outcomes. This study assessed the impact of preoperative group education on men’s preparedness for prostatectomy and their urinary outcomes.

Methods: Men undergoing prostatectomy from 2015-2016 in a large health system were invited to participate in a preoperative group education seminar. The session detailed the anticipated perioperative and postoperative periods, including expectations for urinary function recovery. Men’s pre-operative preparedness was measured by survey at course completion. Patient-reported outcomes were assessed by telephone calls 3 weeks, as well as 3, 6, and 12 months postoperatively. Basic comparative statistics were used to assess for relationships between preparedness and outcomes.

Results: Mean age was 63 (standard deviation 8.5) years at prostatectomy. Of 209 class participants, visual analog scale ratings of 90%-100% showed most men understood potential outcomes 78% (N=163) and side effects 80% (N=167) of surgery, as well as knew what to expect in recovery 74.5% (N=155). Many agreed or strongly agreed they felt anxious about surgery 63% (N=131) but prepared for recovery at home 78% (N=163), while understanding they would have a catheter 96% (N=200), may leak urine afterward 98% (N=204), and may need up to a year to recover urinary function 94% (N=196). Most men agreed they felt prepared overall for surgery 82% (N=170) and understood possible complications 84% (N=174). Daily pad use (median [interquartile range]) decreased across postoperative assessments: 3-week 2 [1-4], 3-month 1 [0-2], 6-month 1 [0-1], and 1-year 0 [0-1]. At the same time points, most men felt their urinary control was good enough to complete their desired activities: 53%, 80%, 82%, and 79%, respectively. Likewise, most men reported their recovery of urinary leakage as expected or better than expected: 73%, 80%, 85%, and 81%, respectively. Better understanding that urinary recovery may take a year was associated with greater overall satisfaction with recovery at 3-weeks (p<0.0001) and 3-months (p=0.0353) but not beyond. Overall, better preparedness for surgery aligned with urinary control perceived as good enough to complete desired activities at 3-months (p=0.0185) and 1-year (p=0.0191).

Conclusion: Group education achieved high levels of preparedness for prostatectomy. Preparedness was associated with better patient reported urinary outcomes within the first year after surgery.
Podium #17

ASSESSMENT OF THE PERSISTENCE OF SEVERE URINARY INCONTINENCE IN A POST-OP RADICAL PROSTATECTOMY COHORT
Elizabeth I. Roger¹², Lauren Green³, Kurt McCammon¹
¹Eastern Virginia Medical School, Norfolk, VA, ²Naval Medical Center Portsmouth, VA, ³Eastern Virginia Medical School
Healthcare Analytics and Delivery Science Institute, Norfolk, VA
Presented By: Elizabeth I. Roger, MD

Introduction: Urinary incontinence after radical prostatectomy can have a drastic impact on quality of life. In reported literature, the natural history of men with moderate to severe post-op incontinence has not been adequately studied. Our aim was to better predict which patients would benefit from prompt surgical interventions for incontinence. We hypothesized that men using >3 pads after surgery would be much less likely to regain continence and would be most bothered by their symptoms.

Methods: The study population included men with localized prostate cancer treated with radical prostatectomy at a single center from December 1999 to April 2018. EPIC-26 and UCLA quality of life surveys were completed at multiple time points post-op, up to 30-month follow-up. Associations between health outcomes and pad use were assessed using Pearson’s chi square tests. Post-surgery improvement in urinary control and quality of life were modeled using multinomial logistic regression.

Results: A total of 1,568 patients were assessed. At one-month following surgery, 1,034 reported using 3 pads. Patients using 3 pads (95% CI 5.151, 9.991). The probability of a severely incontinent patient regaining continence was .12, while those using. Patients requiring >3 pads reported lower quality of life scores. High bother score at any time post-surgery was significantly associated with using more than 3 pads (p<.0001). Patients using 3 pads was .22, compared to .78 in patients using

Conclusion: Based on our data, the status of urinary control in the first month following radical prostatectomy, assessed by quantitative pad counts and qualitative reports of symptoms, can predict long term outcomes. Patients requiring >3 pads are less likely to recover continence and continue to report high bother scores long after prostatectomy. This cohort should be appropriately counseled as they may benefit most from early surgical interventions for incontinence.
Podium #18
DEVELOPMENT AND EVALUATION OF A NOVEL LONG-TERM FULLY-RESORBABLE SCAFFOLD OPTIMIZED FOR FEMALE PELVIC ORGAN PROLAPSE (POP)
Zeliha Guler Gokce¹, Chantal M. Diedrich¹, Eva Vodegel¹, Lucie Hympánová², Edoardo Mazza³, Jan Deprest², Jan Paul Roovers¹
¹Academic Medical Center, University of Amsterdam, Amsterdam, The Netherlands, ²Centre for Surgical Technologies, Group Biomedical Sciences, KU Leuven, Leuven, Belgium, ³Institute of Mechanical Systems, ETH Zurich, Zurich, Switzerland
Presented By: Zeliha Guler Gokce, PhD

Introduction: Permanent synthetic meshes for transvaginal POP procedures have been associated with clinical complications which may be induced by their mechanical properties, exaggerated foreign body response and inappropriate tissue integration. Poly-4-hydroxybutyrate(P4HB) monofilament mesh represents a novel long-term resorbable material with unique mechanical and resorption properties that supports collagen deposition, vascularization and gradual load transfer to the host over time. P4HB mesh may have the potential to reduce complications associated with permanent mesh for POP procedures. In this study we aimed to evaluate 1) the in vitro mechanical and cellular response properties of P4HB mesh in three unique knit designs (Diamond, Delaware, Marquisette), as compared to permanent polypropylene mesh(Restorelle); and 2) the in vivo biomechanical and histological properties associated with P4HB (Diamond) mesh in a large animal (sheep) rectovaginal implantation model.

Methods: In vitro: Mechanical evaluation was conducted by uni-axial tensile test. Multiple P4HB mesh designs were cultured with vaginal fibroblasts to evaluate collagen deposition and cell proliferation, as compared to Restorelle. In vivo: P4HB (Diamond) mesh was surgically implanted on the posterior vaginal wall of sheep. Gross necropsy, mechanical and histological evaluation was performed at 60 (n=7 Sheep) and 180 days (n=7 Sheep) post-implantation.

Results: Greater proliferation and collagen deposition were observed on all P4HB mesh designs, as compared to Restorelle. Mechanical evaluation indicated that P4HB (Diamond) mesh had significantly greater strength and comparable stiffness with Restorelle(Fig.1A). Diamond was selected as the optimal knit design for in vivo evaluation. Gross necropsy revealed no adverse effects of P4HB mesh. Mechanical analysis indicated a significant increase in stiffness between 60 and 180 days, and a reduction in residual mesh molecular weight over time. Histological analysis of explants indicated an increase in collagen deposition between 60 and 180 days post-implantation(Fig.1B).

Conclusion: P4HB (Diamond) mesh has been developed as a novel long-term resorbable monofilament scaffold and evaluated as an alternative to permanent meshes for POP. In vitro data suggest comparable stiffness with Restorelle and more optimal vaginal fibroblast proliferation. In vivo data revealed that P4HB mesh supports vaginal wall reinforcement over time with no adverse effects. P4HB mesh demonstrated promising outcomes as a viable alternative to permanent mesh for the surgical correction of POP.
Podium #19
ASSESSING THE IMPACT OF PROCEDURE-SPECIFIC OPIOID PRESCRIBING RECOMMENDATIONS ON OPIOID STEWARDSHIP FOLLOWING PELVIC ORGAN PROLAPSE SURGERY
Brian J. Linder, MD, MS, John Occhino, MD, Christopher Klingele, MD, Emanuel Trabuco, MD, John Gebhart, MD
Mayo Clinic
Presented By: Brian J. Linder, MD, MS

Introduction: To design procedure-specific opioid prescribing recommendations for pelvic organ prolapse surgeries and evaluate their impact on opioid stewardship.

Methods: We prospectively evaluated opioid prescribing patterns, patient utilization, medication refills, and patient satisfaction in women undergoing prolapse surgery (i.e. vaginal, abdominal, or robotic) during an eight-month time-period. Two cohorts of women, stratified by whether they had surgery before or after implementation of procedure-specific opioid prescribing recommendations, were evaluated. Postoperative opioid usage (assessed via pill count) and satisfaction with pain management after hospital dismissal were evaluated by telephone call two weeks after surgery. Postoperative opioid prescribing and use were recorded after conversion to Oral Morphine Equivalents (OME).

Results: Overall, 96 women were included, 57 in the initial baseline cohort, and 39 following implementation of the prescribing recommendations. In the initial cohort, 3607/11007 mg (32.8%) of the prescribed OME were consumed. Following implementation of the prescribing recommendations, median OME prescribed decreased from 200 mg OME (IQR 150,225) to 112.5 mg OME (IQR 22.5,112.5; p

Conclusion: At baseline, overprescribing of opioids following pelvic organ prolapse surgery was common. By utilizing procedure-specific opioid prescribing recommendations we decreased the number of opioids prescribed at hospital dismissal by roughly half. Decreased opioid prescribing did not adversely impact patient satisfaction.
Podium #20
READABILITY OF PATIENT EDUCATION MATERIALS ON PELVIC ORGAN PROLAPSE, OVERACTIVE BLADDER, AND STRESS URINARY INCONTINENCE
Chris Du1, Wai Lee2, Alvaro Lucioni2, Kathleen C. Kobashi2, Una J. Lee2
1SUNY Stonybrook, 2Virginia Mason
Presented By: Chris Du, BA

Introduction: Providing health education through written materials is a time-tested method of educating patients, and 75% of physicians routinely hand out patient education materials (PEMs). In order for PEMs to be effective, patients must be able to comprehend them. The Joint Commission recommends PEMs should be written at or below a 5th grade level, and the American Medical Association recommends PEMs not exceed the 7th grade level. Prior studies have shown that PEMs are routinely written at or above the 8th grade level. The objective of this study was to assess the readability of PEMs available online from urologic and gynecologic organizations for 3 topic areas: pelvic organ prolapse (POP), overactive bladder (OAB), and stress urinary incontinence (SUI).

Methods: We examined available (in September 2018) online, downloadable English PEMs for POP, OAB and SUI from national and international organizations, including American Urological Association (AUA), American Urogynecological Society (AUGS), Society for Urodynamics, Female Pelvic Medicine and Urogenital Reconstruction (SUFU), International Continence Society (ICS), International Urogynecological Society (IUGA), and American College of Obstetrics and Gynecology (ACOG), and National Association for Fecal Continence (NAFC). The texts were evaluated using 5 validated indices (Flesch Reading Ease, Flesch-Kincaid Index (FKI), Simple Measure of Gobbledygook (SMOG), Gunning Fog Index (GFI), and Coleman-Lindau Index (CLI)). Mean grade level was calculated for each of the 3 topic areas.

Results: 7 POP, 8 OAB, and 7 SUI PEMs were evaluated (Table 1). Mean readability scores for POP PEMs was grade level 12.3 (range 9.1-16.66; SD 1.89). The mean readability scores for OAB PEMs was grade level 9.4 (range 5.1-17.9; SD=3.0). Mean readability score for SUI PEMs was grade level 11.5 (range 7.5-16.9; SD 2.5).

Conclusion: Appropriate readability enhances patients’ ability to comprehend health information. However, the PEMs for POP, OAB, and SUI evaluated in this study are written at or above the level of a high school student, above the recommended target readability for a substantial proportion of the population. Developing accessible easy-to-read PEMs is important to promote patient-centered care for POP, OAB, and SUI.
Podium #21

UTILIZATION OF TRANSVAGINAL MESH AND URETHRAL SLING IN NEW YORK STATE FROM 2005 TO 2015

Zhenyue Huang¹, Anh Thuy Nguyen¹, William T. Berg², Alexandra R. Siegal¹, Sina Mehraban-Far¹, Michael Gross¹, Steven Weissbart², Jason Kim⁰

¹Stony Brook University School of Medicine, Stony Brook, New York, ²Department of Urology, Stony Brook University Medical Center, Stony Brook, New York

Presented By: Zhenyue Huang

Introduction: In 2011, the U.S. Food and Drug Administration (FDA) issued a safety communication warning physicians and consumers about an increase in adverse events related to mesh in urogynecological procedures. There is currently limited data regarding how this impacted the use of transvaginal mesh for pelvic organ prolapse (POP) and mesh urethral sling for stress urinary incontinence (SUI). We sought to investigate the utilization of urogynecological mesh across time and among gynecologists, urologists, and female pelvic medicine trained physicians using a statewide database.

Methods: Transvaginal mesh for POP and sling implantations for SUI performed by New York state physicians between 2005 and 2015 were extracted from the New York Statewide Planning and Research Cooperative System (SPARCS) database utilizing CPT procedure codes.

Results: Over the study period, a total of 4,550 transvaginal mesh and 46,510 sling operations were identified. The number of transvaginal mesh insertion for POP substantially decreased from 694 cases in 2011 to 288 cases in 2015 (figure 1A). In 2011, 30% of cystocele repairs included mesh, while in 2015 only 10% did (p<0.01) (figure 1B). Furthermore, the rate of mesh revision and removal has trended upwards since 2005 (p<0.01). Interestingly, the number of urethral sling procedures for SUI has also decreased from 5,732 cases in 2011 to 3,488 cases in 2015 (figure 1C). The total number of transvaginal mesh procedures for POP performed by non-FPMRS gynecologists decreased dramatically from 405 in 2011 to 144 procedures in 2015. However, this number remained relatively stable for non-FPMRS urologists and FPMRS-certified physicians (figure 1D). The number of non-FPMRS gynecologists performing mesh insertion for POP substantially decreased from 61 in 2011 to 32 physicians in 2015.

Conclusion: In New York State, the utilization of transvaginal mesh for POP and mesh urethral sling for SUI has significantly decreased since the 2011 FDA warning. Specifically, the number of non-FPMRS gynecologists performing mesh procedures as well as the total number of procedures performed by non-FPMRS gynecologists dramatically decreased from 2011 to 2015. Future studies are needed to investigate mesh usage and how physician specialty and training results in differences in approach and surgical outcomes.
Podium #22
CONTEMPORARY MULTICENTER OUTCOMES OF AUGMENTATION CYSTOPLASTY IN THE ADULT POPULATION OVER A 10-YEAR PERIOD: A NEUROGENIC BLADDER RESEARCH GROUP (NBRG) STUDY
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1University of Utah, Salt Lake City, UT, 2Houston Methodist Hospital, Houston, TX, 3Western University, London, Ontario, Canada, 4University of Southern California, Los Angeles, CA, 5University of Michigan, Ann Arbor, MI, 6Carolinas Medical Center, Chapel Hill, NC, 7University of California San Diego, San Diego, CA, 8University of Minnesota, Minneapolis, MN
Presented By: Philip J. Cheng, MD

Introduction: Bladder augmentation is among the most complex and morbid surgeries in pediatric urology, but there is a lack of data within the adult population. The objective of this study is to evaluate the outcomes of bladder augmentation in the adult population in a multicenter study.

Methods: We reviewed the charts of 101 patients from 4 sites in North America, from the Neurogenic Bladder Research Group (NBRG) who underwent bladder augmentation between July 2007 and September 2017. Eight patients were excluded due to age under 18 (2 patients) or follow-up < 6 months (6 patients). We evaluated patient demographics, modality and type of surgery, 90-day complications and readmissions, and follow-up surgeries.

Results: A total of 95 patients with a median age of 37 years were included in the study. 44 (46%) patients were male, and spinal cord injury was the leading etiology (49, 52%). Prior to surgery, most patients’ bladder management was clean intermittent catheterization (50, 53%), followed by indwelling catheter (35, 37%). 73 (77%) patients underwent a bladder augmentation with a catheterizable channel, while 22 (23%) patients underwent a small bowel augmentation alone. The median length of hospital stay was 8 days (IQR 7-11) for channel patients and 7 days (IQR 6-10) for non-channel patients. The overall 90-day complication rate was 25.3% (24 patients), which included 17 channel patients (23.2%) and 7 non-channel patients (31.8%). In the 90-day post-operative period, 13 patients (14%) were readmitted and there were no deaths. Beyond the 90-day period, 40 patients (42%) underwent a total of 62 surgeries related to their bladder augmentation surgery. 35 of the 73 channel patients (48%) underwent 55 surgeries, the majority of which involved channel-specific complications (i.e. stenosis, leakage, and parastomal hernia).

Conclusion: This is the first contemporary multicenter series evaluating bladder augmentation in the adult population. 90-day complication and readmission rates were low, but many of these patients—primarily the ones with catheterizable channels—required follow-up surgeries.
Podium #23
LESSONS LEARNED: FIRST 50 VAGINOPLASTIES
Virginia Y. Li, Amanda Chi, Melissa Poh, Owen Aftreth, Daniel Artenstein, Polina Reyblat
Kaiser Permanente
Presented By: Virginia Y. Li, MD

Introduction: Gender dysphoria affects 0.6% of adults in the United States (US). Gender affirmation surgery (GAS) helps patients align their anatomy with their gender identity. In the past, GAS was limited in the US, which impeded multidisciplinary care and long term follow-up. Our retrospective review reports lessons learned from the first 50 vaginoplasties done in a multidisciplinary setting.

Methods: All patients who underwent a penile inversion vaginoplasty at Kaiser Permanente Southern California 2017-2018 were included. Patients satisfied criteria for GAS per World Professional Association for Transgender Health guidelines. Characteristics reported include age, preoperative genitourinary exam, urinary function, length of hormone therapy, and medical comorbidities. Surgical outcomes included description of their postoperative course, subsequent follow-up, and complications. Sexual satisfaction, American Urological Association (AUA) symptom score, and urinary quality of life scores were also recorded.

Results: The first 50 consecutive vaginoplasties were reviewed. Mean age was 44, (21-74). Follow-up ranges from 6-22 months. Besides one patient with prior stroke, all were treated with hormone therapy for at least 2 years. All patients have reported good clitoral sensation after the surgery, and early patients have reported orgasms from vaginal intercourse. 20% of patients (10) underwent second stage procedures (labiaplasty/clitoroplasty/urethroplasty). Average AUA score was 4.7 with subsequent improvements on later follow-up visits, with average urinary quality of life score of 1.7.

Conclusion: GAS within an integrated system allows comprehensive follow-up of patients. One stage vaginoplasty in our first 50 patients had excellent outcomes, and minor revisions were only needed in 20% of patients. Overall satisfaction with surgical outcome in terms of sexual function are high as determined by the Genital Appearance Satisfaction scale. Multi-specialty teams is of pivotal importance to the success of the program. Surgeons of FPMRS training are perfectly positioned to lead these programs as they have a rare in depth understanding of both male and female pelvic floor anatomy and function.
Podium #24

IS BOTULINUM TOXIN A AN EFFECTIVE TREATMENT IN PATIENTS FOLLOWING RADIOTHERAPY?

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University College London Hospital

Presented By: Jeremy Ockrim, MD, BSc(Hons), FRCS

Introduction: The response to Botox treatment in patients with idiopathic and neuropathic detrusor overactivity is well documented. However, the literature on Botox therapy in patients who have had prior pelvic radiotherapy are sparse. We have analysed the urodynamic and clinical response in this patient cohort.

Methods: This is a retrospective review of all radiotherapy patients who underwent intradetrusor botulinum toxin A injection at a tertiary centre between 2007-2018. Details including indications for radiotherapy, time from radiotherapy, video-urodynamic, dose of botulinum toxin A, and functional and urodynamic outcomes were analysed. Response was based clinically as none, some or good response. Patients with incomplete responses had repeat urodynamics.

Results: 35 patients were identified (26 men and 9 women). Indications are shown in Table 1. On initial video-urodynamic studies 20/35 (57%) had non-compliant bladder, with an average end fill pressure of 37 cmH2O (range 12-80cmH2O), a further 12/35 (31.4%) had early onset DO from an average of 133mls (range 49-220mls) with incontinence making compliance difficult to assess. 3 patients had end fill detrusor overactivity, with only 2 patients having normal compliance. 15 (43%) patients had good clinical response and went on to repeat injections (mean 2.35 injections, range 1-7). Of these 6/20 (30%) had poor compliance, 7/12 (56%) early onset overactivity and 2/3 (66%) had end fill overactivity. Of those who had partial or poor response repeat urodynamics demonstrated persistent compliance loss and early onset overactivity. The 20 patients who did not respond to intradetrusor injections were offered cystoplasty 6/35 (17%) or urinary diversion to 2/35 (6%). Artificial urinary sphincter was offered to 2 (6%) patients due to predominance of stress leakage. Other patients were managed conservatively.

Conclusion: Poor compliance is a predictor of Botox failure with only 30% showing substantive response. Early onset overactive incontinence responded in 56% and remained durable in these patients.

Table 1:
Introduction: Genitourinary injury and vaginal fistula formation are rare but devastating complications following hysterectomy. The literature regarding this topic is limited and generally focuses on ureteral injury or fistula formation alone, not in combination. We explore the combined genitourinary injury rates and risk factors for injury in a large contemporary population based dataset with long term follow-up.

Methods: All women who underwent a hysterectomy for benign indications were identified using data from the Office of Statewide Health Planning and Development in California from 2005-2011. Those who underwent genitourinary repair at the time of hysterectomy or subsequent surgery for a urologic injury and/or urologic fistula were identified.

Results: Of the 296,130 women who underwent hysterectomy, 5,455 (1.8%) suffered at least one urologic injury including: 2,817 (1.0%) ureteral injuries, 2,058 (0.70%) bladder injuries and 831 (0.3%) resultant fistulas (Figure 1). Those with a ureteral or bladder injury were overall more likely to develop a subsequent fistula (1.1% and 2.7% versus 0.3%, p<0.001), than those without documented injury and repair. If an injury occurred, the rate of subsequent fistula formation was lower if the injury was recognized at the time of hysterectomy (as opposed to being missed) for both ureteral (0.7% versus 3.4%, p<0.001) and bladder (2.5% versus 6.5%, p<0.001) injuries. Multivariate modeling revealed that concomitant POP repair (OR 1.12, p=0.019), a diagnosis of endometriosis (OR 1.40 p<0.001) and surgery at a facility in the bottom quartile of hysterectomy volume (OR 1.37, p=0.049) were all associated with an increased likelihood of a genitourinary injury occurring. A purely vaginal (OR 0.85, p=0.001) or laparoscopic (OR 0.81, p<0.001) approach to hysterectomy and the indication for hysterectomy being endometrial hyperplasia/abnormal uterine bleeding (OR 0.91, p=0.004) were associated with a decreased risk of a genitourinary injury.

Conclusion: Of women undergoing benign hysterectomy ~1.8% will have a genitourinary injury of some form. While any injury will increase the chances of a future fistula, recognizing and addressing the injury at the time it occurs reduces this risk. We identify several factors that are associated with genitourinary injury, providing insight into instances where a higher index of suspicion might be held.
Podium #26

UROLOGIC COMPLICATIONS REQUIRING INTERVENTION FOLLOWING HIGH-DOSE PELVIC RADIATION FOR CERVICAL CANCER

Haerin Lee Beller, MD, Jacqueline M. Zillioux, David Rapp, Tracey Krupski, Linda Duska, Timothy Showalter, Jennifer Lobo, Noah Schenkman

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Presented By: Haerin Lee Beller, MD

Introduction: Significant variation exists in the reported rates of urologic complications following XRT for cervical cancer, with most literature being over 20 years old. We sought to define the modern incidence of radiation-induced complications requiring procedural intervention (RICP) following high-dose radiotherapy for cervical carcinoma.

Methods: We performed a retrospective chart review of cervical cancer patients undergoing radiotherapy (XRT). Chart review was performed with primary focus on post-XRT urologic complications requiring procedural intervention (Clavien ≥III). Data regarding urological complications was then collected, including Clavien grade, XRT dose, procedure performed, timing of complication, and need for additional procedures. Univariate and multivariate logistic regression models were performed to assess predictive value of demographic and clinical variables for RICP.

Results: A total of 134 patients with FIGO stage 1A2-4B cervical cancer were included in study analysis, with 26 patients experiencing RICP (RICP complication rate of 19.4%). Patient complications and resultant urologic procedures are detailed in Table 1. A total of 37 RICP were identified, representing 1.4 RICP/patient. The most common complications were ureteral stricture and radiation cystitis. The most common procedures performed in the treatment of these complications were ureteral stenting, percutaneous nephrostomy tube placement, and bladder fulguration. Notably, a total of 231 procedures were performed in the treatment of RICP, representing 8.9 procedures/patient. Logistic regression demonstrated active smoking, abdominal surgery following radiation, and radiation dose to be predictors of RICP.

Conclusion: XRT in the treatment of cervical cancer is associated with a high rate of RICP. Further, these complications often require numerous procedures and long-term management given their complexity.
Podium #28

AUTOMATED CLOSED-LOOP STIMULATION TO INHIBIT NEUROGENIC BLADDER OVERACTIVITY*

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Presented By: Dennis Bourbeau, PhD

*2016 Neuromodulation Grant Winner

Introduction: Individuals with spinal cord injury (SCI) usually develop neurogenic detrusor overactivity (NDO), resulting in urinary incontinence, decreased bladder capacity, and reduced quality of life. Electrical stimulation of the genital nerves (GNS) has been shown to inhibit bladder activity to improve bladder capacity and urinary continence in men and women. An automated closed-loop bladder neurostimulation system currently does not exist but could improve efficiency and feasibility of an electrical stimulation approach. We have developed a custom algorithm to identify bladder contractions and trigger stimulation in real time without need for abdominal pressure measurement. The goal of this pilot study was to test the feasibility of automated closed-loop control of GNS using our custom algorithm to identify and inhibit reflex bladder contractions in real time.

Methods: Experiments were conducted in a single session in a urodynamics laboratory in 3 men and 1 woman with SCI and NDO. Each subject completed standard cystometrograms without and with electrical stimulation to the genital nerves. Trial types randomized. Our custom algorithm monitored bladder vesical pressure at 100 samples/second, and controlled when stimulation was turned on and off.

Results: The custom algorithm detected bladder contractions in real time, successfully inhibiting a total of 53 contractions across all 4 subjects. There were 15 false positives, 10 of those occurring in one subject. Four bladder contractions were not successfully identified and/or inhibited, which was associated with bladders near their capacity. It took approximately 4.0±2.6 s for the algorithm to detect the onset of a bladder contraction and trigger stimulation. The algorithm maintained stimulation for approximately 3.5±1.7 s, which was enough to inhibit activity and relieve feelings of urgency. Automated closed-loop stimulation was well-tolerated and subjects reported that algorithm decisions generally matched with their perceptions of bladder activity.

Conclusion: The custom algorithm successfully identified bladder activity with sufficient time to trigger stimulation to reduce urgency and prevent urinary incontinence acutely. Stimulation decisions were made autonomously by the algorithm without human intervention. Closed-loop neuromodulation using only bladder pressure in our custom algorithm may be feasible, but further testing is needed refine and validate this approach to improve bladder control for individuals with SCI and NDO.
Podium #29
DO AMPLITUDES IN STAGE I SACRAL NERVE STIMULATION AFFECT STAGE II IMPLANTATION AND REVISION RATES IN OVERACTIVE BLADDER? A FOLLOW-UP STUDY
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Presented By: Emily Zhang, BS

Introduction: It is unclear what factors predict progression from Stage I to Stage II in sacral nerve stimulation (SNS), as well as durability of the subsequent therapy. This study tests the hypothesis that lower amplitudes during Stage I indicate better electrode placement and are associated with progression to Stage II implantation and lower rates of revision or explant of permanently placed devices.

Methods: All Stage I SNS between 2011 and 2016 for overactive bladder (wet or dry) were retrospectively reviewed for implantation amplitudes and subsequent surgeries. Cases without amplitudes recorded were also assessed. A Stage I amplitude score was calculated by assigning 1 point for each electrode with an amplitude.

Results: A total of 109 surgeries had amplitudes recorded and 141 did not. At Stage I, mean age at was 61 years, mean BMI was 31 kg/m2, and 85% were female. Median follow up was 683 days. In surgeries with Stage I amplitudes, Stage II implantation rate was 89%, while those without amplitudes had a Stage II rate of 84% (p=0.2). Lead revision rates differed significantly whether Stage I amplitudes were recorded or not – an 18% revision rate following surgeries with amplitudes reported versus a 29% revision rate for those without amplitudes (p=0.04). Of surgeries with amplitudes, mean electrode amplitude in those progressing to Stage II was 2.2 V versus 1.9 V in those who did not (p=0.2). Mean Stage I amplitude did not differ between patients who underwent a subsequent lead revision and those who did not (2.4 V and 2.2 V, respectively, p=0.5). There was no association between amplitude score and Stage II implantation (p=0.6) or later revision (0.3).

Conclusion: No associations between Stage I amplitudes and sacral nerve stimulation outcomes were observed. However, tracking amplitude during Stage I was associated with nearly a 38% reduction in lead revisions, likely by facilitating better lead placement.
Podium #30
THREE-YEAR FOLLOWUP RESULTS OF A PROSPECTIVE, MULTICENTER STUDY WITH A WIRELESS IMPLANTABLE TIBIAL NERVE STIMULATOR (RENOVA iStim™ SYSTEM) IN PATIENTS WITH OVERACTIVE BLADDER
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Presented By: Philip van Kerrebroeck, MD, PhD

Introduction: Overactive bladder (OAB) is a highly prevalent condition that often resists maximal conservative therapy. Neuromodulation offers a minimally invasive and reversible treatment option for patients with OAB that failed first-line treatment. Long term safety and performance data on the treatment of OAB with a novel implantable tibial neurostimulation device (the BlueWind Medical RENOVA iStim™ System) are presented.

Methods: A wireless peripheral neurostimulator device (BlueWind Medical Ltd.) was implanted on the posterior tibial nerve approximately 5cm above the medial malleolus in patients with refractory OAB. The implant stimulates the tibial nerve electrically and is wirelessly powered by a wearable external control unit (ECU). The ECU controls the therapeutic parameters and is worn by the patient on the lower leg during specified treatment periods in home settings. A Clinician Programmer is used to remotely set individual stimulation parameters for each patient to optimize therapeutic outcome. Patients with refractory OAB symptoms with or without urinary urgency incontinence were enrolled. The performance and safety of RENOVA-iStim™ system were assessed using a voiding diary, up to 36-months post system activation.

Results: Twenty OAB patients, who were previously implanted with the RENOVA iStim system for a 6-month pilot study, were enrolled in a 3-year, long term, extension study. No SAEs were reported during the extended follow-up. Both, in the per-protocol analysis and in the intent to treat analysis (ITT) 75% (15/20) of the patients demonstrated clinical success in OAB symptoms (defined as: ≥50% reduction in urgent voids or leaks or normalization of voids) up to 3 years compared to baseline. In addition, in the per-protocol population 58% and 75% and in the ITT population 50% and 80% of wet OAB patients showed >50% reduction in the average number of leaks and large leaks at 3 years, respectively.

Conclusion: The BlueWind Medical RENOVA iStim System for the treatment of OAB demonstrates long-term safety as well as sustainable successful performance. A larger multicentre, international study is planned to confirm these promising preliminary data.
Podium #31
IMPROVING PATIENT EXPERIENCE WITH SACRAL NEUROMODULATION: A HUMAN FACTORS APPROACH
Tara Cohen, PhD1, Claire S. Burton, MD2, Sarah Francis, MA1, Deven Patel, MD1, Nabil Othman, MD1, Patrick Lam, MD1, A. Lenore Ackerman, MD, PhD, Karyn Ellber, MD1, Jennifer T. Anger, MD, MPH1
1Cedars Sinai Medical Center, 2University of California Los Angeles
Presented By: Claire S. Burton, MD

Introduction: Sacral neuromodulation (SNM), though minimally invasive, involves an initial testing phase that requires active patient participation. These steps are complex and, if a patient does not receive adequate pre-procedure education, can be difficult to conceptualize. Pre-procedure preparedness has been found to impact post-procedure satisfaction and perceived treatment outcomes. The goal of this study was to conduct a needs assessment of patient preparedness, education, device usability and satisfaction regarding all stages of sacral neuromodulation therapy. Using a human factors approach, we conducted a needs analysis to identify opportunities for improvement in the efficiency and quality of care delivery.

Methods: Candidates for SNM (as determined by one of three FPMRS specialists) were recruited to participate before undergoing staged SNM. Ten patients were observed and their experiences were evaluated at four phases: 1) Date of test implant (Stage 1); 2) 5 days following the test implant procedure; 3) date of permanent implant (Stage 2); 4) 3 months following the permanent implant procedure. Questionnaires administered to patients throughout this process included a preoperative preparedness questionnaire, a post-operative satisfaction/usability survey (close-ended questions), and a post-operative satisfaction/usability survey (open-ended questions).

Results: With respect to pre-operative preparedness, patients generally did not understand the risks of the planned procedures, did not know what to expect postoperatively, and were not satisfied with preoperative materials. Patients were confused on how to adjust the settings for both the test and permanent implant devices. When asked if they would choose the same treatment again and if they would recommend this treatment to a friend/family member, 30% indicated they would not. Every patient reported that their symptoms were at least “a little better” postoperatively. The overall systems usability scale score of the test device was a 55.6 across all patients (a score of 68 is considered average for usability), while the score for the permanent device was a 50.0; both scores are considered “below average” for usability.

Conclusion: This pilot needs analysis demonstrates that there are several opportunities for improvement for patients undergoing sacral neuromodulation. These findings highlight the opportunities for a multi-faceted intervention, including the development of an informational sheet/video, an in-service training for all PACU nurses, and updated discharge instructions.
Podium #32
PUEDNAL NEUROMODULATION FOR PELVIC PAIN: OPTIMIZING PATIENT SELECTION
Iryna Crescenze, Giulia Lane, MD, Priyanka Gupta
University of Michigan
Presented By: Iryna Crescenze, MD

Introduction: Pudendal neuralgia is characterized by pelvic pain in the pudendal nerve distribution that is exacerbated by sitting, improved with pudendal nerve blocks. Patients may present with concomitant bladder and bowel symptoms. There is a lack of evidence-based treatment options but recent studies have proposed the utility of pudendal neuromodulation in this population. The aim of this study was to optimize patient selection for pudendal neuromodulation to improve overall outcomes.

Methods: Patients undergoing pudendal neuromodulation for indication of refractory pelvic pain and voiding dysfunction from 8/1/2016 to 8/1/2018 at a single institution were identified through retrospective review of electronic medical records. Clinical, demographic, and outcome data was extracted and analyzed. Patients undergoing pudendal neuromodulation for voiding symptoms only were excluded. Prior to proceeding with pudendal neuromodulation diagnoses of pudendal neuralgia was confirmed by assessing for consistent improvement with pudendal blocks. All patients had at least 2 blocks. All patients underwent staged implantation.

Results: Ten patients with chronic pelvic pain and overactive bladder symptoms had a staged trial of pudendal neuromodulation. All patients were women with an average age of 55.4 +/- 9.7 years and an average duration of symptoms was 6.6 +/- 5.19 years. Sixty percent suffered from depression, 40% had fibromyalgia, and 100% had bowel dysfunction (constipation and/or fecal incontinence). All patient had tried and failed multiple medications and pelvic floor physical therapy. All patients had a positive response to pudendal blocks with 80% having at least 4 blocks. Of the 10 patients, 9 had a successful stage I trial with >50% improvement in pain symptoms and proceeded to stage II. At first follow up AUA symptom scores improved from 14.1 +/- 9.44 to 5.7 +/- 2.0 (p=0.037), and quality of life from 4.0 +/- 1.5 to 1.6 +/- 2.1 (p=0.026). At an average of 8.1 +/- 4.9 months of follow up 7/9 were satisfied with the outcomes. Of the 2 patients dissatisfied one went on to have a cystectomy and one had the device removed.

Conclusion: Consistent positive response to pudendal nerve blocks translates to excellent response rates to pudendal neuromodulation with a 90% conversion rate to permanent implant for indication of pain. This cohort also experienced significant improvement in voiding symptoms with continued efficacy during the follow-up period.
Podium #33
PROPHYLACTIC MIDURETHRAL SLINGS AT THE TIME OF PELVIC ORGAN PROLAPSE REPAIR SURGERY TO PREVENT DE-NOVO STRESS URINARY INCONTINENCE- A NEED TO REAPPRAISE?
Kai B. Dallas, MD1, Lisa Rogo-Gupta2, Raveen Syan3, Ekene Enemchukwu1, Christopher S. Elliott1, 3
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Presented By: Kai B. Dallas, MD

Introduction: Prophylactic sling placement may prevent de-novo stress urinary incontinence (SUI) in women undergoing pelvic organ prolapse (POP) surgery. This strategy, however, comes at the potential cost of overtreatment or sling complications. We aimed to compare future surgery rates in a population based cohort of women undergoing vaginal based POP surgery with and without a concomitant SUI procedure.

Methods: All women undergoing POP repair in California from 2005-2011 were identified from the Office of Statewide Health Planning and Development databases. Rates of repeat surgeries in those with and without concomitant SUI repairs were compared. Multivariate mixed effects logistic regression models were constructed to theoretically compare each patient's individualized risk of requiring a future SUI procedure if one was not performed at the time of POP repair, compared to a surgical complication if a prophylactic SUI procedure was performed up front.

Results: Of the 81,314 women studied, 38,456 underwent a concomitant SUI procedure and 42,858 did not. Those undergoing concomitant SUI surgery at the time of POP repair were more likely to undergo surgery for a complication than women undergoing future SUI surgery after foregoing an initial SUI repair (3.5% versus 3.0%, p<0.001). Multivariate modeling revealed that most women undergoing POP repair would have a higher risk of requiring SUI revision surgery if a concomitant SUI operation was performed (60%) as compared to their risk of needing a future SUI surgery if a concomitant SUI procedure was eschewed (40%) (Figure 1). We developed a free interactive application where individual characteristics can be adjusted to allow a reader to explore which patient characteristics are at higher risk for failure with either strategy (https://stanfordfpmrs.shinyapps.io/app1/).

Conclusion: Women who undergo POP repair without concurrent SUI repair have a lower risk of future surgery compared to those who have POP and SUI repairs performed concomitantly. These results are contrary to the popular belief that prophylactic sling surgery at the time of a POP repair might decreases the risk of future surgery.
Podium #34
STRESS INCONTINENCE SURGERY IS NOT ASSOCIATED WITH PELVIC MALIGNANCY: THE RESULTS OF A LARGE POPULATION-BASED STUDY
Humberto R. Vigil, MD, BSc, FRCSC¹, Christopher Wallis, PhD, MD¹, Joseph LaBossiere, MSc, MD, FRCSC¹,², Sender Herschorn, MDCM, FRCSC¹, Lesley Carr, MD, FRCSC¹
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Presented By: Humberto R. Vigil, MD, BSc, FRCSC

Introduction: Stress incontinence surgery is common and was revolutionized by the midurethral sling. In the wake of regulatory warnings, unsubstantiated claims regarding mesh have permeated public discourse. Despite no supporting evidence, concerns continue to exist regarding a link between mesh and malignancy. We sought to evaluate the association between stress incontinence surgery, including transvaginal mesh, and carcinogenesis in a large population-based cohort.

Methods: A retrospective cohort of adult women who underwent stress incontinence surgery from 1994-2016 in Ontario was captured from the Institute for Clinical Evaluation Sciences database. Women were identified using physician billing codes in Ontario for the different stress incontinence procedures. The primary outcome of interest was the diagnosis of pelvic cancers. These were defined using ICD-9 and ICD-10 billing codes. Pelvic cancers included urological and gynecological malignancies. The standardized incidence rate (SIR) was calculated as the ratio of the observed number of pelvic cancer cases divided by the age-stratified expected number of pelvic cancer cases based on the Ontario population. Subgroup analyses were performed for individual malignancies and midurethral sling patients. Multivariable logistic regression modeling examined for risk factors of pelvic malignancy.

Results: A total of 120,999 women underwent a procedure for stress incontinence in the form of urethropexy, combined abdominal/vaginal sling, bulking agent or midurethral sling in Ontario during the study period. Midurethral sling accounted for 63% of procedures performed. Median follow up was 9.3 years (IQR 5.4—14.4). Expected cancer cases over a total exposure time of 1,221,668 person-years was 1,146. 935 pelvic cancers were observed with a frequency of 0.77%. The SIR for any cancer diagnosis compared to the general population of Ontario was 0.816, 95% CI 0.764—0.870. In patients who underwent a midurethral sling only, the expected number of cancer cases over an exposure time of 562,457 person-years was 576. 479 pelvic cancers were observed with an SIR of 0.831, 95% CI 0.758—0.909. On multivariable analysis, midurethral sling was not associated with an increased risk of pelvic cancer when compared to the other stress incontinence procedures.

Conclusion: Stress incontinence surgery including the transvaginal implantation of mesh was not associated with an increased risk of pelvic malignancy in a large population-based cohort.
OVERUSE OF SPECIALTY CARE FOR WOMEN WITH URINARY INCONTINENCE

Claire S. Burton, MD¹, Christopher Gonzalez-Alabastro¹, Eunice Choi², Pooja Parameshwar², Gabriela Gonzalez¹, Catherine Bresee, MS², Karyn Eilber, MD², A. Lenore Ackerman, MD, PhD², Jennifer T. Anger, MD, MPH²

¹University of California Los Angeles, ²Cedars Sinai Medical Center

Presented By: Claire S. Burton, MD

Introduction: The burden of urinary incontinence (UI) has significant medical and financial implications on the healthcare system. Although specialists are skilled in management of UI refractory to conservative therapy, patients are often referred prior to evaluation or initiation of conservative measures. Additionally, little is known about how provider gender impacts care for UI. We sought to measure the quality of UI care provided to patients in a single health care system prior to referral to a Female Pelvic Medicine and Reconstructive Surgery (FPMRS) specialist.

Methods: A sample of 100 women consecutively referred for new or worsening bothersome UI to a single-center FPMRS group practice between March 2017 and May 2018 was identified. Using a set of set of 12 quality-of-care indicators (QIs) previously described, we measured the quality of care provided by referring providers in the 12-month period prior to the first visit with an FPMRS specialist. QIs incorporated elements from the patient history, physical examination, urinalysis, recommended behavioral interventions, and pharmacologic treatment. We also sought to compare quality of care by provider gender.

Results: Fifty-three percent of patients were diagnosed with SUI and 34% were diagnosed with urge urinary incontinence (UUI) by their primary care provider. No attempt was made at diagnosis of type of incontinence in 31%. Overall, there was a paucity of care provided at the primary care level, with less than half of the patients receiving the recommended care in eight of 12 QIs (Table 1). Overall, providers performed 40.8% of the recommended primary level care, with male providers performing 33.2% and female providers performing 44.9% (p=0.01). Many patients had no work-up (detailed history, exam, or urinalysis) prior to referral. Ten percent of patients were referred based only on an e-mail request. Conclusion: We found low rates of conservative management initiation prior to specialist referral for women with UI, with male providers performing significantly worse than female providers. While this may be due to other factors such as patient requests and the presence of in-house specialists, improvement of UI care at the primary care level could significantly reduce costs of care and preserve outcomes, while allowing specialists to provide tertiary care to complex and refractory patients.

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<th>Table 1: Compliance with QIs and comparison of Sex of Primary Care Provider</th>
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<td>General Care Score (Mean / Median)</td>
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<td>Prolonged History and Duration</td>
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<td>SUI vs UUI symptoms</td>
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<td>History of prior pharmacologic treatment</td>
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<td>Assessment of Severity</td>
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<td>Pelvic Exam</td>
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<td>Pelvic Floor Exercises</td>
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<td>Weight Loss Recommended</td>
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<td>Anticholinergics Not Prescribed</td>
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<td>Treatment response documented at future visit</td>
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<td>Behavior modification recommended</td>
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<tr>
<td>Anticholinergic initiated or dose adjusted</td>
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<td>Total Score (Mean / Median)</td>
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Podium #36
EFFICACY OF SELF-REPORTED DATABASES
Ashley Caron, BS¹, Colby Souders, MD¹, Ndidiwamaka Obi², Khasiah Clark², Karyn Eilber, MD¹, Jennifer Anger, MD, MPH¹
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Presented By: Ashley Caron, BS

Introduction: The Manufacture And User Facility Device Experience (MAUDE) Database is a public information portal published by the Food and Drug Administration (FDA) conveying medical device-induced adverse events and complications. The site allows for mandatory and voluntary reporters to submit device reports regarding intraoperative problems and adverse events associated with the device. These reports can be updated by the submitter. The MAUDE database has been cited in peer reviewed articles and news media regarding the safety of certain devices and is used by physicians to determine adverse events that may not yet be reported in medical literature. According to their public health notification, from January 2008 through December 2010, the FDA received 2,874 reports related to transvaginal mesh (mesh) for pelvic organ prolapse (POP) and stress urinary incontinence (SUI). This was followed by mass media attention and class action lawsuits. Considering its purpose advising on the safety of medical devices, we aimed to evaluate the reliability of the MAUDE database using longitudinal analysis.

Methods: In 2014, data were collected from a 1% sample of reports made to the FDA from 2000-2014 regarding mesh for POP and SUI. The data included manufacturer, device, reporter, complainant diagnosis, and adverse events. The same 1% sample was reviewed again using the same methods in June of 2018 and edits made to each entry were analyzed.

Results: Of the total entries reviewed, 18.36% had been altered at least once in a four-year span. One entry involved change in manufacturer while three changed the reported device. The remaining changes consisted of adding more adverse events to existing entries. 47% of entries were reported by manufacturers and company representatives while 41% were reported by attorneys. Only 2% of entries were reported by patients and 10% by physicians.

Conclusion: Nearly 20% of entries submitted to the MAUDE database were altered over four years. Moreover, a sizeable percentage of the data is reported by attorneys, rather than physicians and patients, possibly as part of litigation against transvaginal mesh manufacturers. While intended to report device-related complications, the MAUDE database should be considered with caution and not relied upon as the sole source of evidence to confirm or reject a device.
Podium #37
LONG-TERM OUTCOMES OF AUTOLOGOUS PUBOVAGINAL SLING FOR STRESS URINARY INCONTINENCE

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\textsuperscript{1}Virginia Mason Medical Center, \textsuperscript{2}Stony Brook University, \textsuperscript{3}Virginia Mason Medical Cetner

Presented By: Katherine Amin, MD

Introduction: While the MUS remains the most widely utilized anti-incontinence surgery, forces intrinsic and external to the technique have re-ignited the role of the autologous fascial pubovaginal sling (PVS). Historically, PVS was reserved for challenging cases such as patients with intrinsic sphincter deficiency (ISD), recurrent SUI, or history of mesh complications. PVS is also a viable option for patients who prefer a biologic alternative to synthetic slings. This report provides long-term follow up on a classic surgical procedure for SUI.

Methods: A retrospective review of our prospectively-collected database was performed for patients who underwent PVS (using autologous rectus fascia or autologous fascia lata) for SUI by four FPMRS urologists. Follow-up evaluation was done by annual mailed questionnaires, including patient-perceived percent-improvement, Urogenital Distress Inventory Short Form (UDI-6), and Patient Global Impression of Improvement (PGI-I). Chart review was performed to assess all post-operative complications. Success was defined as $\geq 70\%$ improvement from baseline or

Results: We identified 181 patients who underwent PVS from 2000-2016, of which 92 patients had questionnaire data with a minimum follow up of 12 months. Overall, mean age was 59.8 years ($\pm 13.5$). 76.0\% (114/150) had previous surgery for SUI, and 73.9\% (118/161) had ISD, defined as Valsalva leak point pressure (VLPP)

Conclusion: Current discussions around anti-incontinence surgery should include thorough counseling and careful patient education about each of the available options with surgeons striving to provide their patients with the safest and most appropriate option. This data provides uniquely robust long-term follow up regarding safety and outcomes of the PVS, a technique that plays an important role in management of SUI.
**Podium #38**

**DO WE NEED GENDER SPECIFIC GUIDELINES?: INCIDENCE OF SIGNIFICANT FINDINGS OF MICROHEMATURIA WORKUP IN WOMEN**

Daniel E. Rabinowitz¹,², Andrew Wood¹,², Allison Marziliano¹, Andre Perez-Orozco¹, Michael Diefenbach¹, Simon Hall¹, Justin Han¹, Allison Polland²

¹Northwell Health, ²Maimonides Medical Center

Presented By: Daniel E. Rabinowitz, MD

**Introduction:** The American Urological Association (AUA) guidelines recommend extensive workup for asymptomatic microhematuria (AMH) for all patients regardless of gender. They do not account for gender-specific risk of urologic malignancy or other causes of red blood cells in the urine, such as vaginal atrophy in women. More recently the American Urogynecological Society (AUGS) and the American College of Obstetricians and Gynecologists (ACOG) published a committee opinion recommending avoiding workup in never-smoking women aged 35–50 years with less than 25 red blood cells per high-power field (RBC/HPF). The purpose of this study was to apply the AUGS/ACOG recommendations to a large cohort of AMH patients and assess the diagnostic accuracy as compared to the AUA guidelines.

**Methods:** A retrospective institutional review of female patients who underwent AMH evaluation from 2012 - 2015 was conducted. Patients with infection were excluded. Chi-squared test was performed to assess for association between age, smoking, RBC/HPF and positive workup. The number of patients who would have avoided workup following the AUGS/ACOG recommendations was determined, and then these were considered workup-negative in calculation of the sensitivity, specificity, positive- and negative-predictive value and accuracy of the AUGS/ACOG recommendations.

**Results:** A total of 620 women with AMH were included in the cohort. Average age was 57 years. Cystoscopy and CT were negative in 99.2% and 91.6% of patients, respectively. In 91.5% of patients no cause for AMH was identified. Two malignancies (one low grade papillary noninvasive upper tract urothelial carcinoma on CT and one low grade Ta bladder transitional cell carcinoma on cystoscopy) were found, both in patients for whom AUGS/ACOG recommends workup. On chi-squared, age >50 was significantly associated with greater number of RBC/HPF (p=0.004). Following the AUGS/ACOG recommendations would have avoided workup in 126 women. With regards to non-malignant findings, the AUGS/ACOG workup had a sensitivity of 84.1% and specificity of 95.1% with a negative predictive value of 92.1%, positive predictive value of 89.8% and accuracy of 91.35, as compared to the gold-standard of AUA guidelines workup.

**Conclusion:** Applying the AUGS/ACOG recommendations to this cohort would not have resulted in missed malignant diagnoses. Although further research is needed, urologists should consider development of gender-specific guidelines.
NUMEROUS SOCIOECONOMIC AND ETHNIC FACTORS PREDICT RECEIVING ADVANCED OAB THERAPIES IN A COMMERCIALLY INSURED POPULATION

Raveen Syan, Amy Zhang, Ekene Enemchukwu
Stanford University, Department of Urology
Presented By: Raveen Syan, MD

Introduction: Studies suggest racial disparities exist among patients with overactive bladder (OAB). Minority Medicare populations have been shown to be less likely to undergo sacral neuromodulation therapy (SNS) than White patients, and patients of lower income are less likely to seek care for OAB symptoms. Our study aim was to determine whether ethnic and socioeconomic disparities exist for any of the third line therapies amongst commercially insured patients.

Methods: We queried Optum, a national administrative health and pharmacy claims database, between the years of 2003-2016. All patients with non-neurogenic OAB were identified using ICD9 and ICD10 diagnosis codes. Patient demographics and treatment interventions were collected, including oral medication therapies (anticholinergic and beta3 agonists), and advanced therapies (OnabotulinumtoxinA (BTX), SNS, and peripheral tibial nerve stimulation (PTNS)). Multivariate analysis was performed.

Results: 3,501,010 patients with OAB were identified. Of these, 630,495 (18%) were treated with medical therapies. Oral therapy use was lowest amongst Asians (12% versus 17-20%, p<0.05), though advanced therapy use was low amongst all ethnicities (0.7%). Regarding advanced therapies, Asians were the most likely group to undergo BTX, and least likely to undergo PTNS compared to all other races/ethnicities (p<0.05). Whites and Blacks had similar rates of use of SNS and BTX, which was higher rates of SNS use and lower rates of use of BTX compared to Hispanics. Occupation status was known in 629,909 patients. On multivariate analysis of these patients, predictors of advanced OAB therapy use were female gender (OR 2.08), age <65 (OR 1.25), prior use of oral OAB medications (2.16), being of a region other than Northeast US (Table 1), and being a homemaker/retired (OR 1.15) or white collar/health/civil (OR 1.10) compared to manager/owner/professional (p<0.05). Patients of a minority race/ethnicity (OR 0.86) and having a high school diploma (OR 0.83) were less likely to receive advanced OAB therapies (p<0.05).

Conclusion: In a commercially insured population, both racial and socioeconomic differences exist in receiving advanced OAB therapies, including age, gender, race/ethnicity, education level, occupation level and region. Further studies are needed to explore these treatment patterns.

Table 1: Multivariate Analysis of Predictors of Undergoing Advanced OAB Therapy

<table>
<thead>
<tr>
<th>Variable</th>
<th>Odds Ratio</th>
<th>95% CI</th>
<th>P value</th>
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<tr>
<td>Gender</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>2.08</td>
<td>[1.93, 2.24]</td>
<td>&lt;0.01</td>
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<tr>
<td>Female</td>
<td>1.00</td>
<td>[0.99, 1.00]</td>
<td>0.99</td>
</tr>
<tr>
<td>Age</td>
<td></td>
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<tr>
<td>&lt;=65</td>
<td>1.25</td>
<td>[1.17, 1.33]</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>&gt;65</td>
<td>1.00</td>
<td>[0.99, 1.01]</td>
<td>0.99</td>
</tr>
<tr>
<td>Race</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>0.86</td>
<td>[0.79, 0.89]</td>
<td>&lt;0.01</td>
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<tr>
<td>Minority</td>
<td>0.96</td>
<td>[0.89, 1.10]</td>
<td>0.50</td>
</tr>
<tr>
<td>Region</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Northeast</td>
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<td>[1.03, 1.39]</td>
<td>0.01</td>
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<td>Midwest vs. Northeast</td>
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<td>[1.01, 1.25]</td>
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<td>South</td>
<td>1.15</td>
<td>[1.02, 1.30]</td>
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</tr>
<tr>
<td>West</td>
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<td>[1.21, 1.51]</td>
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<tr>
<td>Education</td>
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<td>Bachelor Degree or more</td>
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<td>[1.01, 1.18]</td>
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<tr>
<td>High School Diploma</td>
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<td>[0.93, 1.12]</td>
<td>0.86</td>
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<td>&lt;12th Grade</td>
<td>0.83</td>
<td>[0.73, 0.95]</td>
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<td>&lt;Bachelor Degree</td>
<td>0.94</td>
<td>[0.86, 1.03]</td>
<td>0.13</td>
</tr>
<tr>
<td>Use of Oral OAB Medications</td>
<td>2.16</td>
<td>[2.05, 2.29]</td>
<td>&lt;0.01</td>
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</tbody>
</table>
Podium #40
TRANSVAGINAL MESH LITIGATION HAS SIGNIFICANT GEOGRAPHIC VARIATION
Colby Souders, MD1, Lynn McClelland, JD, MPH2, Ashley Caron1, Mohanad Alazzez3, Brian Zukotynski3, A. Lenore Ackerman, MD, PhD1, Karyn Eilber, MD1, Jennifer Anger, MD, MPH1
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Presented By: Colby P. Souders, MD

Introduction: Transvaginal mesh is at the center one of America’s largest mass torts in recent history, causing several manufacturers to close their doors. Between 2011 and 2014, the rate at which lawsuit filings increased was anywhere from 2500-9500%. Our previous study found that almost 74,000 lawsuits were filed between 2000-2014. The purpose of this work is to characterize the current legal climate for mesh considering the decrease in mesh use, the decrease in the number of mesh products on the market, and ongoing media attention.

Methods: The Bloomberg Law database was queried by a legal librarian for product liability claims against mesh manufacturers, including Boston Scientific Corporation, Ethicon (Johnson Johnson), American Medical Systems (AMS/Endo), and Coloplast from 2014 through June 2018. The search results were then culled by the librarian to eliminate cases that were not related to mesh. A 1% random sample was chosen and all legal documents available were reviewed. Cases that were class action suits, had limited or no clinical data, were duplicates, or were not related to transvaginal mesh, were eliminated.

Results: 60,588 cases were filed. From a random sample of 606 cases, 55 cases were eliminated, and 551 cases were reviewed. 49% of the cases involved transobturator slings. 17% involved retropubic slings and 17% involved prolapse mesh. The average number of years between surgery and filing dates was 5.4 years. 19.2% of patients had >1 operation. The average time until filing with >1 operation was 3.9 years. 35.2% of patients had >2 types of mesh. Lawsuits adjusted to the population were greatest in the southern region of the U.S. (Figure 1)

Conclusion: The time interval from surgery to filing of approximately 5 years was similar to our work analyzing cases from 2000-2014. Not surprisingly, women who required mesh revision surgery filed lawsuits more quickly than those who had only one surgery. Interestingly, there was significant geographic variation in rate of mesh claim filings per woman when analyzed by U.S. regions. The number of cases related to slings is greater than the number of cases with prolapse mesh, likely due to differential in rate of use of each of these products.
OUTCOMES OF MIDURETHRAL SLINGS IN THE OBESE WOMAN

James E. Pilkington, MD1, Adnan Fazili1, Clifton F. Friot II, PhD2, Alex Gomelsky, MD1
1LSUHSC-Shreveport, 2LSU-Shreveport School of Allied Health

Presented By: James E. Pilkington, MD

Introduction: Obesity is a risk factor for recurrence of stress urinary incontinence (SUI) after definitive midurethral sling (MUS) surgery. Despite these findings, most obese women still derive benefit and complication rates are similar to non-obese women. The CDC groups obesity into three classes [Class I (body mass index (BMI) 30-35), Class II (BMI 35-40), and Class III (BMI>40)]. As outcomes in obese women are largely absent, we aim to present our MUS outcomes in this population.

Methods: This is an IRB-approved, retrospective chart review of women who underwent top-down retropubic (RP) and outside-in transobturator (TO) MUS. Women who had previous anti-incontinence surgery and those undergoing concomitant surgery were included. Pre- and postoperative assessment included routine examinations and validated quality of life (QoL) questionnaires. “SUI Cure” was defined as no subjective or objective SUI, and no additional procedures needed to achieve continence.

Results: We identified 575 women with BMI≥30 and follow-up≥12 months (Mean=41 months). Of these, 405(70%) had RP MUS. Mean age, parity, baseline pad use, and preoperative QoL indices were not statistically different between RP and TO groups. The cure rate for the RP group was 65% [Class I (69%), Class II (63%), Class III (57%)] and 58% for the TO group [Class I (62%), Class II (58%), Class III (45%)]. In women undergoing sling only, 83/142 (58%) in the RP group were cured [Class I (63%), Class II (52%), Class III (55%)] and 31/57 (54%) in the TO group [Class I (62%), Class II (50%), Class III (42%)]. Cure rates waned over longer follow-up for both groups. Perioperative complications were infrequent, with most being Clavien grade ≤3 and associated with concomitant surgery. Mean improvement in all QoL indices was seen in all groups, irrespective of SUI cure.

Conclusion: Our results indicate that SUI cure rates after MUS in the obese population are lower than those traditionally-quoted in the non-obese. Longer periods of follow-up, increasing class of obesity, and TO MUS were risk factors for recurrent or persistent SUI. MUS surgery in obese women is safe and overall satisfaction is high. While significant obesity alone should not be a deterrent in performing MUS, appropriate preoperative counseling is strongly recommended.

Podium #42 - WITHDRAWN
Podium #43
AN ALTERNATIVE INJECTION PARADIGM FOR THE TREATMENT OF OVERACTIVE BLADDER WITH ONABOTULINUMTOXINA IS ASSOCIATED WITH A LOW INCIDENCE OF CLEAN INTERMITTENT CATHETERIZATION IN FEMALE PATIENTS
Scott A. MacDiarmid1, David Glazier2, Andrew Shapiro3, Kurt McCammon4, Rebecca McCrery5, Barry Jarnagin6, Amin Boroujerdi7, Zane Bai7, Gina Gao7, Anand Patel7
1Alliance Urology Specialists, 2Virginia Urology, 3Chesapeake Urology, 4Eastern Virginia Medical School, 5Adult Pediatric Urology Urogynecology, PC, 6Center For Pelvic Health, 7Allergan, Inc.
Presented By: Scott A. MacDiarmid, MD

Introduction: OnabotulinumtoxinA (onabotA) 100U significantly reduced urinary incontinence (UI) and improved quality of life in patients with overactive bladder (OAB) in four phase 3 and 4 trials in which onabotA was administered as 20 evenly spaced intradetrusor injections avoiding the trigone. Pooled incidence of clean intermittent catheterization (CIC) in females in phase 3/4 studies was 5.2%. Subsequently, it was hypothesized that injecting solely into the peri-trigonal region including the trigone could be effective and have a lower CIC incidence for retention compared with the standard injection paradigm. An alternative injection paradigm of 10 injections into the peri-trigonal region including the trigone was examined (Figure).

Methods: This multicenter, randomized, double-blind, placebo-controlled trial (Clinicaltrials.gov, NCT03052764) included adults with OAB and UI inadequately managed with an anticholinergic. Eligibility criteria were identical to phase 3/4 studies. Patients were randomized 2:1 to onabotA 100U or placebo, administered as 2 trigonal and 8 peri-trigonal injections. This analysis included only females (96% of population). The efficacy analysis used the modified intent-to-treat (mITT) population (≥1 baseline efficacy assessment and a post-baseline visit); the safety analysis included all patients who received study treatment.

Results: 112/115 randomized female patients were included in the mITT analysis. Baseline UI values (episodes/day) were 6.02 in onabotA-treated (n=73) and 6.34 in placebo-treated (n=39) patients. Significantly higher least squares mean reductions from baseline in UI were observed in onabotA-treated versus placebo-treated patients at week 12 (-3.07 versus -0.15 episodes/day; p<0.0001). Proportions of patients with 100% reduction in UI episodes/day at week 12 were 14.3% and 2.7%, respectively. CIC incidences in the first 12 weeks were 2.7% and 0%, respectively. Adverse events were predominantly mild/moderate; urinary tract infection was most common. Safety results were consistent with the onabotA OAB indication.

Conclusion: Efficacy of the new onabotA injection paradigm is similar to that seen in previous phase 3/4 trials. This procedure is expected to be quicker. Although not a head-to-head study, the CIC incidence in this female population was lower than that reported in pooled phase 3/4 studies, possibly because the injections were more targeted to afferent trigonal nerves, thus decreasing efferent motor effects that could result in reduced voiding efficiency and the need to perform CIC.
Podium #44
REAL WORLD PERFORMANCE OF SNM AND ONABOTULINUMTOXIN A FOR OAB: FOCUS ON SAFETY AND COST
Mitali Kini¹, J. Quentin Clemens², Dominique Thomas¹, Tianyi Sun¹, Art Sedrakyan¹
¹Weill Cornell Medical College, ²Michigan Medicine
Presented By: Mitali Kini, BS

Introduction: Overactive bladder (OAB) is a common and debilitating condition affecting 17% of women and 15.1% of men. We aimed to determine the real-world safety and cost of third line overactive bladder (OAB) therapies, onabotulinumtoxinA and sacral neuromodulation (SNM).

Methods: We performed an all-inclusive, population-based cohort study on third line therapies for OAB (SNM or onabotulinumtoxinA) utilizing the statewide surgical data captured in the New York Statewide Planning and Research Cooperative System (SPARCS). Main outcomes measures were 30-day safety events. Propensity score matching was used to control for confounding factors. Comparative analyses on safety events conducted.

Results: Our cohort included 3,935 patients with 2,170 who underwent SNM and 1,765 who had onabotulinumtoxinA use from January 1, 2012 through December 31, 2016. Average age was 61.5 with a standard deviation of 16.6 and 79.2% were females. SNM implantation led to 16.6% re-interventions within one year and 28.8% at three years. In this comparative analysis, patients who underwent onabotulinumtoxinA therapy had a higher risk of experiencing urinary tract infection (RR: 2.67 [1.27-5.60], P<0.01), urinary retention (RR: 2.54 [1.34-4.82], P<0.01) and higher risk of ER visit (RR: 1.52 [1.17-1.97], P<0.01) when compared to SNM. The overall charges of onabotulinumtoxinA were lower when compared to SNM device (1-year: $8,609 vs $46,339, P<0.01; 3-year: $11,100 vs $48,482, P<0.01).

Conclusion: Real world performance of both third line therapies was concerning. SNM implantation led to frequent re-interventions at one and three years and was more expensive compared to onabotulinumtoxinA injection. However, OnabotulinumtoxinA patients had higher rate of complications when compared to SNM. A registry is urgently needed to generate better performance and comparative data for patient and physician decision making.
Podium #45
PREVALENCE OF LOWER URINARY TRACT SYMPTOMS (LUTS) IN YOUNG NULLIGRAVID WOMEN
Casey Kowalik¹, Adam Daily², Sophia D Goodridge², Siobhan Hartigan², Melissa R Kaufman², Roger R Dmochowski², W Stuart Reynolds²
¹Kansas University Medical Center, ²Vanderbilt University Medical Center
Presented By: Casey Kowalik, MD

Introduction: Preservation of bladder health and prevention of LUTS in women has been highlighted with the establishment of the PLUS (Prevention of Lower Urinary Tract Symptoms) Research Consortium in 2015. Lower urinary tract symptoms (LUTS) were once considered to primarily affect older, multiparous women, however contemporary indicates that younger women are also affected in significant numbers. Our aim was to identify the prevalence of LUTS and degree of bother in a community sample of young, nulligravid women.

Methods: Women aged 18 years and older were recruited through a national registry of research volunteers, and completed validated questionnaires assessing LUTS and level of bother (ICIQ_FLUTS). Women were excluded from analysis if >25 years old, currently pregnant, or had a history of prior pregnancy, cystectomy, or neurologic disease, including spinal cord injury, stroke, and multiple sclerosis. Analyses determined the prevalence of symptoms reported to occur at least sometimes and degree of bother (scale: 0-10).

Results: Nine hundred and sixty-four women met study criteria (mean age 22.6 ±2.0) and 295 (30.6%) subjects reported any frequency or amount of urinary incontinence with 89 (9.2%) leaking at least 2-3 times per week. Of those women who leak, the average bother was 5.83 ± 2.7. Nocturia >1 was present in 110 (11.4%) of women who reported an average bother score of 5.1±2.5. Voiding symptoms including delay before urination, straining to urinate, and intermittency was reported by 156 (16.2%), 46 (4.8%), and 89 (9.2%), respectively.

Conclusion: The prevalence of incontinence in 18-25 years old, nulligravid women was higher than expected. The prevalence of voiding symptoms was low, but not inconsequential. LUTS in this cohort of women without typical risk factors (age, parity) warrants further study as to the cause. Therapy aimed at prevention of LUTS may best serve patients by targeting populations much earlier than traditionally considered.
Podium #46
INCREASING THERAPY EFFECT OVER TWELVE WEEKS WITH THE NURO™ PERCUTANEOUS TIBIAL NEUROMODULATION SYSTEM IN DRUG NAÏVE PATIENTS WITH OVERACTIVE BLADDER SYNDROME (OAB)
Kathleen C. Kobashi1, Peter Sand2, Eric Margolis3, Steven Siegel8, Salil Khandwala5, Diane Newman6, Victor Nitti7, Scott A. MacDiarmid8, Anne Miller9, Fangyu Kan9
1Virginia Mason Medical Center, Seattle, WA, 2NorthShore University Health-System, Evanston, IL, 3Urologic Research and Consulting LLC, Englewood, NJ, 4Metro Urology, Woodbury, MN, 5Advanced Urogynecology of Michigan PC, Dearborn, MI, 6Division of Urology, Penn Medicine, University of Pennsylvania, Philadelphia, PA, 7NYU School of Medicine, New York, NY, 8Alliance Urology Specialists, Greensboro, NC, 9Medtronic, Minneapolis, MN
Presented By: Kathleen C. Kobashi, MD, FACS

Introduction: This prospective, multicenter, single arm study evaluated changes from baseline in OAB symptoms as measured by urine voiding diaries and patient reported outcomes through 12 weeks of percutaneous tibial neuromodulation (PTNM) therapy in drug naïve subjects.

Methods: Qualified subjects underwent 12 PTNM therapy sessions, administered weekly using the NURO system. Subjects completed urinary voiding diaries (3-day) to assess change in voiding symptoms from baseline through 12 weeks. Voiding diary analyses were conducted for subjects with data at baseline and follow-up study visits (PTNM sessions 1, 4, 8, and 12). Quality of life (QOL) was assessed using the Overactive Bladder Symptom QOL Questionnaire (OAB-q) at the same visits. A repeated measures analysis was used to assess session effect on symptom reduction and QOL improvement. P-values for pairwise comparisons were obtained from the Bonferroni t-test after adjusting for multiple comparisons.

Results: One hundred and fifty-four subjects enrolled in the study, of which 120 qualified and received PTNM therapy. Over 12 weeks of therapy, there was a statistically significant session effect on reduction in urinary urge incontinence (UUI) episodes per day from baseline (p<0.0001), see Figure 1. In pairwise comparisons, there was a statistically significant increase of therapy effect on UUI reduction from PTNM sessions 1 to 4 and from sessions 4 to 8 (p<0.001 for both). There was a further trend of improvement in therapy efficacy from session 8 to 12, even though the further decrease in UUI episodes per day did not represent a statistically significant change between treatments 8 and 12. Over 12 weeks, there was a statistically significant session effect on improvement in total health-related QoL (HRQL) and subscales of Coping, Concern, Sleep, and Social; as well as symptom bother (all p<0.0001). Each measure (except Social) had significantly greater improvement at sessions 4, 8, and 12 compared to the previous visit (all p<0.05). Of the subjects who were responders at 12 weeks, 22.1% first responded at PTNM session 8 or later.

Conclusion: Both efficacy and quality of life continue to improve as treatment progresses through 12 weeks. These results indicate a decision on patient benefit from the therapy should not be made until 12 therapy sessions are completed.

Figure 1
Podium #47

FLUID RESTRICTION AND URINARY SYMPTOMS IN PATIENTS WITH MULTIPLE SCLEROSIS

Justina Tam, Alice Cheung, Jason Kim, Steven Weissbart
Stony Brook Medicine, Department of Urology
Presented By: Alice Cheung

Introduction: Lower urinary tract symptoms (LUTS) vary considerably 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 potentially contribute to urinary symptoms in these patients. The aim of our study is to investigate if fluid restriction 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. Study participants were administered the following questionnaires: AUA symptom score (AUA-SS), Medical, Epidemiological, and Social Aspects of Aging (MESA), Neurogenic Bowel Dysfunction score (NBD), and questionnaire based voiding diary (QVD). The Expanded disability status scale (EDSS) was calculated based on physical exam.

Results: There were 200 participants in the study. Mean age was 50 years (SD=13.3), 73% were female, and 27% had severe LUTS (AUA-SS>19). Sixty-one (30%) subjects reported restricting fluid intake to control urinary symptoms. Median total fluid intake was 2129ml (IQR 1982ml). Fluid restriction was correlated with decreased water intake (SR=-0.195, p=0.006) and decreased total fluid intake (SR=-0.208, p=0.003). Individuals who reported fluid restriction had severe LUTS (p=0.0001) and those with severe LUTS did not have higher total fluid intake (2010ml IQR 1656ml versus 2129ml IQR 2129 p=0.674) or total caffeine intake (1419ml IQR 1301 versus 414ml IQR 473ml p=0.903) compared to those with mild/moderate LUTS. There were weak relationships between total AUA-SS and decaffeinated soda intake (SR=0.156 p=0.028), straining and decaffeinated soda intake (SR =0.173 p=0.015), urinary urgency and decaffeinated soda intake (SR=0.171 p=0.016), intermittency and decaffeinated soda intake (SR=0.158 p=0.025), and incomplete emptying and caffeinated soda intake (SR=0.0153 and p=0.032). Subjects who reported fluid restriction were also more likely to have received pharmacologic therapy (p=0.020) or third line therapies (p = 0.016) to treat overactive bladder, and also were more likely to have worse bowel dysfunction (p=0.038) and worse disability based on EDSS score (p=0.003).

Conclusion: Our data suggests that fluid restriction does not improve urinary symptoms in subjects with MS. A longitudinal study would be needed to investigate if fluid restriction reduces urinary symptoms in patients with MS.
Podium #48
REASONS FOR CLEAN INTERMITTENT CATHETERIZATION CESSATION AFTER SPINAL CORD INJURY: RESULTS FROM THE NEUROGENIC BLADDER RESEARCH GROUP (NBGR)
Darshan P. Patel, MD1, John Stoffel, MD2, Sean Elliott, MD, MS3, Sara Lenherr, MD, MS1, Angela Presson, PhD, MS1, Blayne Welk, MD, MSc4, Jeremy Myers, MD1
1University of Utah, 2University of Michigan, 3University of Minnesota, 4University of Western Ontario
Presented By: Darshan P. Patel, MD

Introduction: Clean intermittent catheterization (CIC) is the recommended catheter-based bladder management strategy after spinal cord injury (SCI) since it has the lowest clinical complications. However, transitions from CIC to other less optimal strategies such as indwelling catheters (IDC) are common and not well understood. We sought to determine inherent quality of life (QoL) concerns for CIC cessation in a cohort of SCI patients.

Methods: We queried the NBRG registry, a multicenter, prospective, observational database, regarding neurogenic bladder (NGB) related QoL among SCI participants. Eligibility included: age >18 years and acquired SCI. 1479 participants enrolled. From this cohort, those identifying their primary bladder management as indwelling catheter (IDC) or urinary conduit were asked if they had ever performed CIC, how long, and why they stopped CIC (multiple reasons could be provided).

Results: A total of 929 patients were identified in the registry meeting our criteria including 176 who had discontinued CIC and 753 who still reported CIC as their primary bladder management. A higher proportion of patients with current CIC as their primary bladder management were paraplegic. These patients also had higher fine motor T scores compared to those who had discontinued CIC. College level education or higher and employment was also more common among those with current CIC. Patient reported reasons for CIC cessation among the 176 patients in our cohort stratified by sex, level of injury (paraplegia vs. tetraplegia), and duration of CIC are shown in Table 1. When patient characteristics of those who reported current CIC vs. CIC cessation as their primary bladder management stratified by level of injury, mean fine motor T scores were higher for those with current CIC even despite stratification by injury level.

Conclusion: Patient inconvenience, urinary incontinence, and urinary infections were the leading reasons for CIC cessation among SCI participants. QoL concerns are an important consideration for bladder management strategies in SCI patients. An individualized approach is needed to decide on an optimal strategy which balances clinical and QoL concerns.
Podium #49
DO APPRECIABLE CHANGES IN THE MOTOR CAPABILITY TO PERFORM CLEAN INTERMITTENT CATHETERIZATION COME ABOUT WITH TIME AFTER TRAUMATIC SPINAL CORD INJURY?
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1Stanford University Medical Center, Department of Urology, 2Santa Clara Valley Medical Center Division of Urology, 3Stanford University Medical Center Department of Urology, 4Santa Clara Valley Medical Center Department of Physical Medicine and Rehabilitation
Presented By: Christopher S. Elliott, MD, PhD

Introduction: Bladder dysfunction after spinal cord injury (SCI) often requires clean intermittent catheterization (CIC) or other management strategies. A common dilemma in those desiring to perform CIC independently, but lacking appropriate upper extremity (UE) motor function, is the timing of reconstructive surgery as UE motor function may improve with time.

Methods: We assessed the National Spinal Cord Injury Dataset for the years 2000-2016. Our cohort consisted of persons with cervical SCI who underwent complete motor examination upon discharge from rehabilitation and at one year follow-up. Using a previously published algorithm, UE motor scores were transformed to predict a patient’s ability to independently perform CIC. Improvements in the predicted ability to self-catheterize were evaluated.

Results: Of the 1428 individuals meeting inclusion criteria, improvements in the predicted UE motor function necessary to independently self-catheterize were observed in 39%, 42% and 38% of those deemed possibly able, only able with surgical assistance or unable to self-catheterize at rehabilitation discharge. On multivariate analysis, only increasing AIS classification and AIS classification improvement over the first year were associated with an increased odds of improving predicted CIC ability (OR=1.44 for AIS C and 1.97 for AIS D compared to AIS A, and OR=1.90 for AIS classification improvement versus stable AIS classification, p<.05 for each).

Conclusion: Improvements in the UE motor function to independently perform CIC occur in approximately 40% of persons with cervical SCI in the first year after rehabilitation discharge. Those with incomplete injuries are more likely to improve. These findings should enhance patient bladder management counseling and guide surgeons in determining an appropriate timeline for offering reconstruction.
Podium #50
LONG-TERM DISCONTINUATIONS OF BOTULINUM TOXIN A INTRADETRUSOR INJECTIONS FOR NEUROGENIC DETRUSOR OVERACTIVITY: A MULTICENTER STUDY
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Presented By: Benoit Peyronnet, MD

Introduction: “Real-life” data on long-term outcomes of intradetrusor injections of botulinum toxin A (BTX-A) for neurogenic detrusor overactivity (NDO) are lacking. The aim of the present manuscript was to assess the outcomes of intradetrusor injections of BTX-A for NDO after more than 10 years of follow-up.

Methods: A retrospective chart review of all consecutive neurological patients who had received either onabotulinumtoxin A or abobotulinumtoxin A intradetrusor injections for NDO between January 2002 and November 2017 at three academic centers, was performed. The primary endpoint was 10 years discontinuation rate. Other outcomes of interest were: failure, reasons for discontinuation and subsequent treatments of NDO. Discontinuation-free and failure-free survivals were estimated using Kaplan-Meier analyzes.

Results: 140 patients were included in the study. Ten-year discontinuation-free survival and failure-free survival rates were 49.1% and 73% respectively. The most common reason for discontinuation was failure (43.7%; primary and secondary in 17.2% and 26.5% of cases respectively). Secondary failure occurred after a median number of 8 injections and a median time of 80.1 months from the first injection. Other reasons for discontinuation were: patient’s decision (28.1%), non BTX-A related improvement of urinary incontinence (14.1%), progression of the neurological condition (12.5%) and adverse event (1.6%). Discontinuation-free survival was significantly poorer in spina bifida patients compared to patients with multiple sclerosis or spinal cord injury (p= 0.02; figure).

Conclusion: Over a half of NDO patients discontinue intradetrusor BTX-A within the first 10 years after the first injection. Spina Bifida patients are at high risk of discontinuation.
Poster #M1
A NEW PARADIGM FOR OUTPATIENT DIAGNOSIS AND TREATMENT OF LOWER URINARY TRACT SYMPTOMS UTILIZING A MOBILE APP/SOFTWARE PLATFORM AND REMOTE PATIENT VISITS: FEASIBILITY STUDY
Jerry G. Blaivas, MD1,2,3, Michael W. Poon, MD4, Eric S.W. Li, BA2,3, Roni Manyevitch, BA3, Devon N. Thomas, BA3
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Presented By: Jerry G. Blaivas, MD

Introduction: The goal of this research is to develop novel diagnostic and treatment paradigms for patients with lower urinary tract symptoms (LUTS) utilizing a software program comprised of a mobile app, validated patient reported outcome (PRO) questionnaires, bladder diaries, and remote patient monitoring. The goals are to triage patients, optimize quality, accuracy, and efficiency of in-office visits, substitute remote visits for in-office visits, enhance the quality of care, reduce costs and foster patient education, engagement, and self-help.

Methods: New patients referred to a urologist were screened for inclusion based on: age > 18, diagnosis of LUTS, BPH, nocturia, overactive bladder, and existing registration on the practice website. Patients without e-mail access were excluded. Participants were offered remote, instead of in-office visits, when appropriate. Those who agreed were invited to download a mobile app* containing the lower urinary tract symptom score (LUTSS) and a 24-hour bladder diary. Participants with low (<14) or intermediate (14 - 42) LUTSS were offered remote visits; those with high scores (43 – 56), reflecting severe symptoms, were offered in-office visits. Data obtained included: age, sex, number screened, excluded, included, lost to follow-up, remote visits, in-office visits, app downloads, time lapse between initial referral, invite and remote or in-office visit.

Results: Results are displayed in Figure 1. Overall, remote visits were achieved in 17% of the entire cohort and 68% of those who completed the app. 34/57 (60%) completed the satisfaction questionnaire. Among patients surveyed, 80% found the app to be an effective way of sharing information with their physician, and 74% found it to be easy and effective to use.

Conclusion: A new paradigm for outpatient diagnosis and treatment of LUTS was developed using a software program comprised of a mobile app, validated PRO questionnaires, bladder diaries, and remote patient monitoring. Patients were triaged according to symptom severity, and 68% of those who completed the app elected to have their initial evaluation performed remotely (17% of all new urology consults). Patient and physician satisfaction were high. Further studies, extending and applying the paradigm to a larger and more diverse group of patients, are necessary to determine the extent of its healthcare quality and economic benefit.

*weShare URO
Poster #M2
LONGITUDINAL CHANGES IN SYMPTOM-BASED FEMALE AND MALE LUTS CLUSTER CHARACTERISTICS AND FACTORS ASSOCIATED WITH CHANGE
Cindy L. Amundsen¹, Margaret E. Helmuth², Abigail R. Smith², John O.L. DeLancey³, Catherine S. Bradley⁴, Kathryn E. Flynn⁵, Kimberly S. Kenton⁶, H. Henry Lai⁷, David Cella⁸, James W. Griffith⁹, Victor P. Andreev², Claire C. Yang⁸, J. Eric Jelovsek¹, Kevin P. Weinfurt¹, Alice B. Liu⁸, Matthew O. Fraser¹, Ziya Kirkali and the LURN Study⁹
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Presented By: Cindy L. Amundsen, MD

Introduction: The presentation of lower urinary tract symptoms (LUTS) is diverse in quality and variable in severity. We examined symptom changes longitudinally and associations between patient symptom clusters, medical and surgical treatments, and baseline factors.

Methods: Patient-reported LUTS and treatment data were collected at baseline, 3 months (6 and 9 -treatment only) and 12 months from the LURN Observational Cohort study, a prospective study of men and women seeking specialty treatment for LUTS. Groups with distinct LUTS characteristics were identified by probability-based consensus clustering. LUTS Severity Scores were calculated to summarize changes over time in symptoms (e.g., voiding, post micturition, incontinence); >0.5 standard deviation (SD) change from baseline severity score was considered clinically meaningful. Repeated measures linear regression models tested associations with severity scores; estimates are reported as effect size (ES).

Results: Based on change in LUTS Severity Scores from baseline to 12 months, 412 males and 394 females were classified into improved, unchanged, and worsened symptoms [males: 40.0%, 46.4% and 13.6%, respectively; females: 49.2%, 41.6% and 9.1%, respectively]. Most symptoms showed improvement in each cluster (Figure). Improvement in LUTS Severity Scores varied by cluster [-0.08 ES to -0.74 ES]. Baseline covariates associated with higher severity scores at all time points include: (for men) older age, anxiety, sleep disturbance, and being single; and (for women) more comorbidity, sleep disturbance, and worse pelvic floor distress. Longitudinally, treatment with pain medication was associated with higher severity scores in men and women [0.45 ES, p-value

Conclusion: Overall, 50% of patients showed improvement with treatment. Symptom improvement varied by cluster as did responses to treatment. Baseline factors predictive of more severe symptoms were similar to those in clinical studies predicting failure after treatment.
Poster #M3
RELATIONSHIP BETWEEN SYMPTOM BOTHER AND SEVERITY IN INDIVIDUALS SEEKING CARE FOR LOWER URINARY TRACT SYMPTOMS (LUTS)
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Presented By: Nnenaya Q. Agochukwu, MD

Introduction: The degree of bother caused by LUTS often guides treatment decisions. However, the relationship of LUTS severity and bother is poorly understood, particularly at the individual level. Aggregate measures are useful for evaluation of trends, but do not characterize individual variation. In this study, we evaluated individual variation of symptom severity and bother.

Methods: Men and women with LUTS seeking care at 6 tertiary care centers were enrolled in The Symptoms of Lower Urinary Tract Dysfunction Research Network (LURN) Observational Cohort Study. Participants completed the LUTS Tool, which includes 22 questions related to LUTS severity and bother. Baseline LUTS tool responses were analyzed. Items were categorized into 6 groups: frequency, urgency, incontinence, obstructive, pain and post-micturition. Severity and bother components were separately summed within a group and normalized to range from 0 to 1. The discordance score (range -1 to 1) was calculated as the difference between the normalized severity and bother. Scores closer to 1 and -1 represent discordant symptoms where bother < severity or bother > severity, respectively, while scores close to 0 represent concordance between severity and bother. Box plots were used to illustrate the distribution of discordance scores.

Results: Data were available for 1064 participants (519 men and 545 women). Discordance scores ranged from -0.63 to 0.65 with at least half indicating relative concordance (discordance score 25th percentiles> -0.13 and 75th percentiles 0.39).

Conclusion: For all LUTS categories, there is notable individual variation in the degree of bother associated with a given symptom severity. Despite an overall strong relationship between severity and bother, the identification of individuals who experience higher bother and lower bother from their symptoms may be useful in determining those that may require an individualized treatment plan to address their LUTS.
Poster #M4
GEOGRAPHIC VARIABILITY IN THIRD LINE OVERACTIVE BLADDER TREATMENT AVAILABILITY FOR MEDICARE PATIENTS: IS THIRD LINE THERAPY NEITHER HERE, NOR THERE?
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Presented By: Erin Salter, MD

Introduction: Fifteen percent of the adult population suffers from overactive bladder (OAB), however rates of compliance with OAB medications remain low. Third line treatments of botox chemodenervation, percutaneous tibial nerve stimulation (PTNS) and sacral neuromodulation exist, but remain uncommonly used. The geographical distribution of local and regional providers offering these services has not been previously studied, but may contribute to disparities in care. Our aim was to characterize the regional availability of third line OAB treatments to Medicare patients who did not have local availability, and identify regional health system characteristics which may contribute to lack of provider availability.

Methods: Medicare 2015 Provider Utilization and Payment Data were queried for urologists performing CPT codes chemodenervation (52287), sacral neuromodulation (64581, 64561), and PTNS (64566). Local and regional availability of providers offering these services were determined using the Dartmouth Health Atlas. Health system characteristics were obtained from the Dartmouth Health Atlas and 2015 American Community Survey. Samples demonstrated normal distribution and were compared by paired T-test.

Results: 15.1 million Medicare patients (57%) had no local availability and 3.4 million Medicare patients (13%) lacked regional availability. Regional health systems which had available providers were characterized by higher Medicare reimbursement per enrollee ($9,606±1,014 vs $9,356±1,235), higher physician reimbursement per enrollee ($2,537±507 vs $2,243±410), and lower outpatient facility reimbursement per enrollee ($1,761±314 vs $1,941±458). Regional urologist density was associated with regional availability, though differences may not be clinically significant (2.5±.5 vs 2.4±0.6). Increased regional Medicare enrollee population (150,229±107,227 vs 54,940±35301) was associated with regional availability. However, regional primary care density and regional patient insurance provider mix were not associated with treatment availability.

Conclusion: The majority of Medicare patients do not have local availability of third line OAB treatments. In addition, one in eight Medicare patients lack regional availability. This can drastically impact OAB care received by Medicare patients across the United States. In addition, regional health care systems with available providers were associated with higher Medicare and physician reimbursements per enrollee. This may indicate that lower healthcare expenditures in a region may be due to lack of availability of providers offering these procedures, rather than a lack of need for these services in these areas.
Poster #M5
THE DEVELOPMENT OF THE NEUROGENIC BLADDER SYMPTOM SCORE SHORT FORM (NBSS-SF)
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Presented By: Blayne Welk, MD MSc

Introduction: The Neurogenic Bladder Symptom Score (NBSS) is a 24-item questionnaire that assesses symptom burden in patients with SCI, multiple sclerosis, or spina bifida. It has been validated in multiple data sets, used in several studies, and licensed to >40 investigators in 16 countries. Our objective was to develop a short form.

Methods: We used three previous published datasets. First, we selected the questions within each of the domains (incontinence, storage/voiding, and consequences) with the highest level of responsiveness (measured by the standardized response mean, SRM) and acceptable face validity. Internal validity of the NBSS-SF was assessed using Cronbach’s alpha. External validity was assessed by evaluating hypothesized relationships with other questionnaires (AUASS, SCI-QOL, and Qualiveen-SF) and testing correlations with the full NBSS domains. Test-retest reliability of the NBSS-SF domains was determined using an intraclass coefficient (ICC2,1).

Results: Using data from a prior responsiveness study, questions with the highest SRM and perceived importance were selected from the incontinence domain (three), storage/voiding domain (three), consequences domain (two) to create the NBSS-SF. We used the original NBSS validation cohort of 220 patients with MS, SCI, or spina bifida to calculate Cronbach’s alpha of 0.76; the external validity was high, with correlations between specific NBSS-SF domains/total scores and the Qualiveen-SF, ICIQ, and AUASS, and between the NBSS-SF domains and the full NBSS domains. In the subset of 120 patients who completed the test-retest reliability assessment, the ICC for the NBSS-SF total score was 0.84. These results were then confirmed in a second independent dataset of 1479 SCI patients: Cronbach’s alpha for the NBSS-SF total was 0.75 and external validity was again demonstrated with a moderate correlation between the calculated NBSS-SF total and the SCI-QOL Bladder complications score, and strong correlations between the NBSS-SF domains/total score and the full NBSS domains/total.

Conclusion: The total score of the eight question NBSS-SF has appropriate validity and reliability, and could be used in patient care settings. The full NBSS is better suited when researchers want to evaluate individual NBSS domains in addition to the total score.
Poster #M6
ADULT NEUROGENIC BLADDER PATIENTS ARE LIKELY TO BE ADMITTED AFTER AN EMERGENCY ROOM VISIT: ADMISSION RATES AND CLINICAL FINDINGS
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Presented By: Oluwarotimi S. Nettey, MD, MHS

Introduction: Neurogenic bladder (NGB) patients frequent the emergency room (ER) because they lack coordinated care for their complex needs. We assess admission rates resulting from ER visits among adult NGB patients at a single urban tertiary center.

Methods: Electronic records of patients with known diagnoses of neurogenic bladder, presenting to Northwestern Memorial Hospital (NMH) ER from 2008-2015, were reviewed. Rates of inpatient hospitalization, antibiotic use and chief complaints were stratified by NGB etiology including multiple sclerosis (MS), spinal cord injury (SCI), brain/spinal cord tumor, spina bifida (SB) and other heterogeneous conditions.

Results: In total 4,479 NGB patients had 6,998 unique ER encounters, of which 82.6% resulted in inpatient admission (p<0.001). SCI patients were disproportionately admitted from the ER (94.7%, p<0.001). Approximately 31.0% of NGB patients met systemic inflammatory response (SIRS) criteria for sepsis, of which 56.2% received antibiotics. Another 23.7% of patients who did not meet criteria for sepsis received antibiotics. Although urinary tract infections (UTIs) represented 4.6% of patient-reported complaints and 12.5% of discharge diagnoses (both p<0.001), a significant number of patients underwent urine testing via urinalysis (73.7%) or culture (51.5%, both p<0.001). Urine cultures were performed on 69.8% of patients without a discharge diagnosis corresponding to UTI or sepsis due to urinary source.

Conclusion: NGB patients are likely to be admitted after an ER visit and undergo testing for UTIs even when presenting with unrelated complaints. SCI patients are particularly vulnerable to inpatient admission. Our findings highlight the need for long-term care coordination and ER provider training about asymptomatic bacteriuria.
Poster #M7
RATES OF BLADDER AUGMENTATION AFTER INTRODUCTION OF ONABOTULINUMTOXINA THERAPY IN THE NEUROGENIC BLADDER POPULATION
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Presented By: Rita P. Jen, MD

Introduction: Augmentation enterocystoplasty is a major reconstructive procedure for management of patients with neurogenic bladder (NGB) and decreased compliance, capacity, and refractory overactivity. While effective, it carries a high risk of complications. In 2011, the FDA approved onabotulinumtoxinA (BTX-A) for management of NGB, introducing a less invasive alternative to bladder augmentation. We sought to identify the impact BTX-A had on bladder augmentation rates over the last 11 years.

Methods: The number of augmentations and BTX-A injections performed each year for the last 11 years at a single institution were identified by CPT codes (51960, 51800 for bladder augmentation; 52287, 53899.1, 52214 for BTX-A). Patients at least 18 years of age who had an office visit with a urology provider from 1/1/2007 to 1/1/2018 and had a diagnosis of NGB were included in the study.

Results: There were 3303 patients with NGB diagnoses evaluated at 9867 distinct encounters at a single center over 11 years. Seventy-one patients underwent bladder augmentation based on CPT data and review of the operative notes. The cohort was 54.5% (39/71) female. Median age was 36 years (21-66). The number of bladder augmentations for NGB ranged from 3-13 per year. From 2007-2011, 13.9% failed BTX-A prior to augmentation versus 77.1% from 2012-2017. After adjusting for the total visits with urology providers for a NGB diagnosis, the proportion of augments per year decreased from 1.40% (25/1791) in 2007-2009 to 0.41% (15/3695) in 2015-2017 (OR 3.78, 95%CI 1.80 to 6.53, p<0.001). BTX-A billing data were available starting in 2012. The proportion of visits for BTX-A injections in NGB cohort has increased steadily from 7.57% (61/806) in 2011 to 17.0% (341/2002) in 2017 (OR=0.44, 95%CI 0.33-0.59, p<0.001).

Conclusion: The rate of bladder augmentations per neurogenic bladder patient encounter has declined dramatically over the last 11 years at a single institution while the rate of BTX-A use has increased. Further longitudinal data are needed to determine if BTX-A is a long-term solution or a short-term therapy delaying inevitable need for bladder augmentation in patients with NGB.

Graph: Adjusted rates of bladder augmentation and BTX-A injections per patient encounter for neurogenic bladder from 2007 to 2017.
Poster #M8
TRANSCUTANEOUS SPINAL CORD STIMULATION TO EFFECT LOWER URINARY TRACT ACTIVITY AFTER SPINAL CORD INJURY
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Presented By: Evgeniy I. Kreydin, MD

Introduction: Transcutaneous spinal cord stimulation (TSCS) is a neuromodulation modality that has been used to improve upper and lower extremity function after spinal cord injury (SCI) [1]. In this study, we assessed whether TSCS affects lower urinary tract (LUT) function in SCI individuals.

Methods: Seven individuals (four males and three females) with SCI at T11 or above who used clean intermittent catheterization to manage the LUT were recruited. Each subject had a stable SCI that occurred at least one year prior to study initiation. Each subject underwent testing and stimulation over two days. On day 1, dose response curves for detrusor and external urethral sphincter (EUS) activation by TSCS were constructed by varying stimulation location (T11 or L1) and current intensity (10 mA – 200 mA). To examine the effects of stimulation on urine storage and voiding, on day 2 subjects underwent baseline urodynamics (UDS) and TSCS at settings found to produce maximal physiologic response in the LUT.

Results: To assess the effect on urine voiding, the bladder was filled to 80% urodynamic capacity and TSCS delivered at 1 Hz. As a result, voiding efficiency increased from 26.99 ± 15.41 to 50.80 ± 5.25 % (P < 0.05, n = 7). In addition, increased flow rate, decreased detrusor-sphincter dyssnergia and post-void residuals were noted. To assess the effect on urine storage, TSCS at 30 Hz was delivered during urodynamic bladder filling. As a result, bladder capacity increased from 170.54 ± 15.86 to 252.59 ± 18.91 ml (P < 0.05, n = 7). When UDS was repeated without stimulation, reversal to baseline was observed.

Conclusion: To our knowledge, this is the first demonstration that neural networks in the spinal cord can be activated with noninvasive stimulation to facilitate LUT activity after spinal cord injury in humans. We show that varying of the stimulation parameters has differential effects on the LUT. Future studies will assess long-term TSCS for correction of LUT dysfunction after SCI.

Comparison of Open and Robot-Assisted Artificial Urinary Sphincter Implantation in Female Patients with Stress Urinary Incontinence: A Multicenter Study

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Presented By: Benoit Peyronnet, MD

Introduction: Several preliminary series have reported the use of a robotic approach for artificial urinary sphincter (AUS) implantation in female patients with stress urinary incontinence (SUI) due to intrinsic sphincter deficiency (ISD). However, to date, only one small sample single-center series have aimed to compare the outcomes of robotic AUS to the ones of open AUS implantation in female patients. The aim of the present study was to compare the outcomes of robotic vs. open AUS implantation in women with SUI caused by ISD in a large multicenter cohort.

Methods: The data of all female patients who underwent open or robot-assisted AUS implantation for SUI due to ISD from 2006 to 2018 at 10 departments of urology were included in a retrospective study. At the beginning of the study period, all surgeons performing robotic implantation had either no or little (20 AUS implantations. Perioperative and functional outcomes between the open and robotic groups were compared.

Results: 135 patients were included: 71 in the robotic group and 64 in the open group. The mean operative time was longer in the robotic group (179.9 vs. 126.2 min ; p<0.0001). The intraoperative complication (i.e. intraoperative bladder neck and/or vaginal injury) rate was higher in the open group (12.7% vs. 27.4%; p =0.03) as were the rate of postoperative complications (15.5% vs. 46.8%; p<0.0001), the rate of “major” Clavien grade≥3 complications (2.8% vs. 17.2%; p=0.01) and the length of hospital stay (4.1 vs. 6.5 days; p=0.002). After a median follow-up of 12.2 months and 25.5 months in the robotic and open groups respectively, the rate of patients fully continent (i.e. 0 pad per day) was higher in the robotic group (83.3% vs. 62.3%; p=0.01) as was the estimated 1-year explantation-free survival (98.6% vs. 78.3%; p=0.001; figure 1).

Conclusion: The robot-assisted approach, even when performed by low experienced surgeons in their learning curve, may decrease the perioperative morbidity of AUS implantation in women when compared to the open approach and possibly improve functional outcomes, likely due to a lower explantation rate.
Women's Experience with Stress Urinary Incontinence: Insights from a Qualitative Social Media Analysis

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Presented By: Gabriela Gonzalez, BS

Introduction: Most qualitative studies of women stress urinary incontinence (SUI) have relied on in-person interviews and surveys, some of which have been limited by the inclusion of one specific population. We attempted to capture the complete patient experience of women with SUI by conducting a large-scale digital ethnographic analysis of anonymous online posts.

Methods: We collected 986 posts from 98 social media sites utilizing keywords with a Java-based natural language processing platform and Treato, a social media data mining service. 200 randomized posts were analyzed using grounded theory methodology to identify preliminary themes. To substantiate our qualitative analysis, we applied a Latent Dirichlet Allocation (LDA) probabilistic topic modeling process to our dataset of 986 posts to provide quantitative analysis and identify additional themes that could remain unidentified with the grounded theory methodology.

Results: Our social network analysis yielded six themes with subthemes (Figure 1). The thematic analysis suggests that women turn to these online communities for advice when learning to handle the quality-of-life impact of their SUI quality, navigating specialty care, and reaching a decision regarding treatment. Additionally, women often discussed perceived risk factors and provided recommendations to each other for prevention and treatment. These forums allow women to share information among themselves relating to surgery outcomes and complications—information that perhaps they might not feel comfortable addressing with their surgeon. Many of the concerns dealt with difficulty in reaching a diagnosis, decisions about the use of mesh, and concomitant sling procedures at the time of pelvic organ prolapse repairs.

Conclusion: Analysis of social media interactions revealed patient values that influence decision making when considering the management of SUI and allow the medical community to understand preventive behaviors that women are recommending among themselves. Our findings provide insight into essential patient behaviors that can be targeted to create appropriate decision aids and counseling about risk factors to improve patient-centered care.
Poster #M11
LONGITUDINAL EVALUATION OF NEW OVERACTIVE BLADDER PATIENTS: ARE PATIENTS FOLLOWING UP AND UTILIZING THIRD LINE THERAPIES?
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Presented By: William T. Berg, MD

Introduction: Anecdotally, patients with overactive bladder (OAB) have poor follow-up and few patients progress to third line therapies. The AUA and SUFU developed a clinical care pathway (CCP) to improve OAB care. We sought to quantify and determine how often new OAB patients follow up and utilize third line therapy before and after the implementation of the CCP.

Methods: Our institution approved OAB database was queried for only new OAB patient visits. These patients were followed longitudinally over 12 months to determine rates of follow-up and utilization of third line therapies. New patients were divided into three distinct time periods: pre-CCP 2014-2015, post-CCP 2016, and post-CCP January 2017-June 2017. Outcomes were compared amongst groups. Our analysis encompassed 9 subspecialty trained urologists, including 1 FPRMS certified urologist.

Results: A total of 1,114 new OAB patients were identified. There were 507, 430, and 176 patients in the pre-CCP, 2016 CCP, and 2017 CCP groups, respectively. After CCP implementation, follow-up rates significantly increased at 3, 6, and 12 months (Table 1). Mean follow-up visits at 6 months and at 12 months increased significantly from pre-CCP to 2 years post-CCP (0.88-1.6, p<0.01 and 1.21-2.06, p<0.01, respectively). Additionally, the third line therapy utilization at 6 months increased from 4.7% pre-CCP to 10% two years post-CCP (p=0.02). In particular, percutaneous tibial nerve stimulation numbers significantly from 0.8% to 5.7% (p<0.01) at 6 months and 2.2% to 6.3% (p=0.03) at 12 months. The median days to third line therapy decreased from 199 to 85 (p<0.01). Specifically, the FPMRS provider had an increase in third line therapy utilization at 6 months from 8.1% pre-CCP to 16.4% two years post-CCP (p=0.054) and 12 month of 11.5% pre-CCP to 20.2% two years post-CCP (p=0.08). Within 1 year, patients also went on to a second third line therapy more frequently (0% vs. 3.1% and 1.9%, p=0.02).

Conclusion: This study demonstrates that after CCP implementation, new patients more reliably follow-up and follow-up quicker. Additionally, refractory patients progress quicker to third line therapies. Despite these findings, 35% of new OAB patients fail to follow-up within one year and utilization of third line therapies remains low.
Poster #M12
OUTCOMES OF MACROPLASTIQUE INJECTIONS FOR STRESS URINARY INCONTINENCE AFTER SUB-URETHRAL SLING REMOVAL
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Presented By: Dayron Rodriguez, MD, MPH

Introduction: Following suburethral sling removal (SSR) for synthetic sling complications, stress urinary incontinence (SUI) may occur in up to 59% of patients(1). Our study sought to evaluate outcomes following urethral Macroplastique (MPQ) injection in women with SUI following SSR.

Methods: Following Institutional Review Board approval, charts of non-neurogenic women with SUI secondary to intrinsic sphincter deficiency (ISD) after SSR who underwent MPQ injection were reviewed from a prospectively maintained database. Patients with follow-up less than 6 months were excluded. Baseline data included UDI-6 and VAS Quality of Life (QoL) Questionnaire scores. Patients were followed with repeat questionnaires and three-dimensional ultrasound (3DUS) evaluating volume of MPQ. Success following MPQ was defined as a composite score of self-reported improvement of >70%, usage of ≤2 pads/day, a UDI-6 question 3 score of 0-1, a VAS QoL score of ≤3, and no additional anti-incontinence therapy.

Results: From 2011-2018, 70 women with mean age of 62.7 years met study criteria. At a mean follow-up of 46.4 ± 1.5 months, the success rate after a first MPQ injection was 41% (29/70). Of the 41 patients who failed initial injection, 27 underwent a repeat injection with a success rate of 52%. Therefore, the overall success rate for the entire cohort was 61% (43/70). Of the 13 patients who failed a second MPQ injection, 11 had stable MPQ volume on 3DUS (mean volume 8.43±0.72ml). Four of these patients underwent autologous pubovaginal sling placement (PVS) to treat residual ISD with resolution of SUI. Of those who did not seek a second injection, 11 sought no further treatment while 2 underwent autologous PVS placement. The majority of patients who failed MPQ injection reported subjective improvement and reduced pad usage. Higher parity was associated with MPQ failure (p=0.027).

Conclusion: Macroplastique injection is an effective management for SUI following SSR, although a second injection may be required to achieve success. These results highlight that most incontinent women can maintain favorable urinary control with a minimally invasive procedure following SSR.

Poster #M13
IDENTIFYING BARRIERS TO URINARY INCONTINENCE CARE AMONG PRIMARY CARE PROVIDERS
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Presented By: Claire S. Burton, MD

Introduction: Urinary incontinence (UI) is a highly prevalent condition that is frequently encountered in the primary care setting with a significant financial burden on the healthcare system. Optimizing utilization of surgical specialist care by providing quality care prior to referral may alleviate some of the healthcare burden. We sought to qualitatively assess challenges and barriers that primary care providers experience in caring for patients with UI in order to identify areas for improvement in providing quality care at the primary care level.

Methods: Twenty primary care providers at two academic centers were randomly selected by practice group location and emailed with an invitation to participate in a five-minute interview regarding urinary incontinence. A standardized open-ended script was used that asked about current practice patterns and perceived challenges to care. Interviews were audiotaped and transcribed verbatim. Grounded theory methodology was then utilized to qualitatively analyze the data. Preliminary themes were subsequently grouped together into categories, from which key concepts emerged.

Results: Prospectively we conducted twelve interviews with primary care providers. There were four male and eight female providers from the specialties of family medicine, general internal medicine, and geriatrics. The first preliminary theme of limitations of a primary care driven evaluation included discomfort with pelvic anatomy, lack of understanding of anatomy on pelvic exam, male provider discomfort performing pelvic exam on women, and discomfort with reaching a definitive diagnosis. The second theme of limitations of initiating care included concerns of anticholinergic drug interactions and effect on cognitive impairment, lack of familiarity with overactive bladder medication options, lack of knowledge about logistics in referring to pelvic floor physical therapy, and not having an algorithm for treatment of UI. The third theme of systems barriers included competing priorities with other medical issues, time limitations, and lack of interest in caring for patients with UI (Table 1).

Conclusion: We compiled a set of primary care provider elicited challenges and barriers to UI care. We plan to utilize the aforementioned themes to create an intervention targeted at improving the quality of UI care delivered prior to referral to a specialist.
Poster #M14
REFINEMENT OF SYMPTOM-BASED FEMALE LUTS CLUSTERS BY USING THE THREE-DAY BLADDER DIARY DATA
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Introduction: Bladder diaries are useful clinical tools in the management of patients with lower urinary tract symptoms (LUTS). The goal of this study was to use bladder diary information to refine and reduce heterogeneity in the four symptom-based clusters previously developed using the LUTS Tool and AUA-SI questionnaires.

Methods: Three-day bladder diary data from 193 women with LUTS collected at baseline in the LURN observational cohort study were analyzed across four previously identified symptom-based clusters. Bladder diary data included numbers of intakes and voids, total volumes of intakes and voids, maximum volumes of intake and voids, as well as total fluid imbalance (3-day difference between intake and void volumes). Data for 32 non-LUTS female controls from the Establishing Prevalence of Incontinence (EPI) study were used for scaling of the LUTS bladder diary data. Probability-based consensus clustering was performed on nine bladder diary variables, 44 items from the LUTS Tool, and eight items from the AUA-SI. Differences across clusters in individual LUTS, and bladder diary variables were examined using one-way ANOVA and chi-square tests with adjustment for multiple testing using the false discovery rate correction (FDR)

Results: Clustering based on combined data identified 7 female LUTS patient clusters. These 7 clusters appear to correspond to clinically meaningful subgroups (Figure 1) as follows: Cluster 1 (n=39) had severe symptoms across all categories, with normal voiding diary values; Cluster 2 (n=23) demonstrated isolated voiding symptoms (hesitancy, straining, etc.); Clusters 3 (n=22), 4 (n=41), and 5 (n=39) were characterized by stress urinary incontinence (UI), urge UI, and mixed UI, respectively; Cluster 6 (n=12) showed high fluid intake and large numbers of voids with low symptom severity; Cluster 7 (n=17) demonstrated mild LUTS and few voiding diary abnormalities including high voided volumes. All clusters demonstrated frequency, while clusters 1,3,4,5 and 6 demonstrated urgency. On average 24 out of 61 variables were significantly different across the pairwise comparison of the clusters including 3 out of 9 bladder diary variables.

Conclusion: The addition of bladder diary data to LURN clustering efforts resulted in identification of seven distinct and clinically meaningful LUTS phenotype clusters.
Poster #M15
FOCUS GROUPS VERSUS DIGITAL ETHNOGRAPHY: WHICH BETTER CAPTURES THE PERSPECTIVES OF WOMEN WITH RECURRENT URINARY TRACT INFECTIONS?
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Presented By: Victoria C. S. Scott, MD

Introduction: Little is known about patients’ experiences and perceptions of the current management of recurrent urinary tract infections (rUTIs). The aim of this study was to compare patient perceptions of rUTIs generated through focus group discussions to what is said on social media platforms using digital ethnography. A comparison of the findings from two different methods of data collection will improve and validate our understanding of women’s experiences with rUTIs.

Methods: Twenty-nine women were recruited from a tertiary urology practice to participate in one of six focus groups. Topics discussed include UTI knowledge, prevention, treatment and impact on quality of life. Data analysis was performed using grounded theory methods. For the digital ethnography analysis, 83,589 posts from 859 websites were collected using a Java-based natural language processing platform. Two hundred randomized posts were analyzed using grounded theory methodology. We also applied a Latent Dirichlet Allocation (LDA) probabilistic topic modeling process to the dataset to allow for semantic theme discovery. The focus group and digital ethnography data sets were coded independently and then compared.

Results: All major themes that emerged during analysis of focus group data were reported in the analysis of social media posts. Of the 14 major themes identified through the digital ethnography analysis, twelve were also identified in analysis of focus group transcripts. A comparison of themes confirmed that UTIs have a dramatically negative impact on patients’ quality of life, patients desire non-antibiotic alternatives for prevention and treatment, and they experience significant frustration with the medical community’s current management of rUTIs. This prompted them to seek support and guidance from peers and the online community.

Conclusion: Social media presents a unique and rich opportunity to learn about the experience of non-experimental patients outside of a research setting, whereas focus group discussions allow for more concentrated data collection focused on specific topics. Although social media platforms provide perspective from a much larger, more diverse population with an anonymous forum to discuss problems in the acute setting, a comparison of patient perspectives on rUTIs gleaned from focus groups were very similar to those identified using digital ethnography, confirming the transferability of findings from both analyses.
Poster #M16
SATISFACTION OF WOMEN UROLOGISTS WITH MATERNITY LEAVE, CHILDBIRTH TIMING AND WORK-FAMILY BALANCE TEN YEARS LATER
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Presented By: Victoria C. S. Scott, MD

Introduction: Women in surgical fields face many challenges regarding family planning. In 2007, previous research investigated the satisfaction of female urologists with maternity leave and childbirth timing using a survey instrument. This study sought to re-evaluate current satisfaction among female urologists using a similar instrument and determine if the obstacles faced by those who choose to have children have changed.

Methods: A 91-item survey including questions about maternity leave, timing of childbearing, breastfeeding and satisfaction with work and family balance was sent electronically to all board-certified female urologists by the American Board of Urology in 2017. Results from participants who completed residency before 2007 were compared to those who completed residency after 2007 (the first to complete residency with the 80-hour work week). Data was also compared to findings published from surveys of female urologists in 2007.

Results: A total of 183 female urologists with a mean age of 44.3 years old (range 31-65) and mean of 2.1 biological children responded to the survey. Satisfaction with pregnancy experience was reported for 78% of pregnancies. Maternity leave duration was significantly related to the overall pregnancy satisfaction, with women having >8 weeks reporting highest satisfaction (p=0.002). After their first birth, 21% of women had £4 weeks of maternity leave, 47% had 4-8 weeks and 32% had >8 weeks. Satisfaction with breastfeeding experience was significantly related to breastfeeding duration (p=0.0005). There were no significant differences in satisfaction with career or life, although women who graduated after 2007 reported lower satisfaction with way they manage time between career and family/personal responsibilities compared to women who graduated before 2007, at 67% and 77%, respectively. A qualitative analysis of survey comments revealed that 1) there is still a great need for efforts in Urology to make it easier to raise a family 2) substantial frustration remains with finding a balance between career and personal life, and 3) having a supportive partner is critical in achieving this balance.

Conclusion: Although participants reported high levels of work and life satisfaction, they contend that there is still a great need to increase support for women in Urology to have and raise children, both during training and in practice.
Poster #M17
THE NON-INVASIVE MEASUREMENT OF NON-VOIDING RHYTHMIC BLADDER CONTRACTIONS BY M-MODE ULTRASOUND IN WOMEN WITH AND WITHOUT BLADDER URGENCY
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Presented By: Anna S. Nagle, PhD

Introduction: Non-voiding rhythmic contractions are often observed in the urodynamic tracings of individuals with bladder urgency. These rhythmic pressure changes are related to micromotion in the bladder wall as both are believed to be the result of the synchronization of bladder contractions. This study’s objective was to apply a non-invasive method to measure bladder wall micromotion previously optimized in a swine model to humans with and without urgency to determine its effectiveness in a clinically relevant setting.

Methods: 28 women were prospectively recruited for extended ultrasound urodynamic studies consisting of 14 women with no urgency symptoms and 14 women with significant urinary urgency as measured by the ICIq-OAB survey. After filling the bladder to 40% cystometric capacity, 85 second anatomical motion-mode (AMM) cine loops were obtained using a GE Voluson E8 ultrasound system with 8 MHz curved, abdominal probe. These images were imputed into a custom correlation-based texture tracking algorithm implemented in MATLAB to measure changes in the bladder wall thickness over time. The frequency characteristics of these thickness changes were compared to the frequency characteristics of the urodynamic vesical pressure tracings taken over the same 85 second period using Fourier transform analysis.

Results: Significant bladder wall micromotion was defined as changes in wall thickness with frequency characteristics defined as having peaks in the range of 2-6 cycles/minute with amplitudes higher than 0.1 mm. 43% of the subjects with urgency and 7% of the subjects without urgency had micromotion meeting this criteria demonstrating a significant association of micromotion with urgency (Chi-square, p=0.029). The seven women with significant micromotion had a peak in the frequency domain of their vesical pressure tracing within 20% of the micromotion frequency. This shows that the rhythm observed in the changes in bladder wall thickness correlate to the rhythmic changes in bladder pressure measured with urodynamics within the frequency range of interest.

Conclusion: The feasibility of a non-invasive method to measure bladder wall micromotion using transabdominal AMM ultrasound was shown to yield frequency results similar to those measured by urodynamics. Identification of a micromotion-associated subgroup of DO patients could enable better targeting of DO treatments for this group without the need for an invasive urodynamic study.
Poster #M18
FOLLOW-UP OF E-SISTER PARTICIPANTS AT ONE SITE TO EVALUATE THE VERY LONG-TERM RESULTS OF BURCH VS. AUTOLOGOUS SLING PROCEDURE FOR STRESS URINARY INCONTINENCE
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Presented By: Amy Kuprasertkul, BS

Introduction: To report the very long-term outcomes of the E-SISTEr participants who underwent Burch (B) or Fascia sling (S) procedures for stress urinary incontinence (SUI).

Methods: Following IRB and UITN approval, participants in SISTEr (1) and E-SISTEr (2) at one center who returned for a mid-term office evaluation in 2010 were further reviewed for longer term follow-up. This follow-up included office visits with EMR documentation on their continence status. For those not seen in the last 2 years, structured telephone interviews were conducted by a third party investigator (AK) not involved in patient care. Both groups received same validated questionnaires, including Urogenital Distress Inventory-Short Form (UDI-6), Incontinence Impact Questionnaire-Short Form (IIQ-7), and visual analog quality of life score (QoL). Failure was measured by a Kaplan-Meier curve using time to reoperation for SUI at the most recent patient encounter.

Results: Of 29 eligible patients (B=14, S=15), 21 had long-term information (B=11, S=10). Of the 8 lost to follow-up, 1 was deceased and 7 were unreachable by phone. Median follow-up was 15.1 years (range: 11.2-16.0). UDI-6 Q#3 score was lower for those followed up by phone (n=13, mean=0.3 ± 0.6) compared to those seen in clinics (n=8, mean=1.3 ± 1.1) (p=0.0208). Outcome measures for Burch vs. Sling are presented in the table. Reoperation for SUI/prolapse was required in 5 patients (B=4, S=1), with sacrocolpopexy (B=1), cystocele repair (B=1), fascial sling placement (B=1) or injectable agents (B=1, S=1). The Kaplan-Meier 10-year reoperation free survival rate was 95.2% (95% CI: 70.7-99.3).

Conclusion: In this well characterized small cohort, there was a sustained improvement in continence scores and quality of life related to SUI in both study arms, with a low reoperation rate over time.

References:

| Table 1. Patient characteristics by type of SUI procedure (Burch or Sling) |
|-----------------------------|-----------------------------|-----------------------------|-----------------------------|
|                            | Total (n = 21)              | Burch (n = 11)              | Sling (n = 10)              |
| Age at surgery, years (range) | 50.0 (40-64)               | 60.0 (46-70)               | 55.9 (40-64)               |
| Median follow-up, years (range) | 13.1 (11.2-16.0)            | 15.1 (13.2-16.0)           | 14.8 (13.6-16.0)           |
| Follow-up source | Clinic | 8 (38%) | 5 (40%) | 3 (30%) | 0.6594 |
|                         | Phone | 13 (62%) | 6 (54%) | 7 (70%) |            |
| UDI6-Q6 Questionnaire | Total Score | 3.6 ± 2.6 | 3.9 ± 3.0 | 3.2 ± 2.3 | 0.5591 |
|                        | UDI6 Q1 Frequency (0-3) | 0.8 ± 0.9 | 0.9 ± 1.1 | 0.6 ± 0.7 | 0.4762 |
|                        | UDI6 Q2UI (0-3)           | 1.2 ± 1.1 | 1.0 ± 0.9 | 1.4 ± 1.1 | 0.4118 |
|                        | UDI6 Q3 SU(0-3)           | 0.7 ± 0.9 | 0.9 ± 0.7 | 0.4 ± 0.7 | 0.2409 |
|                        | UDI6 Q4 Drops(0-3)        | 0.6 ± 0.6 | 0.7 ± 0.5 | 0.3 ± 0.5 | 0.4007 |
|                        | UDI6 Q5 Emptying(0-3)     | 0.3 ± 0.4 | 0.3 ± 0.3 | 0.2 ± 0.4 | 0.6278 |
|                        | UDI6 Q6 Pain (0-3)        | 0.1 ± 0.3 | 0.1 ± 0.1 | 0.1 ± 0.1 | 1.0000 |
| QoL, Score (0-10)      | 3.5 ± 3.2 | 4.3 ± 3.6 | 2.7 ± 2.7 | 0.2730 |
| DIQ (21-2)             | 1.4 ± 1.3 | 1.4 ± 1.6 | 1.6 ± 1.6 | 0.1656 |
| Pad per day            | 1.4 ± 1.3 | 1.3 ± 0.9 | 0.9 ± 0.9 | 0.8194 |
| Reoperation for SUI (3) | POP (2) | 5 (24%) | 4 (20%) | 1 (10%) | 0.3108 |
| Median time to reoperation, years (range) | 13.6 (2.9-17.3) | 13.5 (2.9-17.3) | 13.6 | 1.0000 |
Poster #M19
PERIOPERATIVE FACTORS CONTRIBUTING TO DELAYED RETURN OF CONTINENCE AFTER RADICAL PROSTATECTOMY
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Presented By: Divya Ajay, MD, MPH

Introduction: Factors governing the return of post-prostatectomy urinary incontinence (PPUI) are poorly understood. The goal of this study is to characterize pre and intraoperative factors contributing to a delay in regaining continence after non-salvage robot-assisted laparoscopic prostatectomy (RALP) at a single tertiary cancer center.

Methods: Patients with pathologically proven, non-metastatic, T1-T3bN0 prostate cancer, treated with a curative intent by two high-volume surgeons were included in the study. Patient demographics, operative details, and postoperative continence were extracted from medical records. Time to dry is defined as the time interval between the date of prostatectomy and the first evaluation at which patients present with zero pad use. Patients were evaluated for pad usage at four time points. Patients with missing data at all evaluations were excluded. The probabilities of incontinence were estimated using the Kaplan and Meier method. Cox proportional hazards regression models were used to assess the association between time to dry and patient characteristics. All statistical analyses were conducted in SAS and Splus.

Results: From 2008 to 2015, 1350 patients were evaluated, 75 were excluded due to missing data, yielding 1275 total patients for analysis. During the follow-up period, 851 (66.7%) reported zero pad use after surgery. The median time to dry was 6 months and the median follow-up time was 32 (19-48) months. The univariate analysis demonstrated that age, race, clinical stage, pathologic stage, nerve-sparing status and number of comorbidities associated with incontinence (obstructive sleep apnea, chronic obstructive pulmonary disease, diabetes mellitus, and obesity) were significant predictors for a delay in resolution of PPUI. On multivariate analysis, the variables that remained significant after backward model selections include age, nerve-sparing status, and the number of comorbidities. Older age (p=0.0002) and more comorbidities (p=0.04) were associated with a prolonged time to dry, while having either unilateral (p=0.004) or bilateral (p=0.001) nerve-sparing RALP was associated with a shorter time when compared to the non-nerve sparing group. Notably, neoadjuvant androgen deprivation therapy and preoperative hypogonadism did not affect the time to dry.

Conclusion: In addition to intraoperative technical factors, this study highlights the large impact patient comorbidities have in the resolution of PPUI. This information can better guide patient counseling and framing expectations.
Poster #M20
PROSPECTIVE PARALLEL COHORT, MULTI-CENTER STUDY OF SOLYX SINGLE INCISION SLING VS. OBTRYX II SLING FOR TREATING STRESS URINARY INCONTINENCE IN WOMEN: 3 YEAR RESULTS
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Presented By: Amanda White, MD

Introduction: Midurethral slings are the primary surgical treatment for women with stress urinary incontinence (SUI). This study aims to determine if a single-incision sling (SIS) is non-inferior (NI) to a transobturator sling (TMUS) in efficacy and safety.

Methods: Women with predominant SUI, positive cough stress test (CST), and a PVR <150cc were eligible for enrollment. Subjects were not eligible if they had prior SUI surgery or prolapse surgery with a mesh complication. Concomitant prolapse repair was allowed. The primary endpoint was treatment success defined by a composite of objective measure (negative CST) and any subjective self-reported improvement in SUI using the Patient Global Impression of Improvement (PGI-I) at 36 months. Secondary endpoints included adverse events and reoperation or retreatment. NI margins of 15% and 10% were prespecified for the primary efficacy and safety, respectively. Propensity score stratification was used to achieve balance in the key risk factors between treatment groups and was used for primary endpoint assessment. Data analysis was performed using both intent-to-treat (ITT) and per protocol (PP) methods.

Results: A total of 141 women were in the SIS group and 140 women were in the TMUS group. At 36 months, treatment success was 90.4% in the SIS group and 88.9% in the TMUS group ($P = 0.93$), figure 1. At 36 months, SAE rates were 0.7% in both groups and mesh related complications were similar (mesh exposure: 2.8% vs 4.3%, $P = 0.54$; mesh erosion: 0.0% vs 0.7%, $P = 0.50$). Reoperation rates were low, 3.5% in the SIS group vs. 2.9% in the TMUS group with the difference between groups 1.7% and a 90% CI [-1.5%, 4.9%]. Dyspareunia (0.7% vs 0%, $P = 1.00$), pelvic pain (0.7% vs 0%, $P = 1.00$), and urinary retention (2.8% vs 4.3%, $P = 0.54$) were low in both groups, figure 2. Conclusion: SIS is non-inferior to TMUS for subjective and objective cure of SUI and SAEs following surgery. This study offers long term efficacy and safety data on a SIS, and may suggest the implementation of more minimally invasive surgery for SUI.

Funding: Boston Scientific
Poster #M21
URODYNAMIC MECHANISMS UNDERLYING OVERACTIVE BLADDER SYMPTOMS IN PATIENTS WITH PARKINSON’S DISEASE
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Presented By: Gregory Vurture

Introduction: There is limited knowledge about the role of urodynamics in Parkinson's Disease (PD) patients with overactive bladder (OAB) symptoms as all past studies have described urodynamic findings of PD patients with any lower urinary tract symptoms (LUTS). The goal of this study was to assess the urodynamic mechanisms underlying OAB symptoms in patients with PD.

Methods: The charts of all PD patients who underwent videourodynamics (VUD) for storage symptoms between 2010 and 2017 at a single academic neurourology division were retrospectively reviewed. Patients in which VUD was indicated for OAB symptoms were included in the present study. Means and standard deviations were reported for continuous variables and proportions for nominal variables. Univariate analyzes using Fisher exact test or chi-2 test for nominal variables and Mann-Whitney test for continuous variables were performed to seek for clinical predictive factors of various urodynamic parameters.

Results: Forty-two patients were included in the present analysis. On VUD, 41 of the 42 patients had an involuntary detrusor contraction (IDC) (97.6%). The one patient who did not have an IDC was diagnosed with PD only 2 months prior to her VUD study. The mean volume of the 1st uninhibited contraction was 168.2ml. The first desire to void occurred on average at 139.5 ml with an average cystometric capacity of 274.8ml. On pressure flow analysis, the patients had an average maximum flow of 10.2 ml/s, with an average detrusor pressure at maximum flow of 36.2 cm H2O. The maximum detrusor pressure was 53.7 cmH2O. The average voided volume was 141.3 ml. When analyzing differences among gender, detrusor pressure at maximum flow was significantly higher in males than females (41.3 vs 22.6, p=0.001).

Conclusion: Most PD patients with OAB symptoms exhibit DO. The decision to perform urodynamics in these patients should be prompted by other objectives than diagnosing DO because this urodynamic finding can be presumed with a very high probability from clinical observation. OAB symptoms is most likely driven by DO in the vast majority of PD patients.
Poster #M22
HAS THE USE OF PRE-OPERATIVE URODYNAMICS FOR STRESS URINARY INCONTINENCE SURGERY CHANGED FOLLOWING THE VALUE STUDY?
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Presented By: Jacqueline M. Zillioux, MD

Introduction: Published in 2012, the Value of Urodynamic Evaluation (VALUE) study suggested that routine urodynamic evaluation (URD) is not beneficial for pre-operative evaluation of uncomplicated, stress-predominant urinary incontinence (SUI). Accordingly, professional organizations have advocated against routine pre-operative URD in “index” SUI patients. We assessed URD rates in patients undergoing slings through analysis of patient claims data with focus on use following the VALUE study.

Methods: Data were accessed from the Virginia All Payers Claims Database. We identified female patients with diagnosis of SUI from May 2011-December 2016 using ICD codes N39.3 or 625.6. CPT codes were used to select the subset undergoing URD and/or slings. Pre-operative URD was defined as URD performed within six months of sling placement. Non-index patients were defined as those with concurrent diagnosis of overactive bladder, urge incontinence, mixed incontinence, or neurogenic bladder, and were excluded from primary analysis. We analyzed longitudinal rate of URD in patients undergoing sling placement and fitted an interventional ARIMA model with a step function after the time of the VALUE study publication.

Results: A total of 44,347 patients with a SUI diagnosis were identified over the study period, with a mean of 7391 patients/year. Of index patients with a SUI diagnosis, 5,944 underwent sling procedures. The mean number of slings and URD per year was 1236 and 3488, respectively. A decrease in the annual number of slings, both with and without pre-operative UDS, was seen beginning in mid-2012 (Figure 1). The proportion of slings with pre-operative URD demonstrated a small decrease over the study years (68%, 2011; 58%, 2016). In addition, the time series model (ARIMA 0,1,5 with drift) demonstrated a significant decrease in number of slings with pre-operative URD starting in May 2012 (p=0.044).

Conclusion: Our study demonstrates a decrease in the number of slings with pre-operative URD in uncomplicated patients following publication of the VALUE study in May 2012. There was additionally a small decrease in the proportion of slings with pre-operative URD among index patients. Further research is needed to examine trends of pre-operative URD and underlying influences.
Poster #M23
DIFFERENCES IN BLADDER SHAPE DURING FILLING BETWEEN INDIVIDUALS WITH HEALTHY AND OVERACTIVE BLADDERS IDENTIFIED USING NON-INVASIVE ULTRASOUND DURING ORAL HYDRATION
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Presented By: Andrea Balthazar, MD

Introduction: A recent ultrasound-urodynamics study found that individuals with overactive bladder had abnormal bladder shapes compared to normal healthy volunteers. The objective of the present study was to determine whether the use of 3D ultrasound during an accelerated oral hydration protocol could non-invasively identify differences in bladder shape parameters between normal individuals and individuals with OAB.

Methods: Individuals with no urgency or high urgency based on ICIq-OAB surveys (question 5a =0 or ≥3) were recruited for an IRB-approved protocol. Participants voided, drank 2 liters of G2 Gatorade, and completed two fill-void cycles during which 3D ultrasound images were recorded at 5 minute intervals. During each fill, participants reported their sensation on a tablet-based sensation meter using a 0-100% scale, and they voided upon reaching 100% sensation. Bladder wall perimeters were quantified at the midline in the transverse and sagittal planes using GE 4DView software (Figure 1). Transverse to sagittal perimeter ratios were calculated for each group and compared.

Results: Data from nine healthy participants (6 women and 3 men) and eight participants with OAB (7 women and 1 man) were analyzed. The mean transverse perimeter to sagittal perimeter ratio for the OAB group was 1.21±0.07 which was significantly greater than the ratio for the normal group (1.018±0.056, p=0.043). Three of the women with OAB had transverse to sagittal perimeter ratios more than 2 standard deviations greater than the mean of healthy group.

Conclusion: This study demonstrates the feasibility of quantifying bladder shape parameters using ultrasound during non-invasive hydration studies. Individuals with OAB identified with outlying geometric parameters may represent a bladder shape-associated subgroup that could be identified non-invasively.
Poster #M24
ENVIRONMENTAL FACTORS TO INCREASE PATIENT COMFORT DURING URODYNAMIC TESTING: A RANDOMIZED CONTROL TRIAL OF 160 PATIENTS
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Presented By: Alexandra Carolan, MD

Introduction: Urodynamics (UDS) is essential in evaluation of the lower urinary tract. Patient discomfort from abnormal voiding conditions during testing interferes with proper evaluation. We aimed to assess comfort during UDS and test if background sounds alter the experience and improve rates of spontaneous voiding during testing.

Methods: Patients were randomized into three groups during standard UDS testing: no background noise (control group), patient’s choice of music, or sound of running water. Patients unable to mount a detrusor response with permission to void had the opportunity to void in private following removal of the intraurethral catheter. Patients then completed a Numerical Rating Scale (NRS) scored from one to ten, with scores of 1 and 10 signifying “extremely comfortable” and “extremely uncomfortable”, respectively. Patient age, gender, history of urodynamics, indication for urodynamics, and post-procedure NRS score were recorded.

Results: A total of 160 patients were randomized into the three groups: 50 patients in the control, 52 patients in the music, and 46 patients in the water groups. The mean age was 61.9±15 years and 55% were female. The most common indications were incomplete bladder emptying (26%), lower urinary tract symptoms without incontinence (25%) and incontinence (19%). Median bladder capacity was 450mL. Twenty-five percent of patients had undergone urodynamic testing before. There were no statistical differences in age, gender, indication for testing, bladder capacity, or UDS history. The median NRS for the cohort was 3. Females reported a higher median NRS score compared to men (4.0 vs. 3.0, p=0.05). With permission to void, the control group mounted a detrusor response in 94% of patients versus 75% in the music group and 80% in the water group (p=0.02). There were no significant differences in scores based on history of UDS (p=0.39). There were slightly lower scores with increased age (score of 4 for ≤ 60 vs 3 for ages ≥ 61) but this was not statistically significant (p = 0.14).

Conclusion: When utilizing median values on NRS, women and younger patients reported moderate pain (NRS 4-6), whereas men and older patients reported mild pain (NRS 1-3). No background noise during testing allowed for more intubated voiding compared to having background noise.
**Poster #M25**

**16-YEAR TRENDS OF INTERSTIM IMPLANTATION: A STATEWIDE DATABASE ANALYSIS**

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Presented By: Michael Gross, BS

**Introduction:** Sacral neuromodulation (SNM) was first adopted for the treatment of lower urinary tract symptoms in 1997 and approved for fecal incontinence in 2011. More recently, other third line therapies including percutaneous tibial nerve stimulation (PTNS) and Botox have become more prevalent. We sought to assess trends in Interstim® generator implantation and determine if revision rates correlate with the presence or absence of fellowship training in Female Pelvic Medicine and Reconstructive Surgery (FPMRS).

**Methods:** We utilized the Statewide Planning and Research Cooperative System (SPARCS) database to query all SNM generator implants from 2000 to 2015 in New York State (NYS). Implants and revisions or removals were identified by CPT code. Trends in implantation were analyzed between clinical specialties as well as by fellowship training.

**Results:** A total of 5,361 SNM implants were performed in NYS over the study period. Overall, urologists performed the majority of implants (74.2%) followed by gynecologists (18.7%) and colorectal surgeons (7.1%). The number of implantations by colorectal surgeons increased fourfold between 2011 and 2012 following FDA approval for fecal incontinence (Figure 1). Of those implants performed by gynecologists, 46.7% were FPMRS trained, compared with only 20.3% of corresponding urologists (p < 0.0001). Over the study period, 30.2% of devices were revised or removed. Given as a percentage of the total number of implants performed by specialty, colorectal surgeons had a significantly lower rate of revisions (22.7%) compared with urologists (30.9%) and gynecologists (30.1%, p=0.004). Interestingly, providers without fellowship training in FPMRS had a significantly lower rate of revision (28.6% vs. 36.8% p < 0.0001). While the number of implants performed by urologists decreased by 3% over the last 5 years, the total number of implants performed grew by 18% (p = 0.02).

**Conclusion:** Urologists continue to comprise the majority of SNM implantations, but new therapies may have impacted further growth. Over 60% of all implants during the period occurred in the last 5 years. There appear to be differences in the rates of revision stratified by FPMRS training, but these may be attributable to referrals to FPMRS providers for revision procedures or more complex implants and require further study.
Poster #M26
ASSESSMENT OF TRANSCUTANEOUS ULTRASOUND IN IDENTIFICATION OF THE POSTERIOR TIBIAL NERVE
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Presented By: Steven Lomax, MD

Introduction: Percutaneous tibial nerve stimulation (PTNS) is a currently approved modality for neuromodulation to treat voiding dysfunction. Identification of the relative position of the nerve is by physical palpation of the ankle region utilizing accepted and identified anatomic landmarks. Treatment efficacy may be impacted by failure to optimally identify the relative posterior tibial nerve position secondary to individual anatomic variance. Optimally and reproducibly identifying the correct nerve position may impact therapeutic efficacy.

Methods: 25 adult subjects were enrolled with IRB approval to gauge the difference in position of the posterior tibial nerve by the use of transcutaneous ultrasound as opposed to cutaneous palpation. The position of the posterior tibial nerve was determined first by palpation method and then by using the Philips Lumify Mobile App Based ultrasound with L12-4 Broadband Linear Array transducer. The difference in position between the two methods was determined in both the proximal-distal (PD: knee – sole) and anterior – posterior planes (AP). Statistical analysis was completed with numeric variables summarized with the sample median, range, and interquartile range (IQR). Categorical variables were summarized with number and percentage of patients. Comparisons between anterior-posterior and proximal-distal distances were performed using a nonparametric Wilcoxon signed rank test. All analyses and graphics were performed using SAS statistical software (version 9.4M5, SAS Institute Inc., Cary, NC).

Results: 25 patients were studied: 7 (28%) were male and 18 (72%) were female; median age was 37 years (range, 19 to 70; IQR, 31 to 51). The median AP distance between ultrasound and provider was 2 mm (range, 0 to 5 mm; IQR, 2 to 3 mm). The median PD distance between ultrasound and provider was 4 mm (range, 0 to 9 mm; IQR, 3 to 5 mm). The median difference between the AP and PD distances was 2 mm (range, -3 to 7 mm; IQR, 0 to 4 mm).

Conclusion: The use of ultrasound identifies the nerve with greater accuracy than palpation technique. Our data suggest the distance between ultrasound and provider location of the posterior tibial nerve is higher along the PD plane compared to the AP plane (Wilcoxon signed rank p<0.001). Impact on therapeutic efficacy will need further study.

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Poster #M27
SACRAL NEUROMODULATION IN PATIENTS WITH PARKINSON’S DISEASE: A MULTICENTER STUDY
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Presented By: Benoit Peyronnet, MD

Introduction: Storage lower urinary tract symptoms (LUTS) are common in patients with Parkinson’s Disease (PD). The high prevalence of co-occurrent anorectal dysfunction in this population would make sacral neuromodulation (SNM) a potentially valuable treatment option in this population as the therapy could address both bladder and bowel dysfunction. However, there has been no series to date examining the outcomes of SNM in PD patients to confirm this hypothesis. The aim of the present study was to assess the outcomes of SNM in PD patients.

Methods: All PD patients who underwent stage-1 SNM or percutaneous nerve evaluation (PNE) at 1 US and 5 French academic departments of urology for storage LUTS between 2008 and 2018 were included in a retrospective study. Patients with Parkinsonism were excluded. Interstim 2 was implanted if patients reported an improvement of storage LUTS > 50% during stage-1 or PNE.

Results: After exclusion of 5 patient with Parkinsonism, 20 patients were included for analysis. Median age was 74 and most patients were males, all refractory to antimuscarinics and with 90% exhibiting detrusor overactivity on preoperative urodynamic testing. No patients had bowel dysfunction at baseline. Six patients underwent PNE and 14 stage-1 SNM. Thirteen patients (65%) had a >50% improvement after a mean test phase of 8.7 days and went on with Interstim 2 implantation. No postoperative complication was noted neither after PNE/Stage-1 nor after Interstim 2 implantation. After a median follow-up of 20 months, only 7 patients still felt their storage LUTS were improved > 50% compared to baseline (intent to treat efficacy=35%) with a statistically significant difference between those who had undergone PN vs. stage 1 (0% vs. 50%; p=0.05).

Conclusion: This series is the first to specifically assess the outcomes of SNM in PD patients. The outcomes we observed seems inferior to what is typically reported in non-neurogenic patients. However, no patients had concomitant bowel dysfunction at baseline and SNM practices were very heterogeneous due to the retrospective multicenter international study design emphasizing the need of further study to better define the role of SNM in this population and maybe selection criteria.
Poster #M28
12 YEAR SINGLE CENTER RETROSPECTIVE REVIEW OF RISK FACTORS AND RATE OF TINED LEAD BREAKAGE DURING SACRAL NEUROMODULATION LEAD EXPLANT
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Presented By: Jessica J. Rueb, MD

Introduction: The tined lead for use with InterStim sacral neuromodulation (SNM) was introduced in 2002. However, little data on lead breakage has been published. In 2010 the manufacturer estimated a 1% rate of lead breakage and recommended removal from an incision over the sacrum (as opposed to from generator site). We previously described 5-year data of an 18% rate of lead breakage with risk factors of time since implantation and diabetes. The purpose of this review was to extend this data, and further define rate and risk factors for lead breakage.

Methods: We retrospectively reviewed lead explants from 2006 to 2018. Patients with non-tined lead, missing information or explant for infection or failed stage 1 were excluded. Clinical factors reviewed included age, BMI, gender, diabetes, time since implantation, history of prior revision and explant indication. Surgical techniques reviewed included cannulating the old lead with a straight stylet, and removal from an incision over the sacrum vs the generator site. Statistical analyses were performed as appropriate.

Results: 283 patients met study eligibility requirements. Patients were predominantly female (93%), non diabetic (85%), with mean age of 53 ±16, mean BMI 29.3±7.8, and mean time since implantation of 2.8 ±2.1 years. Rate of lead breakage was 8.1%. The only significant difference between lead intact to lead breakage groups was time since implantation (p<0.001). On univariate analysis the following clinical factors were predictive of lead breakage: male gender, diabetes, time since implantation, history of fall/trauma, and surgeon. On multivariate, only gender (OR 8.2 95% CI 2.6-25.5) and time since implantation (OR 0.675 95% CI 0.555-0.821) remained significant. There was a 67% increased risk of lead breakage if time since implant was 4.5 vs 2.2 years and an 8.2 times higher risk of lead breakage in males. Surgical technique used for lead removal was not significant.

Conclusion: Overall rate of lead breakage was higher than estimated by the manufacturer, with the strongest predictor of lead breakage being the time interval since implantation. Interestingly, in all cases of lead breakage an incision over the sacrum had been made and this was not a protective factor. These findings are valuable for patient counseling prior to SNM revision.
Poster #M29
GENE EXPRESSION PROFILES IN URINARY BLADDER MUCOSA ARE HIGHLY CORRELATED WITH ANESTHETIZED BLADDER CAPACITY IN IC/BPS PATIENTS
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Presented By: Whitney R. Smith, MD

Introduction: The goal of this study is to further explore our working hypothesis that the low capacity (= 400 ml) bladder mucosal gene expression profile represents a bladder centric IC/BPS sub-phenotype. This hypothesis is based on data from our earlier pilot study showing that a subset of IC/BPS patients (those with a severely diminished bladder capacity (BC; = 400 ml)) displayed a unique gene expression profile.

Methods: IC/BPS patient biopsy samples for gene expression profiling were selected from our tissue bank (IRB00018552) on the basis of anesthetic bladder capacity between 200-900ml (at least two individuals at each of 12 representative BCs; 33 samples total). All patients had undergone therapeutic bladder hydrodistention per the AUA guideline algorithm. Total RNA was isolated from mucosal biopsies (per standard protocols) and assayed on whole genome microarrays (Illumina HT v4 BeadArray).

Results: Bladder capacity accounted for approximately 54% of the variation in mucosal gene expression profiles between samples (PCA plot; Figure 1, left panel). Hierarchical clustering revealed three subgroups: (1) BC 200-300ml, (2) BC 350-500ml, and (3) BC > 500 ml (heatmap; Figure 1, right panel). Subgroup #1 consisted almost exclusively of samples from individuals with low capacity and Hunners lesions (HL). This likely accounted for the large number of upregulated cytokines and chemokines (e.g. CXCL9, CCL18, CCL19, CCL21 and IL10RA) seen in this cluster. Subgroup #2 consisted of samples from patients with low capacity and mostly without HL, and Subgroup #3 were all patients with higher BC and without HL.

Conclusion: Gene expression in mucosal biopsy tissue from IC/BPS patients provides a degree of stratification when correlated with anesthetic bladder capacity. These pilot data reveal three distinct IC/BPS subgroups and information mined from differentially-expressed genes within each subgroup may provide further insight into the heterogeneity seen in IC/BPS.
Poster #M30
PCR BASED URINARY TRACT INFECTION (UTI) ANALYSIS COMPARED TO TRADITIONAL URINE CULTURE IN IDENTIFYING SIGNIFICANT UROPATHOGENS IN SYMPTOMATIC PATIENTS
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Presented By: Larry T. Sirls II, MD

Introduction: Traditional urine cultures have challenges including difficulty with polymicrobial infections and growing fastidious organisms. PCR based molecular testing can rapidly detect and accurately quantify bacterial, viral and fungal organisms. The objective of this study was to evaluate whether PCR is non-inferior to traditional urine culture in detecting organisms, and polymicrobial infections in symptomatic patients.

Methods: A retrospective review of 582 patients, minimum age of 60, with lower urinary tract infection. All patients had traditional microbiology urine cultures and PCR molecular UTI testing run in parallel. Positive culture included one or two organisms and polymicrobial infection was defined as 3 or more organisms. Clinical data were abstracted from the chart. 100 samples with PCR and culture results were validated with Next Generation 16S rRNA Metagenomic Sequencing (NGS).

Results: 582 patients, mean age 77 (60-95), with clinical UTI had urine cultures between March and July 2018. 347 (60%) were male and 235 (40%) female. Clinical symptoms included dysuria (38%), incontinence (33%), urine cloudy / odor (23%) and pain / discomfort (7%). PCR was positive in 56 % and culture was positive in 37%, Table. The agreement between PCR and urine culture for positive cultures was 91%, exceeding the non-inferiority threshold (p=0.017). PCR detected 88 polymicrobial infections compared to 13 on culture. NGS evaluated the PCR / traditional culture disagreements with excellent confirmation of PCR results in an ongoing process. The most common organisms by PCR were Actinobaculum schaali (n=124, 38%) and Aerococcus urinae (n=113, 34%), both urinary pathogens that were rarely isolated in traditional culture (n=0, 0% and n=4, 2%). The two most common organisms on traditional culture in men and women were E Coli and enterococcus but on PCR these two were the 3rd and 6th most common in women and the 4th and 5th most common in men. Importantly, PCR also detected more E Coli and enterococcus infections in both men and women than traditional culture.

Conclusion: PCR based UTI analysis is non-inferior in detecting bacterial infections to traditional culture, detecting around 50% additional positive infections and more polymicrobial infections. The accuracy of PCR UTI testing over traditional urine culture may significantly improve patient care.
Poster #M31
THE OUTCOMES OF MALE PATIENTS WITH ACUTE URINARY RETENTION AND POST-OBSTRUCTIVE DIURESIS
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Presented By: Asaf Fishelevitz, MD

Introduction: Post-obstructive diuresis (POD) occurs in a varying subset of men following relief of acute urinary retention (AUR). Some of them will develop concomitant obstructive uropathy (OU) and/or electrolyte imbalance. The literature regarding the phenomenon is scant. The aim of the study is to evaluate the success rate and outcomes of trial without a catheter (TWOC) in these patients.

Methods: An IRB-approved single-center retrospective review of the electronic medical charts of men hospitalized in the Urology Department during 2015-2016 due to AUR with POD was performed. Demographic, clinical, laboratory and imaging data were analyzed. Continuous and categorical variables were analyzed using t-test and $\chi^2$, respectively.

Results: 42/166 men (25%) hospitalized due to AUR developed POD. Median age was 66.5. The median volume of retained urine was 1200cc. In 28/42 (66%) POD lasted above 24 hours. Duration of POD (above or below 24 hours) did not correlate with demographic, clinical or laboratory parameters. In 15/42 (36%) AUR was triggered by UTI or a recent invasive urological procedure. Electrolyte imbalances (hyponatremia or hypokalemia) occurred in 16/42 (38%), however, only 3 required intervention AUR was associated with OU in 15/42 (36%). 17/27 (63%) of men without OU had successful TWOC which was correlated with a significantly lower median retained volume compared to men who failed TWOC (896.5 vs 1477.8ml, p=0.033). 3/17 (18%) who had successful TWOC developed an additional AUR within one year: one man underwent another successful TWOC, one undergone prostate surgery and one remained with an indwelling catheter. During a one year follow-up, 18/42 (42%) men with AUR and OU underwent prostate surgery within one year and 9/42 (21%) had remained with an indwelling urinary catheter or started a clean intermittent catheterization regimen.

Conclusion: Twenty five percent of male patients who were hospitalized with AUR develop POD after relief of retention. In one third of them POD resolves within 24 hours. Successful TWOC is possible in patients who had AUR with POD without OU, with success rates similar to those reported in literature for AUR in general population.
Poster #M32
IS THERE A ROLE FOR SURGICAL TREATMENT IN PATIENTS WITH PARKINSON’S DISEASE AND BENIGN PROSTATIC OBSTRUCTION?
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Presented By: Benoit Peyronnet, MD

Introduction: The aim of the present study was to assess the outcomes of benign prostatic obstruction (BPO) surgical treatment in Parkinson’s Disease (PD) patients.

Methods: All male patients with a reliable diagnosis of PD who underwent transurethral resection of the prostate (TURP) or photoselective vaporization of the prostate (PVP) for bothersome lower urinary tract symptoms (LUTS) due to BPO between 2010 and 2017 at 3 academic institutions were included in a retrospective study. Patients with doubtful neurological diagnosis (i.e. parkinsonism not formally diagnosed as PD) were excluded. The primary endpoint was clinical success defined as any subjective improvement in LUTS self-assessed by the patients 3 months after TURP or PVP or recovery of spontaneous voiding in patients with refractory urinary retention preoperatively.

Results: 42 PD patients were included: 31 and 11 treated with PVP and TURP respectively. The mean follow-up was 22.4 months. At 3 months, 29 patients reported their LUTS had improved (69%), eight that they were unchanged (19.1%) and nine that they were worsened (11.9%). Ten of the 14 patients with an indwelling catheter preoperatively recovered spontaneous voiding (71.4%). In patients voiding spontaneously preoperatively, the mean number of nocturia episodes significantly decreased at 3 months (from 3.7 to 2.1 per night; p=0.04) and so did the post-void residual volume (from 138 to 63.9 ml; p=0.008). Fourteen patients (33.3%) required overactive bladder treatments for storage LUTS postoperatively. Out of 16 patients with preoperative incontinence, seven experienced a complete resolution of their incontinence postoperatively (43.8%). Conversely, out of 26 patients with no incontinence preoperatively, three patients reported de novo urinary incontinence lasting over 6 months postoperatively (11.5%). Overall the success rate was higher in those with urodynamically proven bladder outlet obstruction (BOO) (90.9% vs. 61.3%; p=0.07). There was no de novo incontinence in this subgroup and only one reported worsened symptoms post-operatively (8.3%). BOO index was significantly associated with success (p=0.04)

Conclusion: TURP/PVP provide satisfactory outcomes in PD patients with BPO overall. However, the relatively high rates of patients with worsened symptoms (11.9%) and de novo incontinence (11.5%) postoperatively stress the need for careful patients’ selection and appropriate counseling. Urodynamically proven BOO may lower these two risks.
Poster #M33
FALLS OR FRACTURES AND ANTICHOLINERGIC BURDEN ARE ASSOCIATED WITH HIGHER ANNUAL ALL-CAUSE HEALTHCARE COSTS AMONG THOSE WITH OVERACTIVE BLADDER
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Presented By: Basia Rogula, MSc

Introduction: Higher cumulative anticholinergic exposure (‘anticholinergic burden’) among patients with overactive bladder (OAB) is associated with an increased risk of falls and fractures. However, the impact of falls/fractures on healthcare costs among those with OAB, and how these costs are impacted by anticholinergic burden, is unknown. The objective was to compare annual all-cause healthcare costs between OAB patients with and without a fall/fracture, according to anticholinergic burden status.

Methods: This retrospective study used data from the US Truven MarketScan commercial and Medicare Supplemental insurance databases from 2007-2015, and enrolled adults diagnosed with or treated for OAB between 2008-2014. A time-varying, patient-level measure of cumulative anticholinergic burden was estimated using medications from the Anticholinergic Cognitive Burden scale. Falls and fractures were identified using diagnosis and procedure codes. Costs (all-cause medications, inpatient, and outpatient services) were inflated to 2017 USD. Baseline characteristics were summarized by means (standard deviation [SD]) and percentages, as appropriate. The impact of a fall/fracture and anticholinergic burden on total annual all-cause costs ("costs"), adjusted for age and sex, was estimated using a longitudinal generalized linear mixed model using the gamma distribution and log link. Predicted annual costs were summarized according to age, sex, anticholinergic burden and fall/fracture status.

Results: The mean age (n=154,432) was 55.7 (SD: 15.2) years and 32.1% were male. At baseline, 35.4% had no and 19.1% had high anticholinergic burden. Predicted costs for a female > 65 years without anticholinergic burden or a fall/fracture were $5,441; costs increased to $13,267 with a fall/fracture, and to $19,362 with a fall/fracture and at least some anticholinergic burden. Predicted costs of a male ≤45 years without anticholinergic burden or a fall/fracture were $2,580; costs increased to $6,788 with a fall/fracture and to $11,976 with a fall/fracture and at least some anticholinergic burden. The association between costs and anticholinergic burden, age and sex were all statistically significant (p<0.001).

Conclusion: While falls/fractures were associated with the highest incremental costs, anticholinergic burden was associated with additional increases in costs, independent of fall/fracture status, age or sex. As anticholinergic burden is a modifiable risk factor and associated with falls, reducing exposure may decrease all-cause healthcare costs among patients with OAB.
Poster #M34
INCIDENCE, RISK FACTORS, AND COST OF BLADDER INJURY DURING CESAREAN SECTION IN THE NATIONAL INPATIENT SAMPLE
Christopher R. Haas, Elisabeth M. Sebesta, Joseph M. Caputo, MD Doreen E. Chung
Columbia
Presented By: Joseph M. Caputo, MD

Introduction: Iatrogenic bladder injury (BI) during cesarean section (CS) is rare (reported incidence 0.08-0.94%) but results in morbidity and increased cost to the patient and healthcare system. We sought to assess the contemporary incidence of BI, risk factors, and cost for BI during CS using the National Inpatient Sample (NIS).

Methods: A weighted estimate of 1,242,815 women hospitalized for CS was extracted from the 2014 NIS database. Bladder injury was assessed by ICD-9 codes 57.81, 57.82, 57.84, 57.87, and 57.89. Patients who sustained a bladder injury were compared with those who did not. Primary outcome endpoints were length of stay (LOS) and total hospital charges. Categorical variables were analyzed with the Chi-Square test while continuous variables were evaluated with the Mann-Whitney U test. Multivariable logistic analysis assessed risk factors for BI.

Results: In total, 535 (0.043%) patients underwent bladder repair. Compared to patients who did not have an injury, those who sustained BI were more likely to have undergone concurrent hysterectomy (22.4% vs. 0.3%, p =

Conclusion: In this contemporary cohort of patients undergoing CS, we observed a low incidence of BI. Predictors for injury included prior CS, blood transfusion, and concurrent hysterectomy. Mean hospital charges were approximately twice as high in patients who sustained BI compared to those who did not and LOS was significantly longer. Our data suggest that it may be beneficial to identify complicated patients at risk of BI during CS in order to attempt to prevent injury as well as associated morbidity and hospital costs.

Table 1: Multivariable Logistic Regression on Bladder Injury

<table>
<thead>
<tr>
<th>Variable</th>
<th>OR</th>
<th>95% C.I. for OR Lower</th>
<th>95% C.I. for OR Upper</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>1.06</td>
<td>1.02</td>
<td>1.09</td>
<td>0.001</td>
</tr>
<tr>
<td>Prior C-section (1 = yes)</td>
<td>1.96</td>
<td>1.28</td>
<td>2.92</td>
<td></td>
</tr>
<tr>
<td>Concurrent Hysterectomy (1 = yes)</td>
<td>42.53</td>
<td>22.11</td>
<td>81.81</td>
<td>0.000</td>
</tr>
<tr>
<td># Blood Transfusions</td>
<td>1.69</td>
<td>1.31</td>
<td>2.18</td>
<td></td>
</tr>
<tr>
<td>Teaching Hospital (1 = yes)</td>
<td>0.73</td>
<td>0.49</td>
<td>1.09</td>
<td>0.145</td>
</tr>
<tr>
<td>Weekend Admission (1 = yes)</td>
<td>1.01</td>
<td>0.78</td>
<td>2.18</td>
<td>0.313</td>
</tr>
<tr>
<td>Medium size hospital (vs small)</td>
<td>0.87</td>
<td>0.48</td>
<td>1.57</td>
<td>0.659</td>
</tr>
<tr>
<td>Large size hospital (vs small)</td>
<td>0.95</td>
<td>0.62</td>
<td>1.46</td>
<td>0.826</td>
</tr>
</tbody>
</table>
 Poster #M35
PREVALENCE OF FEMALE URETHRAL STRICTURE AND SURGICAL TREATMENT IN THE FEMALE MEDICARE POPULATION
Annah Vollstedt, MD, Amanda Swanton, MD, PhD, E. Ann Gormley, MD
Dartmouth-Hitchcock Medical Center
Presented By: Annah Vollstedt, MD

Introduction: Female urethral stricture (FUS) is an elusive diagnosis and historically over-diagnosed in women with lower urinary tract symptoms. Incidence rates are reported to be 3% to 13%. The prevalence of FUS may be over-inflated due to the use of treatment with urethral dilation. Current expert opinion is that true FUS should be treated with reconstruction and only rarely with urethral dilation. We sought to describe the current prevalence and treatment, including urethral dilation and reconstruction, of FUS in the female Medicare population.

Methods: Exploring 100% Medicare claims data with The Dartmouth Institute’s Atlas Rate Generator, we assessed prevalence of FUS (ICD-9 code 598.9) in 2014. Prevalence was reported at the national level, as well as the hospital referral region (HRR) level. We then assessed the number of procedures performed, including both urethral dilation (CPT codes 53660, 53661, 53665) and reconstruction (CPT codes 52400, 53020, 53430, 53450, 53460) together and then with reconstruction alone.

Results: Nationally, FUS was diagnosed 35,712 times for the 28.7 million female Medicare beneficiaries in 2014 (0.12%). There was significant geographical variation in the prevalence with an almost 100-fold difference between HRRs. There was a higher concentration of diagnoses for FUS in the southern half of the country, with the highest prevalence in Los Angeles, CA (Figure 1a). A total of 16,711 procedures were performed, including both urethral dilation and reconstructive surgeries. Of these only 92 procedures were reconstructive. 49 HRRs performed all 92 reconstructive surgeries. Given the small number of reconstructive procedure performed, data is reported as a binary (0 vs. £ 10, Figure 1b).

Conclusion: Compared to prior reports, we found a relatively low prevalence of FUS in 2014, less than 1% of female Medicare beneficiaries. Only 49 of the 306 HRR performed a total of 92 reconstructive procedures in the year 2014. Thus, despite a high failure rate of dilation for FUS and the current literature supporting reconstructive surgery, in 2014 there remained a disproportionally small number of reconstructive procedure performed in the United States.

References:
Post# M36
CYSTECTOMY AND URINARY DIVERSION FOR END-STAGE BLADDERS IS ASSOCIATED WITH LOW COMPLICATION RATES AND QUALITY OF LIFE IMPROVEMENT
Margaret Higgins, MD, Lauren Hicks, APRN, Shubhum Gupta, MD
University of Kentucky, Dept. Urology, Lexington KY
Presented By: Margaret Higgins, MD

Introduction: Urinary diversion outcomes for end-stage radiated and neurogenic bladders are well described. We aimed to evaluate the outcomes after cystectomy and urinary diversion for non-neurogenic, non-radiated end-stage bladders, a population that lacks substantive outcomes research.

Methods: We performed an IRB approved, retrospective chart review of patients undergoing cystectomy and urinary diversion for non-malignant conditions of the bladder from August 2014 to August 2017. 30- and 90-day complications were assessed. Improvement in quality of life was assessed using the single item PGI-I questionnaire.

Results: 36 patients underwent cystectomy and urinary diversion over the study period. Of these, 18 were non-radiated, non-neurogenic patients, and comprised the study cohort. Indications for diversion included recurrent infections, terminal incontinence, mesh related complications, and end-stage interstitial cystitis. All patients underwent a supratrigonal cystectomy with either an ileal conduit or an Indiana pouch urinary diversion. Median follow-up was 15.6 months. Overall 30 and 90 day complication rates were 28%,(5/18) and 50% (9/18) respectively. Only one patient (5.6%) had a Clavien 3 or higher (reoperation) complication. No mortality occurred. Most common complications were urinary tract infections (n=3, 16.7%), surgical site infections (n=3, 16.7%), and readmission (n=3, 16.7%). 15/18 patients completed the follow-up questionnaire. 93% (14/15) reported improvement in QOL with 50% reporting much improvement. 11/15 respondents reported they would do the surgery again, two were unsure and two would not repeat their decision.

Conclusion: Cystectomy and urinary diversion is a feasible option for patients with non-neurogenic, non-irradiated end-stage bladders. Serious perioperative adverse events were uncommon, and substantial improvements in QOL were noted in the long term.
Poster #M37
EARLY AND DELAYED COMPLICATIONS OF URINARY DIVERSION FOR BENIGN ETIOLOGY
Jacqueline M. Zillioux, MD1, David Rapp, MD1, Luriel Smith-Harrison, MD2,3, Matthew Wang, BS1, Raymond Costabile, MD1
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Presented By: Jacqueline M. Zillioux, MD

Introduction: There are limited studies evaluating outcomes following urinary diversion for benign indications. We sought to analyze complications following urinary diversion for non-malignant conditions, with specific focus on early and delayed complications over long-term follow-up.

Methods: We performed a retrospective review of patients undergoing urinary diversion for benign indications between January 2000 and December 2017. Data were collected including patient demographic and clinical characteristics, with focus placed on surgical characteristics and post-operative complications. Complications were graded according to the Clavien-Dindo classification and were classified as early (≤90 day post-operatively) or delayed (>90 days post-operatively). Logistic regression was used to assess for predictors of developing complications after urinary diversion.

Results: A total of 73 patients were identified for study analysis with median follow-up of 24 (6-71) months. Seventy and 23% of patients underwent diversion for neurogenic bladder and complications related to pelvic radiation, respectively. A majority (93%) underwent ileal conduit with the remainder undergoing continent diversion. A total of 133 complications were identified, comprising 56 early and 77 delayed. Accordingly, 77% of patients had at least one complication during the follow-up period. Fifty-one and 75% of patients experienced early and delayed complications, respectively. Complications of Clavien-Dindo Score ≥IIIB were seen in 48% of patients. The most common early complications included wound infection (15%), prolonged ileus (8%), and urinary tract infection (UTI) (7%). Urinary tract infection (39%), nephrolithiasis (31%) and uretero-enteric anastomotic stricture (17%) were the most frequent delayed complications. Univariate followed by multivariate logistic regression modeling found BMI and operative length (hr) to be independent positive predictors of complication (OR 1.16 and 2.49, respectively, p=0.01).

Conclusion: Our study demonstrates that urinary diversion for benign etiologies is associated with a significant rate of complication. A large percentage of these occur in the delayed period and are classified as serious complications. BMI is an independent predictor of complication in this population.
Poster #M38

OUTCOMES OF URINARY DIVERSION CREATED FOR LATE ADVERSE EFFECTS OF GYNECOLOGIC RADIOTHERAPY

Daniel W. Smith, MD1, John T. Stoffel, MD2, Joseph Pariser, MD1, Jacob Albersheim-Carter, MD1, Rachel Moses, MD2, Diana O’Dell, MPH3, John Stoffel, MD3, Jeremy Myers, MD2, Sean Elliott, MD1

1University of Minnesota Department of Urology, 2University of Utah Division of Urology, 3University of Michigan Department of Urology

Presented By: John T. Stoffel, MD

Introduction: Severe urinary adverse effects of radiation are seen in 17% of women treated for gynecologic malignancies. This incidence continues to climb through at least 25 years post-radiation. Reconstructive options are fraught with morbidity as surgical repair of vesicovaginal fistula and radiation-induced ureteral stricture are prone to failure due to local effects of radiotherapy. Urinary diversion represents an option for devastated anatomy, though some patients are notably frail. We sought to elucidate the risks of urinary diversion in patients with a history of radiation for gynecologic malignancy.

Methods: A retrospective review was performed of patient records during the period of 2008 – 2018 from three tertiary centers. Women were identified who underwent continent or incontinent urinary diversion for urinary adverse effects of gynecologic radiotherapy. Indications for diversion included: radiation cystitis, fistula, incontinence, perineal wounds, and urinary tract stricture disease. Sarcopenia was determined by Slice-o-matic software (Tomovision, Quebec, CA) by skeletal muscle index (SMI) based on preoperative CT when available. Outcomes include any post-operative complication within 90 days of surgery as well as 30-day readmission rate. Long-term outcomes, including ureteral stenosis, stomal complications, fistula, renal dysfunction, and bowel function, were also examined.

Results: A total of 34 patients from three institutions were included for analysis. The majority were white/Caucasian (73.5%). Median BMI was 24 kg/m2 (interquartile range [IQR] 19.4 – 30). 26/34 (76.5%) underwent non-continent diversion. Median EBL was 300 (IQR 150 – 500). 25/34 (73.5%) of women experienced complications within 90 days; 9/34 (26.5%) experienced high grade (Clavien grade 3 and above) complications. 11/34 (32.4%) of women were readmitted within 30 days. Patients who experienced high grade complications had more sarcopenia (SMI 38.1 vs. 45.7, p=0.047) compared to those who did not.

Conclusion: Urinary diversion for late adverse effects of gynecologic radiotherapy is fraught with complications. Patients experiencing high grade complications had lower skeletal muscle index. Patients and surgeons should consider risks and benefits when deciding to proceed with urinary diversion, especially in the setting of a frail patient.
Introduction: Over the last decade, the use of light-weight polypropylene mesh (LWPPM) has increased for robotic sacrocolpopexy (RSC) to reduce mesh-related complications such as pain or mesh extrusion. Long-term results of this mesh have not been evaluated, and there are concerns that this product will offer inferior results due to stretching or rupture of the material. This study compares surgical outcomes with 2 types of mesh material for RSC.

Methods: Following IRB approval, a 2-surgeon POP database of women who underwent RSC at a single institution was reviewed. No concomitant prolapse procedures were performed with the RSC. Minimum follow up time was 6 months. Patients were stratified by mesh weight: Boston Scientific Marlex™ natural Trelex mesh or Atrium™ ProLite mesh (HWPPM) versus Caldera Medical Vertessa® Lite Y Polypropylene Mesh (LWPPM). Patient demographics and physical examination including POP-Q staging were reviewed. Success was defined using a composite of absence of prolapse symptoms at the patient's most recent visit, no POP-Q point beyond the hymen, and no reoperation for POP.

Results: From 2008 to 2018, 132 patients met study criteria, 84 with LWPPM and 48 with HWPPM. The two groups were similar except for prolapse stage (LWPPM group had more stage 3 and HWPPM group had more stage 2 (p<0.001)), and follow up duration (HWPPM 28.8 months versus 13.0 months (p<0.001)). Post-operatively, there was no difference between the rate of prolapse beyond the hymen or re-operation rate between the two mesh cohorts (see Figure 1). More patients in the HWPPM did report prolapse symptoms post-operatively (p=0.001); however, only one patient with HWPPM had an apical failure (p=0.184). A very low percentage of secondary posterior compartment prolapse was noted in both groups. Mesh extrusion rates varied (2.4% for LWPPM versus 10.4% (p = 0.047)); however there was no difference in the rate requiring surgical mesh excision (p=0.106).

Conclusion: RSC using LWPPM is a safe and effective procedure. Success rates using LWPPM are not inferior to those using HWPPM. Complication rates were low with either mesh. Findings are limited by the significantly shorter follow-up of the LWPPM group.
Poster #M40
HOW CAN A PATIENT FIND RELIABLE INFORMATION ONLINE? MACHINE LEARNING ALGORITHMS SUCCESSFULLY IDENTIFY THE QUALITY OF LAY-PERSON DIRECTED ARTICLES
Kai B. Dallas, MD1, Lisa Rogo-Gupta2, Christopher S. Elliott1,3
1Stanford University, Department of Urology, 2Stanford University, Department of Obstetrics and Gynecology, 3Santa Clara Valley Medical Center Division of Urology
Presented By: Kai B. Dallas, MD

Introduction: Over 80% of patient’s report researching their medical conditions online, however there is very little available to guide them in assessing the quality/accuracy of the information encountered. We applied machine learning algorithms to online material pertaining to the controversial topic of vaginal mesh, with the goal of creating a tool to assess material quality.

Methods: A Google search was performed for the term “vaginal mesh”. The complete text of the first 200 hits in Google (ie articles, blogs, advertisements etc.) were independently assessed by two pelvic medicine and reconstructive surgery fellowship trained academicians for content quality. An article was defined as poor quality if it was factually inaccurate or biased. The reviewers were presented only with the text of the article and blinded from their colleagues assessment, to reduce bias. If there was disagreement, a third party classified the article to resolve the scoring. The Naïve Bayes algorithm was applied to predict the quality of the article. The articles were randomly partitioned into a training and testing subsets, with the models performance evaluated by its accuracy in assessing the quality of the test subset.

Results: A total of 70% of the sources were determined to be of poor quality. The reviewers independently agreed 88% of the time on the quality of the article. There was interesting difference in the frequency of commonly used words between the article types (Figure 1). The algorithm overall correctly classified the test groups quality 88% of the time with a 6% “false-negative” rate (an article of poor quality being predicted as good quality) and a 6% “false-positive” rate (an article of good quality being predicted as poor quality). The positive predictive value, negative predictive value, sensitivity and specificity were 91%, 84%, 91% and 84%, respectively.

Conclusion: We demonstrate that machine learning algorithms can correctly identify the quality articles related to vaginal mesh in an accurate fashion. This is a promising start in the development of tools to guide patients in their independent research. Future directions will be to refine our current machine learning on the subject of vaginal mesh and expand the learning to a greater breadth of medical topics.
Poster #M41
CADAVERIC STUDY OF SACRAL FIXATION TECHNIQUES FOR SACROCOLPOPEXY
Giulia Lane, MD, Iryna Crescenze, MD, Payton Schmidt, MD, Anne Cameron, MD, Paholo Barboglio-Romo, MD, Priyanka Gupta, MD
University of Michigan
Presented By: Giulia Lane, MD

Introduction: Several techniques have been described in regards to the location and the type of suture utilized to fixate mesh to the sacrum during sacrocolpopexy. A permanent suture should be used to secure the mesh near the level of the sacral promontory (ref). This placement is challenging with robotic sacrocolpopexy due to lack of tactile sensation and the angle of visualization. Suture placement higher on the promontory has been advocated to avoid bleeding complications, however this may be associated with risk for discitis. The aim of the study was to evaluate the location and depth of placement of sacral sutures in a cadaveric sacrocolpopexy model.

Methods: This study was approved by the University Anatomical Donations Program. Following an instructional session with review of female pelvic anatomy and sacrocolpopexy techniques, Urology trainees performed an open sacrocolpopexy on four cadavers in two separate sessions. The pelvis was placed in Trendelenburg position. Retroperitoneal vaginal dissection was performed and Y-mesh was fixated to anterior and posterior vagina under guidance by attending. PDS or Gore-Tex Suture was placed by each trainee at the sacral promontory. At completion of the session, the surrounding tissues were dissected and the location and depth of each sacral suture was identified.

Results: A total of 19 sutures were placed by 14 trainees into 8 cadavers. The majority of sutures (14/19, 74%) were placed between L5 and S1. Three sutures (16%) were placed at L5 and two (11%) were placed at the S1 vertebral body. The anterior longitudinal ligament (ALL) measured 1 mm in depth in 4 cadavers measured. When assessing depth, 13/19 (68%) were placed into the ALL without penetrating the disc space. Two sutures (11%) was placed in the tissues superficial to the ALL and four (29%) were placed deep to the ALL into the periosteum or disc. No sutures were placed through a vascular structure.

Conclusion: A cadaver model for sacrocolpopexy is useful to teach anatomy, practice surgical dissection and analyze mesh fixation. The study showed that location of sacral fixation is variable. While most (74%) sutures were placed at the L5-S1 disc space, the suture was placed too deep 21% (4/19) of the times.
TOTAL AUTOLOGOUS FASCIA LATA ANTERIOR AND APICAL SUSPENSION FOR THE TREATMENT OF PELVIC ORGAN PROLAPSE: EXPERIENCE IN THIRTY-THREE PATIENTS

Fahad Chaus, MD, MBA, Jayce Pangilinan, BA, Joel Funk, MD, Christian Twiss, MD
University of Arizona - Division of Urology, Tucson, Arizona
Presented By: Fahad M. Chaus, MD, MBA

Introduction: Since the reclassification of transvaginal mesh as a high-risk device, there is renewed interest in non-mesh pelvic organ prolapse (POP) repair. Our goal was to develop a transvaginal repair for anterior and apical vaginal prolapse with the use of only autologous fascia lata graft. We report our experience in our first 33 patients.

Methods: Autologous Anterior and Apical Pelvic Organ Prolapse (AAA-POP) repair utilizes a 4 cm x 14 cm piece of fascia lata harvested through a single 3-4 inch lateral upper thigh incision. The graft is cut into 3 strips approximately 1.3 cm x 14 cm which are reconfigured to provide apical fixation to the sacrospinous ligaments and distal fixation to the obturator fascia at the level of the bladder neck. Patients were followed by history, SEAPI scores, POP-Q scores, and symptoms related to thigh harvest including visual analog pain (VAP) scores. Treatment failure was defined as symptomatic anterior and/or apical POP.

Results: The AAA-POP procedure was performed on 33 patients with a mean age of 62. Mean follow-up was 8 months (range 1-25 months), with 10 patients having 12 or more months of follow-up. 13 patients had prior vaginal mesh removal. POP symptoms resolved in 32 patients, and there was one treatment failure (Stage II uterine POP). Ten patients developed post-operative retention, nine of whom had undergone concurrent pubovaginal sling. Four of the retention patients required urethral dilation, and five underwent sling lysis. The overwhelming majority of harvest site issues were minor and managed expectantly. Mean VAP score at the harvest site was 0.24. Five patients developed non-bothersome thigh bulges, all of which were managed expectantly. Harvest site seroma occurred in 4 patients and all resolved with 2 requiring simple aspiration. Eight patients reported mild, non-bothersome harvest site paresthesia. No thromboembolic events occurred.

Conclusion: AAA-POP repair is an efficacious treatment for the mesh-injured and other patients who desire non-mesh POP repair. Patients should be counseled regarding harvest site issues, which typically resolve with expectant management alone. Patients undergoing concurrent pubovaginal sling should be counseled regarding the risk of urinary retention. Continued follow-up of this series is ongoing to determine long-term success of AAA-POP repair.
Poster #M43
ADVANCED OAB THERAPIES ARE EQUALLY EFFECTIVE IN UNTREATED AND TREATED PELVIC ORGAN PROLAPSE PATIENTS
Raveen Syan¹, Shannon L. Wallace, MD², Michelle Torosis², Eric Sokol²
¹Stanford University, Department of Urology, ²Stanford University, Department of Urogynecology
Presented By: Raveen Syan

Introduction: 68% of patients with anterior and/or apical prolapse (POP) experience OAB symptoms. Though POP treatment can improve OAB in 69-85%, management of refractory OAB in untreated POP patients is not well described. We sought to compare subjective improvement rates following advanced OAB therapies in untreated and treated POP.

Methods: We performed a retrospective review of all patients with OAB and anterior and/or apical POP who received an advanced OAB therapy (sacral neurostimulation (SNS), bladder chemodenervation or peripheral tibial nerve stimulation (PTNS)) in a single institution from 1999-2017. Patients with neurogenic bladder or urinary retention were excluded. Treated POP was defined as pessary use or surgical repair. Patient characteristics and subjective improvement rates were measured following advanced OAB therapy. Need for a second advanced OAB therapy was collected.

Results: We identified 53 patients with untreated and 26 patients with treated POP who received an advanced OAB therapy. Groups were similar in age and race/ethnicity. Untreated POP was less likely to have stage 3 cystocele and stage 3 apical prolapse than treated POP (19% vs 2%, p<0.01 for both). Amongst patients who underwent surgical POP repair, the majority had cystocele repair alone (63%). Mesh was placed in 37% of patients, of which 57% were biologic grafts. Concomitant mid-urethral slings were placed in 74% of patients, of which 36% were biologic slings. Patient reported improvement rates following initial third line therapy were similar between untreated and treated POP (74% vs 65%, p=0.60), and there was no statistically significant difference in improvement rates across the three advanced therapies between untreated and treated POP (Figure 1). Use of a second advanced OAB therapy was similar between groups, (17% vs 35%, p=0.09). Though on regression analysis treated POP was not associated with patient reported improvement rates when stage of cystocele and apical prolapse was controlled for, a similar regression analysis controlling for cystocele and apical prolapse stage revealed treated POP patients were more likely to undergo a second advanced therapy (OR 3.80, 95% CI 10.9 13.18, p=0.04).

Conclusion: Advanced OAB therapies are equally effective in patients with untreated and treated anterior and/or apical POP and should be offered to both populations of patients.
Introduction: Increased understanding of male lower urinary tract function and its complexity has led to a need for improvements and standardization in the terminology for male lower urinary tract and pelvic floor symptoms and dysfunction. To that end a need for an updated male-specific approach via a clinically-based consensus report was identified.

Methods: This report combines the input of members of the Standardisation Steering Committee (SSC) of the International Continence Society (ICS) in a 16 author Working Group with geographically diverse recognized experts from multiple Societies including SUFU. Appropriate core clinical categories and a subclassification were developed to give a numeric coding to each definition. An extensive process of 22 rounds of internal and external review was developed to exhaustively examine each definition or descriptor, with decision-making by collective opinion (consensus). There were 4 live meetings and 4 teleconferences. Final reviews included 8 expert external reviewers, open ICS website review, SSC and Board reviews.

Results: The first male-specific Report for lower urinary tract and pelvic floor symptoms and dysfunction, encompassing approximately 389 separate definitions/descriptors, has been developed. It is the first review of male terminology in 17 years. Its overdue nature is witnessed by 211 (54%) definitions being new and 71 (18%) changed respectively (TABLE) compared with earlier combine male/female terminology reports. It is clinically-based with all four components leading to the diagnoses defined: symptoms, signs investigations, imaging. Clarity and user-friendliness have been key aims to make it interpretable by clinicians and trainees in all the different specialty groups involved in male lower urinary tract and pelvic floor dysfunction. Male-specific imaging (ultrasound, radiology, CT and MRI) has been a major addition while appropriate figures (23) and tables (2) have been included to supplement and help clarify the text. Ongoing review is not only anticipated but will be required to keep the document updated and as widely acceptable and relevant as possible.

Conclusion: The first male-specific Terminology Report for lower urinary tract and pelvic floor symptoms and dysfunction has been produced and should be a significant aid to clinical practice and research.
"I DON'T KNOW ANYONE WHO PEES ON THEMSELVES ON PURPOSE": EXPLORING WOMEN'S AND ADOLESCENTS' LAY DISCOURSE ABOUT BLADDER HEALTH AND FUNCTION

Beverly R. Williams1,2, Jesse Nodora3, Diane K. Newman4, Lisa Kane Low5, Aimee S. James6, Deepa R. Camenga7, Jeni Hebert-Beirne8, Sonya S. Brady8, Cecilia T. Hardacker10, Kathryn L. Burgio1,2, for the PLUS Consortium11

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Presented By: Beverly R. Williams

Introduction: The Study of Habits, Attitudes, Realities, and Experiences (SHARE), a qualitative study of the Prevention of Lower Urinary Tract Symptoms (PLUS) Research Consortium, explored women’s and adolescents’ experiences, perceptions, beliefs, knowledge, and behaviors about bladder health/function. This analysis characterized lay language and terminology usage related to bladder health/function, articulating social processes shaping lay discourse.

Methods: Forty-four focus groups were conducted across seven U.S. research centers with 360 women and adolescents, organized by six age categories. Focus groups were audio-recorded and transcribed. Following transcript and fieldnote coding, multi-level content analyses classified emergent themes. A transdisciplinary lens and inductive approach guided data interpretation of the “lay terminology” code. A team of investigators developed interpretive insights, which were validated by a community engagement panel.

Results: A repertoire of bladder function terms emerged, including explicit functional terms, formal, polite euphemistic terms, informal familiar terms and cultural, regional metaphors and idioms. Terminology usage was historically-grounded, developmental and cumulative across the life course. Lay discourse was contextual and affectively valent, suggesting unspoken, commonly understood, situation-based “rules” for talking about bladder function. Bladder health/function discourse appeared siloed in family and friendship circles using anecdotes, storytelling, and cautionary tales. Women and adolescents often described rather than named bladder sensations or problems. Bladder issues were depicted on a continuum of severity and frequency, with medical language relevant to extreme examples and not mild episodic occurrences. Urine leakage and nighttime voiding were described as private issues or nuisances, primarily affecting women of certain ages or situations, and less often as a health concern.

Conclusion: Findings suggest a definitional discordance between medical and lay views of bladder problems. Women and adolescents may not have terminology for distinguishing clinical conditions (incontinence) and psychological experiences (shame). They may be stigmatized when medical labels are applied to urinary conditions. Their descriptive accounts neither extend lay discourse beyond personal anecdotes to science nor exhibit a bladder vocabulary for translating stories of personal trouble into issues of public health. Educating women and adolescents to shift from “nuisance-focused” conversations to “health-focused” discourse is a health promotion and health education issue, requiring public health messaging about bladder health literacy and health-promoting behaviors rather than stigmatizing clinical conditions.

Poster #NM3 - WITHDRAWN
Poster #NM4
CORRELATION OF SYMPTOM SEVERITY AND BOTHER IN INDIVIDUALS SEEKING CARE FOR LOWER URINARY TRACT SYMPTOMS
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Presented By: Nnenaya Q. Agochukwu, MD

Introduction: The degree of bother attributed to lower urinary tract symptoms (LUTS) drives care seeking and treatment aggressiveness. The longitudinal correlation of symptom severity and bother, however, is not well understood. In this study, we conducted a longitudinal evaluation of the correlation between symptom severity and bother in men and women seeking care for LUTS.

Methods: Men and women with LUTS seeking care at 6 tertiary care centers were enrolled in The Symptoms of Lower Urinary Tract Dysfunction Research Network (LURN) Observational Cohort Study. Participants completed the LUTS Tool questionnaire, which includes 22 questions that evaluate an individual’s LUTS symptom severity and bother. Polychoric correlations between symptom severity and bother were calculated for all 22 symptoms at baseline, 3 and 12 months. Repeated measures linear regression models were used to assess differences in correlations between males and females, and over time.

Results: 519 men and 545 women reported on their symptoms at any of the three time points. There were no racial or ethnic differences between men and women (p-value=0.620 and 0.907, respectively). BMI was similar between men and women (28.6 vs 29.3, p-value=0.448). Men were older than women (61.2 vs 56.4, p-value

Conclusion: The relationship between LUTS severity and bother is complex, and effective treatments should improve both. Individual LUTS severity and bother values correlate highly but not perfectly. In most situations (including clinical care), measurement of both is likely redundant.
Poster #NM5

OVERACTIVE BLADDER MEDICATION PRESCRIBING HABITS OF UROLOGISTS AND PRIMARY CARE PHYSICIANS

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Presented By: Kevin J. Chua, BS

Introduction: Both urologists (URO) and primary care physicians (PCPs) are involved in medical management of overactive bladder (OAB). Indeed, this is a common clinical problem with a well-defined treatment algorithm. Options for medical management of OAB have burgeoned in recent years. However, it is unclear to what extent PCPs are involved in prescribing novel and varied agents for this condition. In this study, we sought to describe PCP prescribing habits for OAB and compare with those of urologists.

Methods: Using the 2015 Medicare Part D Public Use File, we identified URO and PCPs (including internal medicine [IM] and family medicine [FM] physicians) who prescribed at least one OAB medication. OAB medications included oxybutynin, tolterodine, trospium, darifenacin, solifenacin, fesoterodine and mirabegron. We required a minimum provider claim count of 50 claims to avoid skewing of data by low volume prescribers. We compared the proportion of URO vs. PCPs who prescribed one versus multiple OAB medications, and who prescribed each of the agents in this category. Significance levels were calculated with the chi-squared test for categorical variables and Mann-Whitney U Test for continuous variables.

Results: Within this Medicare Part D sample, 87% (8,649) URO, 36% (38,377) IM and 46% (45,100) FM prescribed an OAB medication in 2015. Out of prescribers, 84% (7,279) URO, 41% (15,588) IM and 35% (15,897) FM had at least 50 claims. URO were less likely to prescribe only one OAB medication, and were more likely to prescribe multiple agents compared to PCPs (Table 1). A greater percentage of URO prescribed the following medications more than IM and FM physicians: trospium (27.8%, 6.1%, 5.1% respectively), darifenacin (15.4%, 4.7%, 3.8% respectively), solifenacin (88.2%, 66.1%, 63.2% respectively), fesoterodine (53.6%, 17.5%, 17.5% respectively) and mirabegron (80.0%, 25.3%, 21.7% respectively).

Conclusion: URO were more likely to prescribe diverse OAB agents, as well as utilize newer agents such as mirabegron. This was expected as urologists more often see patients with refractory symptoms. However, a subset of PCPs did prescribe novel and varied agents for OAB. PCPs should be encouraged to evaluate and treat uncomplicated OAB, and should be educated on how various medications may be more or less appropriate for their patients.
Poster #NM6

CYSTECTOMY AND ILEAL CONDUIT FOR NEUROGENIC BLADDER: COMPARISON OF THE OPEN, LAPAROSCOPIC AND ROBOT-ASSISTED APPROACHES

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University of Rennes

Presented By: Benoit Peyronnet, MD

Introduction: The aim of this study was to compare the outcomes of robotic cystectomy (RC) vs. laparoscopic cystectomy (LC) vs. open cystectomy (OC) with ileal conduit in patients with neurogenic lower urinary tract dysfunction.

Methods: All patients who underwent cystectomy for neurogenic bladder between 2004 and 2017 in a single center were included in a retrospective study. The urinary diversion was an ileal conduit in every case in the three groups and extracorporeal in all patients. The surgical approach relied mostly on the era distributed consecutively as follows: open era (2004-2007), laparoscopic era (2007-2011), and robotic era (2012-2017). Complications were recorded and graded according to Clavien classification. Major complications were defined as complication Clavien grade ≥3.

Results: Ninety patients were included: 41 RC, 23 LC and 26 OC. Most of the patients’ characteristics were comparable between the three groups but there were more spina bifida patients in the open group (19.2% vs. 4.6% vs. 2.4%; p=0.04) and a trend towards a higher rate of patients with history of previous abdominal surgery in this group (57.1% vs. 38.1% vs. 30.8%; p=0.14). The operative time was shorter in the open group (295.6 vs. 383.7 vs 374.4; p=0.07) while length of stay was shorter in the robotic and laparoscopic group (16.5 vs. 13.5 vs. 13.2 days; p=0.03). Time to return of bowel function was decreased in the robotic and laparoscopic groups (5.3 vs. 4 vs. 3.7 days; p=0.14) and start of oral intake occurred sooner during the postoperative course in the robotic group (5.4 vs. 3.9 vs. 3.3 days; p=0.08) but this did not reach statistical significance. Morphine pumps were used more often in the open and laparoscopic groups compared to the robotic group (62.5% vs. 77.8% vs. 22.7%; p=0.003). The rate of major complications was lower in the robotic group (30.8% vs. 30.4% vs. 9.8%; p=0.05).

Conclusion: The laparoscopic approach, with or without robotic assistance, might decrease the perioperative morbidity of cystectomy for neurogenic bladder. The benefit of the robotic over the pure laparoscopic approach in this series was to decrease the rate of major postoperative complications and the post-operative pain, and possibly to shorten the learning curve.
Poster #NM7

SPINAL CORD INJURY PATIENTS PERFORMING CLEAN INTERMITTENT CATHETERIZATION HAVE MORE SEVERE BOWEL SYMPTOMS COMPARED TO PATIENTS WITH INDWELLING CATHETER, NEUROGENIC BLADDER RECONSTRUCTIVE SURGERY, OR VOIDING

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Presented By: Iryna M. Crescenze, MD

Introduction: Bowel dysfunction and severe bowel symptoms are common in Spinal Cord Injured (SCI) patients. The aim of this study was to investigate predictors for severe bowel symptoms in SCI patients and whether type of neurogenic bladder management plan was associated with more severe bowel symptoms.

Methods: The Neurogenic Bladder Research Group (NBRG) registry is a multicenter, prospective, observational study, which measures neurogenic bladder (NGB) related quality of life (QOL) after SCI. Eligibility included: age ≥18 years and acquired SCI. Over 1.5 years, 1479 eligible participants were enrolled. Univariate analysis and Multivariate logistic regression was used evaluate associations between QoL and demographic variables. Bowel symptoms were assessed by Neurogenic Bowel Dysfunction score and patients scoring > 14 were categorized as having severe bowel symptoms. Bladder management was categorized as: voiding, clean intermittent catheterization (CIC), surgery (augmentation/diversion) or indwelling catheter.

Results: Baseline demographics are displayed in Table 1. There were 585 (40%) individuals with severe symptoms and 894 with non-severe. SCI patients performing CIC had the highest percentage of people reporting severe bowel symptoms (48%) followed by indwelling (25%), surgery (16%), and voiding (12%) (pT6) level of injury (p=0.005), incomplete injury (p=0.025) and autonomic dysreflexia (p=0.048). The presence of colostomy (p<0.001) and SF-12 (physical) questionnaire (0.037) were protective. All these were modeled into multivariate analysis and only AD (p=0.027) and type of management (p<0.001) were significantly associated with more severe symptoms.

Conclusion: Severe bowel symptoms are significantly associated to the management type of neurogenic bladder. Patients doing intermittent CIC had the worse bowel symptoms. Urologist should assess both bladder and bowel symptoms when counseling on type of management for neurogenic bladder.

Table 1. Baseline Demographics

| Age (mean ± SD) | 45 ± 13 |
| BMI (mean ± SD) | 27 ± 7 |
| Male gender (%) | 60% (894/1479) |
| Higher than T7 (%) | 62% (921/1479) |
| Complete SCI (%) | 30% (454/1479) |
| Colostomy (%) | 5% (74/1479) |
| Pain (%) | 60% (894/1479) |
| Bachelor’s degree (%) | 41% (595/1479) |
| AD (total score) | 7 ± 4 |
| NBD (total score) | 12 ± 7 |
| NBB5 (total score) | 24 ± 11 |
| SF-12 physical | 40 ± 11 |
| SF-12 mental | 45 ± 11 |
| Indwelling catheter (%) | 10% (275/1479) |
| Surgery (%) | 13% (195/1479) |
| CIC (%) | 51% (754/1479) |
| Voiding (%) | 19% (255/1479) |

Mean ± Standard Deviations for Continuous Variables and Percentage for Categorical.
THE ROLE OF PUBOVAGINAL SLING IN WOMEN FOR MANAGEMENT OF URINARY INCONTINENCE IN NEUROGENIC BLADDER

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Presented By: Rachel Bergman

Introduction: Despite its utility in the non-neurogenic population, limited objective data exists regarding the long-term efficacy associated with autologous pubovaginal sling (PVS) placement in patients with stress urinary incontinence (SUI) and neurogenic bladder (NGB). The aim of this work was to assess the outcomes of PVS in management of SUI in female patients with NGB.

Methods: This study was a retrospective chart review of patients with a diagnosis of NGB who received an autologous PVS from January 1st, 2000 - December 31st, 2017. Patients were identified using CPT codes from the hospital electronic medical record. Patient-reported outcome measures include the American Urologic Association Symptom Index (AUA-SI), Incontinence Symptom Index (ISI), and subjective report of incontinence.

Results: Between 2000 and 2017, 82 women with NGB receiving PVS were identified and 31 met the inclusion criteria. Mean age of the cohort was 55±16 years and BMI of 28.7±7 kg/m2. The top three neurological diagnoses included spinal cord injury (n=12), myelodysplasia (n=6), and multiple sclerosis (n=3). Six patients (19.3%) had previously failed PVS. Preoperatively, patients were managed with clean intermittent catheterization (CIC) (64.5%), indwelling Foley catheter (16.1%), suprapubic tube (SPT) (3.2%), and ileovesicostomy (6.4%). Twenty-nine patients (93.5%) leaked per urethra and two (6.7%) were dry only while managed with urethral catheter. Five of the 31 slings (16.1%) were placed with a crossover technique, and 21 patients (67.7%) had concomitant procedures including 8 augmentations, 3 ileovesicostomies, and 4 SPTs. With a mean follow-up of 36±24 months, 23 patients (74.2%) reported continued pad use and incontinence. Mean AUA-SI scores decreased from 14.8±9.8 to 9.7±10.3 (p=0.002), AUA-QoL from 5.0±1.87 to 2.9±2.1 (p=0.100), ISI-Severity from 17.3±10.1 to 10.7±9.5 (p=0.039), and ISI-Bother from 4.2±2.6 to 3.2±2.6 (p=0.016) (Figure 1). Four women required ileal conduit for persistent incontinence.

Conclusion: While most patients continued to have incontinence after autologous PVS, the AUA-SI, ISI severity and bother significantly improved with treatment. Because this data is limited by a small cohort and retrospective nature of review, further studies are needed to better understand the role of PVS as a treatment option for SUI in patients with NGB.

Figure 1:
Poster #NM9

UROLOGICAL OUTCOME OF UNTETHERING SURGERY FOR PATIENTS OF OCCULT SPINAL DYSRAPHISM WHOSE INITIAL SYMPTOM DEVELOPED IN ADULTHOOD

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Presented By: Hee Seo Son, MD, PhD

Introduction: Most of spinal dysraphisms are diagnosed early in life. However, even in the modern era of advanced medicine, some rare cases of occult spinal dysraphism are missed in early detection, and go well until their adulthood without any neuro-urological symptom; named, adult onset tethered cord syndrome (AOTCS). Little is known on the prognosis of AOTCS. We have investigated the impact of untethering surgery and symptom duration on the urodynamic disorder in AOTCS.

Methods: Occult spinal dysraphism patients whose initial symptom had developed in adulthood were evaluated. Preoperative urodynamic studies were performed just before untethering. Postoperative urodynamic studies were performed at least three months after untethering. Pre and postoperative urodynamic parameters and duration of symptom were analyzed using Spearman Rank correlation test and Wilcoxon Signed Rank test.

Results: 26 patients (male 9, female 17) were evaluated. The median age at symptom onset was 34.9 (18.0~54.7), the median age at untethering was 42.0 (18.4~67.2). The median time interval between symptom onset and untethering was 29.9 (1.1~249.4) months. There was no significant correlation between symptom duration and preoperative urodynamic parameters; bladder compliance (BC) (rho=-.118, P=0.566), maximum cystometric capacity (MCC) (rho=.037, P=0.859), detrusor pressure (Pdet) at end-filling (rho=.095, P=0.645), and post-void residual urine volume (PVR) per MCC (rho=.208, P=0.308). For 18 patients, postoperative urodynamic studies were performed at median period of 31.3 (3.2~124.8) months after untethering. On analysis of pre and postoperative urodynamic parameters, significant correlation was observed in BC (rho=.614, P=0.007), Pdet at end-filling (rho=.484, P=0.042), and PVR/MCC (rho=.592, P=0.010). However, there was no correlation in MCC (rho=.271, P=0.276)(Figure 1.). In paired comparison of urodynamic parameters before and after untethering, no significant change was observed in BC (P=0.777), MCC (P=0.112), Pdet at end-filling (P=0.979), and PVR/MCC (P=0.074).

Conclusion: In patients with OSD whose initial symptom developed in adulthood, the duration of symptom was not correlated with the urodynamic parameters at initial diagnosis. As there was significant correlation of urodynamic parameters before and after surgery, without significant difference, untethering might not be beneficial in correcting the urodynamic disorder of AOTCS.
Poster #NM10
EXPLORING THE BOWEL AND BLADDER DYSFUNCTION RELATIONSHIP IN A MULTIPLE SCLEROSIS POPULATION
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Presented By: Dora K. Jericevic

Introduction: In the non-neurogenic population, there is a body of evidence supporting bladder-bowel “cross-talk.” This cross-talk is attributed to the common neural pathways of the bladder and colorectum, which may explain the co-occurrence of urological and gastrointestinal functional disorders. To our knowledge, no study to date has explored the co-occurrence of bladder and bowel dysfunction in a multiple sclerosis (MS) population. The aim of this study was to explore the relationship between bladder and bowel dysfunction in MS patients.

Methods: Between 2015 and 2018, consecutive patients with overactive bladder (OAB) symptoms seen by a urologist at an MS center were offered enrollment into a prospective observational study. Demographics and standardized questionnaires were collected; these included the OAB questionnaire short form (OAB-qSF), MS Quality of Life Inventory (MSQLI) bladder and bowel severity scales, and Patient Assessment of Constipation Symptoms (PAC-SYM). MS diagnosis duration, MS type, and mobility status were used as surrogates for MS severity. Pearson correlation tests and linear regression analyses were performed to assess the relationship between bowel and bladder dysfunction.

Results: 56 patients were included in the analysis. Mean age was 59.3±11.3 with 68% females. The mean duration of MS diagnosis was 11.7±8.4 years, 76.5% had relapsing-remitting MS type, and 25% used a walker or wheelchair. There was a statistically significant correlation between OAB-qSF and PAC-SYM total score (ρ=0.28; p=0.03), as well as between MSQLI bladder and bowel severity scales (ρ=0.33; p=0.01 in Figure 1). On multivariate analysis, adjusting for age, gender, BMI, MS type, and MS duration, MSQLI bladder severity scale remained significantly associated with MSQLI bowel severity scale (β=0.34; p=0.02), but the association between OAB-qSF and PAC-SYM was no longer statistically significant (β=0.24; p=0.11).

Conclusion: Paralleling what has been observed in the non-neurogenic population, our data suggests that there may also be a moderate relationship between bladder and bowel dysfunction in MS patients. Further studies are needed to determine whether this relationship is underpinned by MS pathology or the same mechanisms that have been observed in the non-neurogenic population.

Figure 1: relationship between MSQLI bladder severity scale and bowel severity scale (p-value=0.01)
OUTCOMES OF INTRADETRUSOR BOTULINUM TOXIN INJECTION IN PATIENTS WITH PARKINSON'S DISEASE

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Presented By: Gregory Vurture

Introduction: To date, only very few series have aimed to assess the outcomes of botulinum toxin injections in patients with Parkinson's Disease (PD). The aim of this study was to assess the safety and efficacy of intradetrusor onabotulinum toxin A injections for the treatment of overactive bladder (OAB) in patients with PD.

Methods: All PD patients who underwent intradetrusor injections of onabotulinum toxin A (BoNT-A) for storage symptoms between 2010 and 2017 were included in a retrospective study. A 100 U dose of BoNT-A (Botox®, Allergan Irvine, CA) was used for the first injection in all patients. The primary endpoint was clinical success defined as any subjective improvement in OAB symptoms self-assessed by the patients four weeks after the injections.

Results: Out of 24 patients analyzed, 19 reported improvement of their OAB symptoms four weeks after the first injection (79.2%) with complete resolution of urgency urinary incontinence in 7 patients (29.1%; p<0.001). The average post-void residual (PVR) increased significantly after the first injection from 17.6 to 125.3 ml (p<0.001). Three of the patients had to start clean intermittent catheterization (CIC) after the first injection (12.5%). Out of 49 injections in total, only five caused incomplete bladder emptying requiring the use of CIC (10.2%). Higher pre-injection PVR was significantly associated with both a lower chance of symptomatic improvement (p=0.04) and a higher risk of incomplete bladder emptying with institution of CIC (p=0.047).

Conclusion: Botox appeared effective in PD patients with a relatively low rate of retention requiring CIC. Higher preoperative PVR was the stronger predictor of both treatment failure and postoperative urinary retention requiring CIC while urodynamic obstruction was also associated with treatment failure in male patients. Intradetrusor injections of BoNT-A 100 U appeared as a safe and effective option in PD patients with OAB symptoms and a low PVR before the injection.
Poster #NM12
CHANGE IN BLADDER SPECIFIC QUALITY OF LIFE IN SCI PATIENTS MANAGED WITH CIC OVER TIME
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Presented By: Iryna Crescenze, MD

Introduction: Clean intermittent catheterization (CIC) is associated with low rate of complication in patients with spinal cord injury (SCI). Rates of CIC utilization decline over time and overall satisfaction is low especially in patients early on from injury, women, and those suffering recurrent infections. Our aim is to identify factors associated with improvement in bladder related quality of life (QoL) in SCI patients managed with CIC over time.

Methods: Between January 1st, 2016 to June 30th, 2017, 1479 SCI patients ≥18 years old were enrolled through the Neurogenic Bladder Research Group multicenter, prospective, observational registry. This analysis included 753 patients on CIC with no history of bladder surgery. Patients were followed over 1 year at 3 month intervals. Self-reported data included change in management and patient perceptions over time. The last question on the Neurogenic Bladder Symptom Score (NBSS) questionnaire assessing the overall satisfaction with urinary quality of life (QoL) was used as the primary outcome. Participants were classified as dissatisfied (unhappy/mostly unsatisfied) or neutral/satisfied (mixed/mostly satisfied/pleased).

Results: The average age of the CIC cohort was 43.6+/−13.0 and time from injury was 13.2+/−10.6 years, 32.9% were female, and 69.1% had injury at T1 or below. At baseline 36.1% were dissatisfied with bladder related QoL on CIC and at follow-up 29.7% were dissatisfied. Over one year, 7.2% had urological surgeries and 3.1% of patients switched from CIC to another form of bladder management. Patients who were dissatisfied at baseline were more likely to have urologic surgery (OR:2.66, 95%CI:1.46-4.85, p = 0.001) and to switch management (OR:3.53, 95%CI:1.39-8.99, p = 0.006). Patients who changed bladder management were more likely to report improvement in satisfaction with bladder related QoL (OR:5.67, 95%CI:1.92-16.7, p=0.002). Interestingly, patients who changed management were earlier on from injury (7.5+/−7.9 vs. 13.7+/−10.6 years, p=0.003) and more likely to rely on caregiver for CIC (OR:3.68, 95%CI:1.37-9.89, p=0.019).

Conclusion: In SCI cohort only 7.2% changed management over one year of follow-up. Those who were dissatisfied with bladder related QoL with CIC were significantly more likely to change management and have urological surgery. The change in management was associated in improvement in satisfaction with bladder related QoL over time.
Poster #NM13
LOWER URINARY TRACT DYSFUNCTION IN PATIENTS WITH FAMILIAL DYSAUTONOMIA: A PROSPECTIVE STUDY
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Presented By: Benoit Peyronnet, MD

Introduction: Familial dysautonomia (FD) is a rare hereditary sensory and autonomic neuropathy (type III). The severe autonomic nervous system dysfunction associated with this condition is likely to cause neurogenic lower urinary tract dysfunction (NLUTD). However, very little is known on NLUTD in FD patients. The aim of the present study was to assess clinically the NLUTD of FD patients.

Methods: All FD patients who were seen at the national referral center for FD between November 2017 and September 2018 were included in a prospective study. All patients underwent the following urological assessment: post-void-residual (PVR), International Prostate Symptom Score (IPSS; /35), IPSS quality of life (IPSS-qol; i.e. question 8 of IPSS; /6), International Consultation on Incontinence Questionnaire on Urinary Incontinence-Short-Form (ICIQ-UI-SF; /21) and Qualiveen-SF. Renal ultrasound was not part of the routine evaluation but when it was performed, ultrasound findings were recorded. History of urinary tract infections (UTI) was also documented.

Results: Forty-three patients were included. The mean patient age was 24.3 (±13.1) years. The mean PVR was 54.2 (±13.1) ml and five patients had a PVR > 100 ml (11.6%). All questionnaires suggested that the FD patients had very little lower urinary tract symptoms (LUTS) with a mean IPSS of 4.5 (±4.1), a mean IPSS-qol of 1.3 (±1.5), a mean ICIQ-UI-SF of 1.9 (±3) and a mean Qualiveen-SF of 0.3 (±0.3). Of the 15 patients who had a renal ultrasound available, one had mild unilateral hydronephrosis (6.7%). Two patients reported a history of UTI (4.6%). PVR was not statistically associated with any of the symptom scores.

Conclusion: FD patients are paucisymptomatic from the urinary standpoint, likely due to the lack of bladder afferent signaling and inherent altered sensory perception. Clinical interview and self-administered questionnaires may not effectively screen NLUTD in this population. However, alteration of autonomic efferent innervation to the urinary tract and inherent detrusor underactivity, some may result in increased PVR in some patients. The clinical relevance of this should be evaluated in future studies.
Poster #NM14
CAFFEINE AND OTHER BLADDER IRRITANT AVOIDANCE FROM THREE-DAY VOIDING DIARIES AMONG ADULTS WITH AND WITHOUT URGENCY INCONTINENCE
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Presented By: Anne P. Cameron, MD, FPMRS

Introduction: Caffeine has long been vilified as a cause for urgency urinary incontinence (UUI) along with other potential bladder irritants such as carbonation and alcohol. We hypothesized that patients with UUI would avoid caffeine as a self-management method.

Methods: Treatment-seeking men and women with lower urinary tract symptoms in the Symptoms of Lower Urinary Tract Dysfunction Research Network (LURN) Observational Cohort study completed a baseline 3-day voiding and intake diary. “Complete” diaries had three days of data and no missing intake or voided volumes. Beverages with any caffeine, alcohol or carbonation were identified and total volume recorded. Patients with UUI were defined using the LUTS Tool questionnaire, by responding “sometimes” or greater to “leaked urine in connection with a sudden need to rush to urinate”. Logistic regression and nonparametric ANOVA were used to test differences in fluid consumption between patients with and without UUI.

Results: 461 participants (men=256, women=205) with a median age of 63 had complete diaries. UUI was more prevalent in women than men (66% vs. 34%, p<0.001) and the UUI group had a higher BMI (30 vs. 28, p<0.001). There were no significant racial differences (p=0.14) between UUI groups. Total fluid intake was lower among the UUI group (1.67L/day vs. 1.90L/day, p=0.003). After adjusting for gender, BMI, age and total intake volume, UUI patients were 45% less likely to consume any caffeine (odds ratio=0.55, 95% confidence interval=0.32-0.95, p=0.03), but among those that did consume caffeine no difference in consumption was detected between groups (median daily intake 0.53L vs. 0.57L, p=0.70). There was a similar trend for alcohol intake but this was not significant. No difference in carbonation intake was detected between groups.

Conclusion: Individuals with UUI consume a lower volume of fluid than those without UUI. They also more often abstain from caffeine compared to those participants without UUI.
Poster #NM15

COMPARISON OF BLADDER VOIDING EFFICIENCY (BVE) IN WOMEN WHEN CALCULATED FROM A FREE FLOW (FF) OR AN INTUBATED FLOW (IF)

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Presented By: Francoise A. Valentini, MD, PhD

Introduction: Bladder voiding efficiency is measured according to the degree of bladder emptying and defined as the ratio between voided volume and total bladder capacity [1]. This simple index, easy to calculate, is not widely used. Aims of the study were first to evaluate the reproducibility of BVE between FF and IF and second to search for a relationship between BVE and urodynamic diagnosis (UD) in women.

Methods: Urodynamic tracings of non-neurological women referred for investigation of various lower urinary tract symptoms were analyzed. Urodynamic study included one FF followed by one cystometry (urethral catheter 7F). Post void residual volume (PVR) was measured using a Bladder-scan. Exclusion criteria were voided volume ≥2.

Results: Of 375 urodynamic studies (between 2016 and 2018), 237 women met study criteria. Mean age was 58.2±15.3 years. Presenting complaint was stress urinary incontinence (52), urge incontinence (65), mixed incontinence (71), frequency (22), dysuria (9) and other (urinary tract infection, interstitial cystitis, pain (18)). Overall BVE IF (82.6±25.3) was significantly lower than BVE FF (91.7±14.7) (p<.0001). Following urodynamic study, urodynamic diagnosis was posed according to the ICS/IUGA recommendations and 2 sub-groups defined according with involvement of detrusor. The first (135 women) had UD related to detrusor dysfunction (bladder outlet obstruction (BOO), detrusor hyperactivity with impaired contractility (DHIC), detrusor overactivity (DO), detrusor underactivity (DU)). The second (102 women) had UD found “normal” (N), related to urethral dysfunction (U) (intrinsic sphincter deficiency or showing voiding triggered by urethral relaxation). Comparison of BVE values is given in the table: no significant difference in BVE FF between the 2 sub-groups while BVE IF differed significantly (p=.0002), BVE IF only significantly lower than BVE FF (p<.0001) in case of detrusor dysfunction.

Conclusion: BVE index is a relatively simple index to measure. In this large cohort of non-neurogenical women studied urodynamically for a variety of LUTS, there is no correlation between BVE measured from a FF and BVE obtained during an IF. But, for a given patient, when a difference in BVE is observed between FF and IF, there seems that BVE is a good indicator of voiding dysfunction related to detrusor disturbance.

1-BJUInt 1999;84:14-5

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<th>BVE IF</th>
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THE EFFECT OF A SHARP INCREASE IN ESTROGEN LEVELS ON OVERACTIVE BLADDER SYMPTOMS IN WOMEN UNDERGOING OVULATION INDUCTION

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Presented By: Asnat Groutz, MD

Introduction: Data regarding the effect of estrogen on lower urinary tract symptoms are few and controversial. The aim of this study was to assess the effect of a sharp increase in estrogen levels on overactive bladder (OAB) symptoms among women undergoing ovulation induction.

Methods: 40 consecutive women (mean age 37±5.7 years, mean BMI 24.7±6.1 kg/m²), who underwent ovulation induction during in vitro fertilization cycle, were prospectively enrolled. Three validated questionnaires on urinary urgency (USIQ), urinary incontinence (MESA), and lower urinary tract symptoms (BFLUTS-SF) were used to evaluate patient's OAB symptoms before ovulation induction (low estradiol level), and then prior to ovum pickup (peak estradiol level). The symptom of urinary urgency, as reported in the USIQ questionnaire, was used to classify each patient as symptomatic or asymptomatic before and through ovulation induction. All data were compared between symptomatic and asymptomatic women and with respect to the peak estradiol level as was measured prior to ovum pickup. Statistical analysis was performed using Student's t-test for continuous data or Fisher test for categorical data.

Results: Of the 40 women, 16 (40%, mean age 36.1±6.3 years, mean BMI 24.5±5.7 kg/m²) reported urinary urgency before treatment (mean USIQ severity score 28.8±10.8) and 24 women (60%, mean age 37.7±5 years, mean BMI 24.8±6.4 kg/m²) were asymptomatic. Of the 16 symptomatic women, 14 (88%) remained symptomatic (mean USIQ severity score 28.6±14.9) and two became asymptomatic during ovulation induction. Of the 24 asymptomatic women, 13 (54%) developed de novo urinary urgency (mean USIQ severity score 29±13.5), while 11 women (46%) remained asymptomatic through ovulation induction (Table). The mean peak estradiol levels and number of retrieved oocytes were significantly higher among women who remained asymptomatic (2137 versus 1302 pg/ml; 14.8 versus 6.2 oocytes). Moreover, in most (82%) women who remained asymptomatic, peak estradiol levels were higher than 1000 pg/ml, whereas in most (62%) women who became symptomatic, peak estradiol levels were lower than 1000 pg/ml.

Conclusion: More than half of asymptomatic women may develop de novo OAB symptoms during ovulation induction. A higher estradiol level has a protective effect against the development of these symptoms. This finding may suggest a threshold for estradiol activity in the lower urinary tract.
IMPACTS OF RAPID DIAGNOSTIC TESTING IN THE MANAGEMENT OF URINARY TRACT INFECTION
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Presented By: Melissa Markowitz, BA

Introduction: Urinary tract infection (UTI) is one of the most common conditions for which antibiotics are prescribed. UTIs are generally treated empirically, given the long delay between specimen collection and microbiological diagnosis. We conducted a survey of physicians to assess the potential impact of rapid identification and quantification (IDQ) and antimicrobial susceptibility testing (AST) on the management of UTI and to compare prescribing practices among physicians.

Methods: Five commonly observed UTI vignettes were presented and physicians were asked about their management decisions for each: (1) Acute, uncomplicated UTI due to a susceptible E. coli strain; (2) Recurrent UTI due to an E. coli strain resistant to trimethoprim-sulfamethoxazole and ciprofloxacin; (3) Irritative voiding symptoms without undetectable urinary bacteria in an elderly, immunosuppressed woman; (4) Acute pyelonephritis due to extended-spectrum beta-lactamase producing E. coli; and (5) Irritative voiding symptoms due to urethritis. Physicians scored their comfort level waiting for IDQ (30 min) and AST (150 min) results before prescribing an antibiotic.

Results: 91 physicians participated in the survey, of whom 48 were trainees, 38 were attending physicians in an academic setting, and 5 were physicians in private practice. In vignettes 1 and 2, the availability of rapid testing increased the number of physicians postponing treatment pending AST results from 16% to 38% and 5% to 54%, respectively. In vignettes 2 and 4, rapid AST reduced the use of ineffective antibiotics from 41% to 0% and 69% to 0%, respectively (Fig 1). IDQ testing reduced unnecessary antibiotic use in vignettes 3 and 5 from 91% to 19% and 79% to 13%, respectively. Overall, trainees were significantly more likely to prescribe antibiotics in accordance with UTI guidelines, particularly through increased use of nitrofurantoin and decreased use of ciprofloxacin and cephalaxin.

Conclusion: The availability of rapid testing impacted testing, treatment, and antibiotic selection decisions in all five vignettes. Rapid urine testing has the potential to be a useful tool for antibiotic stewardship and personalized antimicrobial therapy. Trainees were more likely to prescribe antibiotics in concordance with guidelines than attending physicians, possibly due to more recent exposure to antimicrobial stewardship guidelines.

Fig. 1. Selection of effective antibiotic therapy before and after AST results.
Poster #NM18
INCREASED TIME BETWEEN SCHEDULING DATE AND APPOINTMENT DATE FOR NEW-PATIENTS MAY CAUSE DECREASED UROLOGIST PRODUCTIVITY
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Presented By: Joseph M. Caputo, MD

Introduction: With increased demands on urologists, no-show appointments weigh heavily, leading to under-utilized resources and decreased productivity. It is estimated that no-show appointments cost the healthcare system more than $100-billion annually. With this, there’s concern that increased lag-time (time between scheduling date and appointment date) results in higher no-show rates; especially in subspecialties primarily addressing quality of life concerns. We therefore sought to investigate lag-time and no-show appointments at Columbia University Medical Center Department of Urology by subspecialty with particular attention to voiding dysfunction patients.

Methods: We queried new-patient appointments with urologists from 7/2017-7/2018 and excluded rescheduled/cancelled visits. We organized the appointments by subspecialty training/practice of the urologist (voiding dysfunction/female urology, sexual dysfunction/infertility, uro-oncology, endo-urology, reconstructive urology, and general urology). We organized lag-time into 4 categories (14 days) and calculated percentage of no-show appointments for each subspecialty within each lag-time category. We performed a chi-square analysis to compare the no-show rates between voiding dysfunction/female urology and other subspecialties. We also performed a goodness-of-fit model for each subspecialty to assess relationship between lag-time category and no-show rate.

Results: A total of 6060 new-patient appointments were scheduled from 7/2017-7/2018. The overall no-show rate was 14.3% (865/6060). Voiding dysfunction/female urology patients had a no-show rate of 13.9% and had no statistical difference to endo-urology (12.9%, p=0.55), general urology (14.9%, p=0.37), and reconstructive urology (16.8%, p=0.30), but statically higher than oncology (10.2%, p<0.05). Without the 14 days between uro-oncology and voiding dysfunction (34.5% vs 33.0%, p=0.45), we still observed statistically higher no-show rates in voiding dysfunction/female urology patients.

Conclusion: Increased lag-time for new-patient visits is highly correlated with no-show rates. The voiding dysfunction/female urology subspecialty appears to be impacted more than uro-oncology with higher no-show rates over similar lag-times. These findings may advocate an important role for nurse practitioners and telemedicine in this setting to decrease lag-time for new-patient appointments.
Poster #NM19
VALIDATION OF UPPER EXTREMITY MOTOR FUNCTION AS A KEY PREDICTOR OF BLADDER MANAGEMENT AFTER SPINAL CORD INJURY
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Presented By: Christopher S. Elliott, MD, PhD

Introduction: In those unable to volitionally void after spinal cord injury (SCI), clean intermittent catheterization (CIC) is considered the gold standard in bladder management. Despite physician recommendation however, many persons with SCI choose alternative bladder management methods. Our prior research has identified that increased UE function is highly predictive of increased CIC adoption and adherence after SCI. Our findings however have been questioned as the UE motor function scale used was based on expert opinion only. Our aim was to examine predictors of bladder management in a SCI cohort using a distinct validated instrument of UE motor function.

Methods: We examined the NBRG registry, a multicenter, prospective, observational study assessing patient reported outcomes among persons with SCI. We included all participants who were unable to volitionally void and were more than one year post-injury. Participants were dichotomized into those performing CIC or those not performing CIC (ie. indwelling catheters, condom catheters, ileal conduit or voiding into diapers). In addition to demographic and clinical characteristics, UE motor function was examined using the SCI-Fine Motor Function Index employing a validated categorization scheme (1-no activities requiring hand function, 2-some activities involving gross hand movement, 3-some activities requiring dexterity or coordinated upper extremity movement or 4-most activities requiring dexterity and coordinated upper extremity movement). Univariate and multivariate associations were performed using logistic regression.

Results: A total of 1326 individuals met inclusion criteria (66% performing CIC, 60% male and 82% Caucasian). On multivariate analysis, increasing UE motor function was statistically associated with an increased odds of performing CIC; the absolute proportion performing CIC as the SCI-Fine Motor Function Index increased was 37.9%, 34.2%, 57.1% and 78.6% respectively. Increasing age, increasing years since injury, obese females, non-white race, increasing Charlson comorbidity score and worse SF-12 physical scores were all associated with a significantly decreased odds of performing CIC (Table 1).

Conclusion: In persons with SCI who are unable to volitionally void, UE motor function is highly associated with CIC adoption/adherence after SCI. These results validate our prior study findings and continue to suggest that UE motor function may predict the use of CIC more than any other factor following SCI.
Poster #NM20
THE ROLE OF HEALTH INSURANCE IN PATIENT REPORTED SATISFACTION WITH BLADDER MANAGEMENT IN NEUROGENIC BLADDER
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Presented By: Tope Rude, MD

Introduction: Neurogenic bladder (NGB) is a significant source of morbidity for spinal cord injury patients. NGB is managed with a range of treatment options, including reflex voiding, catheterization, medications and bladder augmentation. These treatments differ in efficacy, tolerability and cost. Coverage for treatment options does vary by insurance provider; however, the impact of these differences in coverage on the patient’s experience and quality of life is not known. In a large, self-selected cohort of neurogenic bladder patients, we evaluate the impact of insurance provider and economic determinants of care on patient reported bladder management satisfaction. We hypothesize that private insurance will afford patients improved satisfaction through differences in bladder management options.

Methods: We performed a retrospective, cross-sectional review of patient surveys as part of the Neurogenic Bladder Research Group (NBRG) Patient Centered Outcomes Research Initiative (PCORI). 1,471 patients with neurogenic bladder due to spinal cord injury completed the Neurogenic Bladder Symptom Score (NBSS), a validated questionnaire, along with providing demographic and clinical factors. We included all patients for whom there was complete insurance information along with these measures. We performed univariate analysis to assess the patterns in bladder management based on whether the patient had private, public, or combined insurance and performed an analysis of co-variance to study the impact of insurance on quality of life. Uninsured patients were not included.

Results: We studied 405, 590 and 220 patients with private, public and combined insurance respectively. These groups were significantly different across demographic features including race, education and income. In addition, patients with neurogenic bladder were more likely to be managed with indwelling catheterization and less likely to take bladder medication, either because they were not prescribed medication or because their medication has too bothersome side effects (Table 1). On multivariate analysis, insurance type was not associated with quality of life by NBSS scores, which were 24 in all three groups; however, patient age, level of injury were associated (p<0.05).

Conclusion: While insurance type impacts the availability of bladder management options in neurogenic bladder, these differences are not associated with a decrease in quality of life in a survey of spinal cord injury patients.
Poster #NM21
PRACTICE VARIABILITY OF PERIOPERATIVE ANTIBIOTIC PROPHYLAXIS FOLLOWING SACRAL NEUROMODULATION PROCEDURES: ANALYSIS OF A NATIONWIDE INSURANCE CLAIMS DATABASE
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Presented By: Joshua A. Cohn, MD

Introduction: Despite recommendations for antibiotic duration of 24 hours or less, there is limited “community” consensus regarding the use of oral antibiotics following sacral neuromodulation procedures. We aimed to assess antibiotic prescription practice patterns and predictors of receipt of antibiotics for patients undergoing sacral neuromodulation.

Methods: We utilized Marketscan, a nationwide, prospectively-maintained database of private insurance claims, to identify patients undergoing first stage (CPT 64581) sacral neuromodulation procedures between 2003 and 2014. Data regarding oral antibiotics, duration, and timing relative to surgery were collected in addition to indications for surgery, comorbidities, and demographics. Multivariable analysis assessed independent predictors for receipt of antibiotics within 90 days of surgery.

Results: We identified 10,917 patients who underwent first stage sacral neuromodulation. Mean age was 62.8 (± 6.2) years, and 83.4% of patients were female. The most frequent indications included isolated storage lower urinary tract symptoms (LUTS) (61.6%), both storage and voiding LUTS (14.1%), isolated voiding LUTS (6.6%), and fecal incontinence (1.8%). Overall, 3,158 (28.9%) patients received an oral antibiotic in the postoperative period for a mean of 8.01 (± 7.47) days. The most commonly prescribed agents were cephalexin (45.9%), fluoroquinolones (30.2%), trimethoprim-sulfamethoxazole (10.6%), and amoxicillin/clavulanate (2.8%). On multivariable analysis, younger age (OR 2.00, 95% CI 1.52 – 2.63, p < 0.001 for age < 30 years compared to age ≥ 60 years), neurologic comorbidities (OR 1.48, 95% CI 1.21 – 1.81, p < 0.001), and prior device implantation (OR 1.48, 95% CI 1.35 – 1.61, p < 0.001) were significantly associated with receipt of oral antibiotics. In contrast, patients undergoing implant for fecal incontinence were significantly less likely (OR 0.74, 95% CI 0.66 – 0.84, p < 0.001) to receive antibiotics.

Conclusion: Practice patterns for antibiotic prescription following sacral neuromodulation procedures are variable, with nearly one-third of patients receiving oral antibiotics beyond the initial operative procedure. Further study is necessary to determine the consequences of such practices and in-so-doing guide optimal care.
Poster #NM22
COMBINATION THERAPIES FOR OVERACTIVE BLADDER: UNTAPPED OPPORTUNITIES?
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Presented By: Christopher S. Elliott, MD, PhD

Introduction: Overactive bladder (OAB) affects over 16% of the United States population with many suffering from associated incontinence. The treatments for OAB range from first line (lifestyle modification, pelvic floor muscle training) to second line (anticholinergic or beta-3 agonist medications) and third line therapies (intradetrusor botulinum toxin injection, sacral neurostimulation (SNM) or percutaneous tibial nerve stimulation (PTNS)). For those with urinary incontinence secondary to OAB, complete continence is the ultimate goal of therapy. Unfortunately, cure is difficult to attain with rates of only 5-20% reported in randomized trials of solitary third line therapy. A potential method to increase OAB treatment success rates is to combine differing modalities. We chose to examine the current research and evidence.

Methods: We performed a systemic Pubmed review of conventional OAB therapies used in combination for the past five years (May 25th, 2013 to May 25, 2018). Only investigations using human subjects and original research were included.

Results: A total of 17 original publications met our search criteria. Of these, 12 evaluated combination therapy of multiple anticholinergics or a combination of anticholinergic and beta-3 agonist medications. Of the other 5 publications, three evaluated anticholinergic medications in combination with PTNS while the remaining two, evaluated anticholinergic medications in combination with non-FDA approved versions of OAB therapy. With the exception of combination medication trials, most studies were in low impact journals (Impact Factor ranging from 0.42-0.92). No studies examining intradetrusor botulinum toxin or SNM in combination with first or second line therapies were identified.

Conclusion: Prospective or randomized controlled trials examining combination therapies for OAB are lacking in the literature, particularly anything beyond combination medication therapy. Given low rates of complete response in trials of third line treatment monotherapy, the deficit in combination OAB research is an important and understudied area for future potential investigation.
Poster #NM23

EXPECTANT LONG-TERM FOLLOW UP OF PATIENTS WITH NON-NEUROGENIC CHRONIC URINARY RETENTION

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Presented By: Alejandro Abello, MD

Introduction: Chronic Urinary Retention (CUR) has been recently defined as an “elevated post-void residual of greater than 300 ml that persisted for at least 6 months and documented on 2 or more separate occasions”. [1] However, the frequency of adverse outcomes in chronically retained patients is unknown and previous approaches haven’t found a direct relationship between poor outcomes and chronic retention. The objective of this study is to describe urologic complications in patients with chronically elevated post-void residual (PVR) volumes and to evaluate other related risk factors during a long-term follow-up in patients managed conservatively.

Methods: Non-neurogenic patients who refused surgical intervention of the prostate and had PVR volumes > 300 ml on two or more separate occasions at least six months apart were included. We followed this cohort over time, recorded complications and evaluated risk factors for complications.

Results: 28 men with a mean age of 74 were followed for a median of 56 months (IQR: 26-101 months); 26 had benign prostatic hyperplasia with a median prostate size of 55 cc. Baseline median PVR was 468 cc (IQR: 395-828) and follow-up median PVR was 508 cc (IQR: 322-714). During follow-up, 13 patients (46%) had at least 1 complication with acute urinary retention being the most common occurring in 10 patients (36%) with 15 episodes. Other complications presented in less than 15% and no patients developed permanent renal insufficiency (Table 1). Patients with prostate size ≥ 100cc had a significantly higher total number of acute retention episodes (P value: 0.01).

Conclusion: While the presence of CUR could commonly predispose to episodes of acute retention, severe complications are infrequent although present. Additionally, prostate size may play a role in increasing some adverse outcomes. With proper counseling about different complications, patients with retention who denied surgical treatment can be safely followed for at least 5 years without renal deterioration.

References
Poster #NM24

A LARGE-SCALE SOCIAL MEDIA ANALYSIS OF OVERACTIVE BLADDER POSTS: WHAT DO PATIENTS KNOW AND WANT TO KNOW?

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Presented By: Gabriela Gonzalez, BS

Introduction: Women’s experience with overactive bladder (OAB) has been previously characterized with focus groups and online surveys designed from the perspective of medical providers. Learning directly from patients with a large-scale online community-based research analysis of anonymous online posts, we attempted to understand women’s experience with OAB.

Methods: We collected 2,618 posts from 203 social media sites utilizing keywords as search terms with a Java-based natural language processing platform and Treato, a social media data mining service. 200 hundred randomized posts were analyzed using grounded theory methodology to identify preliminary themes. To complement the qualitative analysis and validate a new computational technique, we concurrently applied Latent Dirichlet Allocation (LDA) probabilistic topic modeling to the full dataset for theme discovery in the entirety of the posts.

Results: Six preliminary themes with sub-themes were identified (Table 1). Overall, we found that social media creates a community that women trust more than medical providers. Online forums create a dynamic source of information, encouragement, and peers that are available to validate symptoms, feelings, treatments, and alternative therapies. Despite the spectrum and chronicity of OAB, women are attempting to find a remedy, and it is evident that there is confusion about the different tiers in treatment. Additionally, there was a desire for knowledge acquisition regarding the work-up to differentiate OAB from interstitial cystitis. The distrust in physicians, alleged mismanagement and inability of proper specialty care referral resulted in a cycle of desperation that only worsened their quality of life and emotional burdens. Noteworthy emotional challenges included suicidality, depression, and anxiety.

Conclusion: These social networks allowed patients to self-manage their illness experience and knowledge concerns through peer advice. Focusing efforts on leveraging social media technology for better decision making among patients can lead to the improvement of patient outcomes and treatment satisfaction. Furthermore, the confusion among participants in the analyzed posts suggests that providers should better counsel patients on the OAB chronic care treatment model.

Poster #NM25 - WITHDRAWN
Poster #NM26

DO WOMEN WITH PELVIC FLOOR DISORDERS PREFER TO BE TREATED BY FEMALE UROGYNECOLOGISTS?
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Presented By: Asnat Groutz, MD

Introduction: Patient's preference regarding the gender of their health care provider has special significance when it comes to intimate medical situations. Pelvic floor disorders (PFD) include very intimate medical situations such as pelvic organ prolapse, urinary or fecal incontinence, and sexual dysfunction. As yet, data regarding a possible preference for female urogynecologists among women with PFD are lacking. The present study was undertaken to assess provider gender preference among women with PFD.

Methods: 200 consecutive women (mean age 59.6±16.2), referred to the urogynecologic unit of a tertiary teaching hospital, were prospectively enrolled. All women completed a 25-item anonymous questionnaire, designed to assess possible gender preferences in choosing their urogynecologist. A multivariate binary logistic regression analysis was used to study which variables were independently associated with preference for a female urogynecologist.

Results: Overall, 72 (36%) patients preferred a female urogynecologist, 117 (58.5%) had no gender preference, and only 11 (5.5%) preferred a male urogynecologist. Seventy-two (36%) women were routinely managed by female gynecologists, most of whom (65.3%) also preferred a female urogynecologist. Similarly, 37 of 67 (55.2%) women previously managed by female urogynecologists expressed a preference for a female urogynecologist. There was a higher preference to undergo a pelvic examination by a female urogynecologist (35%), than for consultation (24%), or surgery (21.5%). Embarrassment during the pelvic examination was the main reason for preferring a female urogynecologist. The preference for a female urogynecologist was significantly associated with low (primary school) education (OR 6.08, 95% CI 1.8-20.5, P=0.004), high (university) education (OR 2.44, 95% CI 1.2-4.8, P=0.01), and being religious (OR 5.63, 95% CI 1.3-24.1, P=0.02). Nevertheless, the three major factors that affected the absolute selection of the urogynecologist were professional ability (80.5%), clinical experience (82.5%) and knowledge (72%).

Conclusion: Up to 36% of women with PFD prefer to be treated by female urogynecologists, mainly due to embarrassment during the pelvic examination. This preference was significantly associated with being religious, primary school education, and university education. However, when invasive surgical procedures are required, the professional skills of the physician are more important than gender considerations. Further epidemiologic research is required, as cultural differences may affect gender preferences when choosing specific health care providers.
Poster #NM27
TRANSCUTANEOUS POSTERIOR TibIAL NERVE STIMULATION IN FEMALE PATIENTS WITH OVERACTIVE BLADDER: A PROSPECTIVE SINGLE-CENTER COHORT
Benoit Peyronnet, MD, Nelly Senal, MD, Quentin Alimi, MD, Lorene Mathieu, MD, Juliette Hascoet, MD, Isabelle Bonan, MD PhD, Andrea Manunta, MD, Jacques Kerdraon, MD
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Presented By: Benoit Peyronnet, MD

Introduction: Posterior tibial nerve stimulation (PTNS) has become over the past decade a well-accepted third-line therapeutic option in patients with overactive bladder (OAB). The stimulation could be delivered to the posterior tibial nerve through two distinct routes: using a fine needle inserted by the physician in the office (percutaneous-PTNS) or self-administered by the patient himself using a surface electrode (transcutaneous-PTNS). The aim of the present study was to report the outcomes of transcutaneous-PTNS in female patients with OAB.

Method: The data of all female patients undergoing transcutaneous PTNS for OAB at a single institution from 2013 to 2018 were prospectively collected. The transcutaneous-PTNS was self-administered at home by each patient through 20-minutes daily session for at least 3 months, after a 1-hour training session with a dedicated nurse. The same 20-minutes daily session were prolonged beyond the 3-months time-point in responders as a maintenance therapy. The primary endpoint was the patient impression of improvement as assessed by a visual analogic scale (VAS) going from 0 (no improvement) to 10 (feeling cured) at 3 months. The secondary outcomes of interest were the change of Urinary Symptom Profil (USP) OAB subscore (/21) and voiding diary data (maximum voided volume (MVV) and number of urinary incontinence (UI) episodes per day) and the discontinuation rate at 6 months. Kaplan-Meier analysis was used to estimate the discontinuation-free survival.

Results: 62 patients were included. The mean patients age was 58.3 years. Fifty-three patients had urgency incontinence (85.5%) and 9 had OAB dry (14.5%). Most patients had detrusor overactivity on baseline urodynamics (71.1%) and the majority were refractory to antimuscarinics (67.7%). The mean VAS at 3 months was 4.8 (±3.5). The USP OAB subscore decreased significantly from 11.1 (±4.1) at baseline to 9 (±4) at 12 weeks (p=0.0006). The MVV increased significantly from 309.2 (±168.5) to 355 (±213.3) ml (p=0.02) and the number of UI episodes per day decreased significantly from 4.9 to 3.4 /day (p=0.002). The 12-weeks discontinuation rate was 46.9% (see figure).

Conclusion: Transcutaneous-PTNS seems to be a valuable treatment option in female patients with OAB. Further studies are needed to determine the relative efficacy, safety and cost-effectiveness of transcutaneous-PTNS and percutaneous-PTNS.
Poster #NM28  
FDA NOTICE ON TRANSVAGINAL ENERGY-BASED DEVICES (TV-EBD) FOR VAGINAL REJUVENATION THERAPY: WAS IT JUSTIFIED?  
Michael J. Kennelly, MD, Carolinas Healthcare System, Cameron Futral, Carolinas Healthcare System  
McKay Urology  
Presented By: Michael J. Kennelly, MD  

Introduction: On July 30th, 2018, the FDA released a safety communication warning against the use of Vaginal Rejuvenation procedures. The report states that the FDA has not cleared the use of energy-based devices for the treatment of conditions related to menopause, urinary incontinence or sexual function, citing reports of third degree burns related to the procedure. The purpose of this study was to categorize the reported adverse events given in the Manufacturer and User Facility Device Experience (MAUDE) database to elucidate the origin of evidence given by the FDA communication, and shed light on the data that justified the FDA release.  

Methods: The MAUDE database was queried from 2010-2018 for adverse events related to vaginal rejuvenation device therapies. Each adverse event was the categorized based on the details of the event as device error, provider error, a common risk, patient-reported lack of efficacy, or a procedure related adverse event. Additionally, social media outlets such as Twitter were reviewed to gather public opinion on vaginal rejuvenation therapy in response to the recent FDA communication.  

Results: A total of 40 adverse events were reported on the MAUDE database regarding vaginal rejuvenation devices. Of that 40, 27 were unique events, while the other 13 were duplicate reports. Of the 27, 12 were categorized as patient-reported lack of efficacy, 8 were provider error, 3 were device error, 2 were common risk, and 2 were, with the provided information in MAUDE, procedure related AEs. Social media responses revealed largely negative opinions on vaginal rejuvenation therapy.  

Conclusion: Many of the reported adverse events on the MAUDE database revealed a fundamental lack of education, either to the providers, or to the patients, on the efficacy of vaginal rejuvenation therapy. Almost half of the total individual reports to MAUDE (12) were patients with previous medical histories regarding vaginal dryness, incontinence or sexual dysfunction reporting continued lack of improvement. Social media opinion supported this notion, with many posts highlighting patient frustration on how the procedure was not explained in detail. However, only five reported events were related to the device or procedure. The scarcity of these reports may not justify a health hazard release to the public.
COMPARISON OF PUBLICATION BIAS WITHIN THE GENERAL AND FEMALE UROLOGY LITERATURE
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Presented By: Jacqueline M. Zillioux, MD

Introduction: Publication bias is a well-established phenomenon in scientific literature and may influence the scientific community towards over-estimation of treatment effect. Accordingly, national efforts are being taken to decrease the non-publication rate of negative studies and include the creation of national registries and databases to allow for publicly available study results. We sought to assess the rates of positive versus negative studies within recently published urologic literature, with focus on comparison of general versus female urology journals.

Methods: All studies published in the Journal of Urology (JU) and Neurourology and Urodynamics (NU) in 2017 were reviewed. A study was considered positive if there was a statistically significant difference between the groups examined or if the clinical hypothesis was supported. Studies that were considered not appropriate for analysis (e.g. anatomic or descriptive studies) were excluded. Additional data collected included number of associated citations and article subspecialty focus. Finally, studies were also categorized into treatment (e.g. surgical intervention) versus non-treatment (e.g. predictive investigation) subtypes. Chi-square and ANOVA were used for analysis.

Results: We reviewed 558 studies published in 2017, with 398 meeting inclusion criteria for analysis (JU, 228; NU, 169). Overall, 345 (86.7%) studies were positive and 53 (13.3%) were negative. There was no significant difference in the proportion of positive studies between the two journals (JU, 86.5%; NU 87.0%) (p=0.10). Furthermore, there was no significant difference in number of times positive and negative studies were cited (JU, 3.02 ± 3.91; NU 2.94 ± 3.61) (p=0.89). Finally, there was no difference in study findings based on subspecialty topic (p=0.91) (Table 1). Compared to treatment studies, non-treatment studies were significantly more likely to be positive (89.7% vs 80.2%, p=0.01).

Conclusion: A vast majority of studies published within the urologic literature are positive. Further research is needed to understand the impact of this publication trend and to support efforts to promote dissemination of both positive and negative study findings.
Poster #NM30
FOLLOW UP EXPERIENCE WITH TELEMEDICINE VISITS IN FEMALE UROLOGY PATIENTS
Alex Uhr, MD, Joon Yau Leong, Ali Syed, MD, Leonard Gomella, MD, Deborah Glassman, MD
Department of Urology, Thomas Jefferson University, Philadelphia PA
Presented By: Alex Uhr, MD

Introduction: Telemedicine (TME) is gaining in popularity and has demonstrable efficacy in conducting patient interviews over a video-conference system. We previously report our early experience with TME visits in female urology patients from 2015-2016. Here, we provide a follow up review of TME visits after switching to the EPIC EMR platform.

Methods: From February 2017 to July 2018, our urology department conducted 667 unique TME visits (previously reported 224 encounters). We retrospectively studied all female TME visits during that time regardless of primary diagnoses. TME visits occurred within each provider’s existing clinic scheduling template with visits taking place remotely via computer. A post-encounter satisfaction survey was emailed to patients 3 days after their TME visit. Responses were scaled from 1-5 (5 representing the highest satisfaction). Patients were also queried on their use of social media platforms.

Results: Of the 667 TME visits, 173 were from female patients (previously 64 patients) with the top 3 visiting diagnoses being nephrolithiasis, hydronephrosis and renal neoplasms. Of these 173 patients, 26 (15.03%) responded to the post-encounter survey. The median age was 66 years. The average patient encounter time was 3min,6sec (range 1min,15sec – 11min,58sec). The median distance from the patient’s home to the office that they would otherwise travel was 47 miles. With TME, 46% of patients reported a total time saved of >3 hours when compared to office visits, while 100% reported having saved >1 hour. On a 5-point scale, average patient satisfaction rates with the TME system was 4.5 (vs previous platform 4.6, p=0.087). 38% of patients have also recommended the use of TME to relatives or friends. 69% of patients reported to using social media regularly, with Facebook, YouTube and Google+ being the most commonly used platform.

Conclusion: Our experience with telemedicine for female urologic conditions is efficient in saving patients time and travel costs while still maintaining excellent patient satisfaction. Social media users may be more amenable to TME. Future efforts will be aimed at assessing TME’s role in reducing patient/provider costs and effectiveness in patients with other urologic diagnoses. Persisting barriers to TME include the technical aspects of using the system for both patients and providers.
Poster #NM31
LONG-TERM SAFETY AND EFFICACY OF POLYDIMETHYLSILOXANE (MACROPLASTIQUE®) IN PATIENTS WITH STRESS URINARY INCONTINENCE: ANALYSIS OF PATIENTS WHO COMPLETED 3-YEARS OF TREATMENT
Gamal Ghoniem, MD1, Bilal Farhan, MD1, Mashrin Chowdhury, DO2, Yanjun Chen, MS2
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Presented By: Mashrin Lira Chowdhury, DO

Introduction: Macroplastique (MPQ) is a urethral bulking agent used in the treatment of stress urinary incontinence (SUI) in women with intrinsic sphincter deficiency (ISD). Ghoniem et al showed durability of Macroplastique success up to 2 years. The purpose of this study is to evaluate the safety and efficacy of MPQ in women with SUI due to ISD who completed 3 year follow-up in this post market study.

Methods: 276 subjects enrolled in this multicenter prospective study between October 2008-August 2017. 70 subjects completed 3 year follow up. Subjects were treated with up to two MPQ injections and followed at 3, 12, 24, and 36 months. Stamey grade (0= continent, 1= incontinence with vigorous activity, 2= incontinence with minimal activity and 3= total incontinence) and I-QoL questionnaire divided into 3 subscales were assessed at baseline, 12, 24, and 36 months post injection. Patient Global Impression of Satisfaction (PGI-S) was assessed at 36 months. Success is defined as improvement to Stamey grade 0 or 1 at 36 months. Safety assessment is reported on serious and non-serious adverse events (AE). Two-sided binomial test have been used to test the overall success rate, while linear mixed effect model with patient-level random effect is used to examine longitudinal trends over the 3-year study period.

Results: The majority of patients were white with mean age 63.3 years. At 36 months 21/70 (30%) of patients reported Stamey score 0 and 28/70 (40%) had Stamey score 1, however overall success rate was 51.4%. Overall satisfaction was 68% at 36 months. 27/70 (38.5%) patients report they were very satisfied on PGI-S at 36 months, vs 32/68 (47%) at 12 months. I-QoL scores and the subscales were significantly improved at 12 months from baseline (p >0.05). Most common AE occurred within the first 3 months post injection as transient dysuria 3.2%, hematuria 6%, pain at the injection site 1.6% and urinary tract infection 2%. No serious AE were reported.

Conclusion: At 3 years, MPQ is safe and efficacious for the treatment of SUI secondary to ISD in women. The overall satisfaction is sustained from baseline to 3 years post injection.
Poster #NM32
IMPACT OF LIFETIME OBESITY ON URINARY INCONTINENCE IN THE WOMEN'S HEALTH INITIATIVE
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Presented By: Judy Choi, MD

Introduction: Obesity is a known risk factor in the development of urinary incontinence (UI). Using data from the Women's Health Initiative (WHI), a long-term, national, and comprehensive health study, we evaluated the cumulative impact of obesity over a woman’s lifetime on the development of UI.

Methods: Data from the WHI Observational Study was analyzed. Participants who did not report incontinence and were free of neurological deficits at baseline were included. BMI obtained from retrospective self-reports for ages 18, 35, and 50 years, along with weight and height measurements during the study, was used to create a BMI trajectory for each subject, using an individual growth model. Cumulative overweight (BMI≥25 kg/m²) and obesity (BMI≥30 kg/m²) duration in years was calculated per subject (overweight duration and obese duration, respectively). Further analyses using logistic models were used to assess the relationship between overweight/obesity duration and the development of UI during the WHI study at Year 3, adjusting for risk factors, such as age, pregnancy history, race, estrogen use, diabetes, smoking, and hysterectomy status.

Results: 15,420 women were included in the study, 4,568 (30.0%) of whom developed UI by Year 3. In accordance with prior studies, age, race, parity, hysterectomy and oophorectomy status, hormone therapy, and BMI were risk factors for UI. UI was subdivided into stress UI (SUI), urge UI (UUI), and mixed UI (MUI). When controlling for covariates, the duration of overweight and obese years was significantly associated with overall UI, SUI, UUI, and MUI (p<0.05). The number of overweight and obese years was associated with an increased risk of developing UI post-menopausally, compared to those with 0 overweight/obese years (the reference group). Severity of UI was also associated with higher overweight or obese duration years. Those who were obese at age 18 were found to have an increased risk of developing new-onset of all types of UI post-menopausally.

Conclusion: Chronic, increased BMI status is associated with an elevated risk of BMI later in life. Symptom severity also appears to be worsened with duration of increased BMI status.
Poster #NM33
60 MINUTES AND VAGINAL MESH: DID THE MEDIA TELL THE WHOLE STORY?
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1Cedars-Sinai Medical Center, Los Angeles, CA, 2College of Science and Health, Charles Drew University of Medicine and Science, Los Angeles, CA, 3Hugh Hazel Darling Law Library at the University of California Los Angeles School of Law, Los Angeles, CA
Presented By: Colby P. Souders, MD

Introduction: Transvaginal mesh is the largest multi-district litigation since asbestos. A “60 Minutes” episode titled “Gynecological mesh: The medical device that has 100,000 women suing” in May 2018 revealed a change in the source for Boston Scientific transvaginal mesh resin from a U.S. manufacturer to a third-party broker in China, putting into question the authenticity of that mesh as well as linking it to ongoing mesh complications. Boston Scientific started using the newly source mesh in early 2013. We previously reported that the average time interval from transvaginal mesh implantation to legal claim filing date was approximately five years. Based on this, we sought to explore whether the rate of product liability claims filed against Boston Scientific increased after the source change for their mesh resin compared to other manufacturers.

Methods: A search of the Bloomberg law database was performed by a law librarian to determine the number of product liability claims filed against the following transvaginal mesh manufacturers: Boston Scientific Corporation, Ethicon (Johnson Johnson), American Medical Systems (AMS/Endo), and Coloplast from 2014 through June 2018. These manufacturers were chosen as they have the highest market share. The search results were then individually reviewed to remove any claims that may be related to products other than mesh.

Results: The number of legal claims decreased across all companies with time: Boston Scientific claims decreased from 8,174 in 2014 to 1,092 in 2017 (86.6% decrease); Ethicon claims decreased from 12,246 to 2,367 (80.7% decrease); Bard claims decreased from 4,897 to 683 (86.0% decrease); AMS claims stayed about the same 76 to 63; Coloplast claims decreased from 915 in 2014 to 52 in 2017 (94% decrease). The rate of mesh legal claim filings was also analyzed by market share in order to obtain a legal filing rate for each company by year. See Figure 1.

Conclusion: The rate of legal claim filings, accounting for manufacturer market share, showed an overall downward trend for each manufacturer. Given that the average time interval from transvaginal mesh implantation to legal claim filing date was five years, the decrease in the rate of lawsuit filing refutes the concept that the resin change resulted in increased complications.
Poster #NM34
AGING RELATED ALTERATIONS OF NEURAL CONTROL PROPERTIES OF THE EXTERNAL ANAL SPHINCTER
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Presented By: Yingchun Zhang, PhD

Introduction: The prevalence of fecal incontinence (FI) increases with age, and affects up to 15% of the elderly population. Aging is associated with central degeneration and a reduced ability to modulate muscle contraction strength. However, no efforts have been made to evidence whether similar effects exist in the external anal sphincter (EAS). Furthermore, no studies have non-invasively assessed the effect of aging on motor unit action potential (MUAP) size. This study aims to explore the effects of aging on the EAS by assessing MUAP firing patterns and size using a non-invasive pelvic high-density surface EMG (HD-sEMG) recording and analysis technique.

Methods: Healthy female young (n=13, 31.8±4.5 years) and elderly (n=14, 64.3 ±6.2 years) subjects, without a history of neurogenic disorders, were recruited to participate in this study. A 64-Channel (8x8) HD-sEMG probe was inserted into the rectal space for HD-sEMG recordings. Resulting HD-sEMG signals were decomposed into MUAP spike trains using our previously developed k-means clustering convolution kernel decomposition (KmCKC) technique. The MUAP firing rate for each subject was defined as the average number of motor unit firing instances per second for all decomposed motor units.

Results: EMG decomposition was successfully performed for all subjects. Mean MU firing rates were 11.6±2.1 pulses per second (PPS) and 9.58±2.3 PPS, for the young and elderly groups, respectively. MUAP amplitudes of 45.1±14.2 µV and 63.9±21.7 µV were obtained for the young and elderly groups, respectively. Significant changes in MU firing rate (p<.05) and MUAP amplitude (p<.01) with respect to aging were observed.

Conclusion: This study represents the first effort to examine the effect of aging on EAS MU firing rates and size using advanced non-invasive HD-sEMG recording and analysis techniques. Results suggest an impaired descending excitation to the EAS with advancing age and increased mean MU size, likely resulting from compensatory reinnervation. Our results also suggest the feasibility and high-performance of using HD-sEMG tools for further investigations of aging-related pelvic floor and anorectal dysfunctions.
Poster #NM35
ARE ACTIVE WOMEN MORE LIKELY TO HAVE RECURRENT STRESS URINARY INCONTINENCE (SUI) AFTER MIDURETHRAL SLINGS (MUS)?
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Presented By: Kimberly Ferrante, MD, MAS

Introduction: There is a paucity of data on postoperative activity and how it relates to surgical failure, specifically with MUS. We aimed to assess if women with higher self-reported activity levels are more likely to have SUI after MUS than women with lower self-reported activity.

Methods: A secondary analysis of Operations and Pelvic Muscle Training in the Management of Apical Support Loss: the OPTIMAL Trial, a randomized trial comparing sacrospinous ligament suspension versus uterosacral ligament suspension, both with retropubic MUS, two years after surgery. A validated assessment of activity was used at baseline, months 6, 12 and 24 postoperatively. The primary aim of this secondary analysis is to compare rates of SUI up to 2 years after MUS procedures in women with high activity levels to those with lower activity levels. Women in the upper quartile for activity (>=90 minutes per week) were compared to the remaining subjects. Recurrent SUI was defined as retreatment or reoperation for SUI and/or any positive response to PFDI stress incontinence questions 20-22. The association between SUI and activity plus other risk factors at 6-24 months was assessed using chi-square tests and generalized linear mixed modeling.

Results: A total of 371 participants in the OPTIMAL study received a retropubic MUS along with their prolapse repair. At 2 years, 87/307 (28%) exercised for at least 90 minutes per week, and 71/279 (25%) had recurrent SUI. Women who were less active were significantly more likely to have recurrent SUI than women who were active (15.2 v 29.5%, p= 0.01) (Table 1). In the multivariable model, recurrent SUI was associated with < 4 years of college education (OR 1.9 (1.1,3.2), p=0.03) and white race (OR 2.1 (1.0,4.3), p=0.046) and was higher at 24 vs. 6 months (OR 1.4 (1.0,1.9), p=0.03).

Conclusion: Recurrent SUI occurs more frequently in women with lower self-reported activity levels at 2 years after MUS surgery. Education level
Poster #NM36
LONG-TERM OUTCOMES AND COMPlications OF THE TRANSOBturator MIDURETHRAL SLING
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1LSUHSC-Shreveport, 2LSU-Shreveport School of Allied Health
Presented By: Librado Valadez, MD

Introduction: Based on Grade A evidence, the AUA/SUFU Stress Urinary Incontinence (SUI) Guidelines strongly recommend either the retropubic or transobturator (TO) midurethral sling (MUS) for the index female patient with SUI. However, while numerous studies report long-term outcomes for the retropubic MUS, long-term outcomes of the TO MUS are largely absent. Long-term outcomes and complications of the outside-in TO MUS are forthwith presented.

Methods: This is an IRB-approved, retrospective chart review of all women who underwent a TO MUS at our institution from 2004-2010. Women undergoing concomitant surgery were included. Pre- and postoperative assessment included cough-stress test, SEAPI assessment (stress incontinence, emptying, anatomy, protection, and inhibition), validated quality of life (QoL) questionnaires, and 10-point Visual Analog Score (VAS) measuring overall satisfaction. “SUI Cure” was defined as: no subjective or objective SUI, and no additional surgery to achieve stress continence. Statistical evaluation was conducted.

Results: Of 437 women, 292 (67%) had a minimum follow-up (F/U) of 48 months, with mean and median F/U of 88 and 92 months, respectively. “SUI cure” was 61% in the entire cohort and 50% in the 74 women who had MUS only. Age, body-mass index, and Valsalva leak point pressures were not risk factors for failure. Median time to SUI recurrence was 38 months in the entire cohort and 18 months in the MUS-only group. Perioperative complications were few and typically associated with concomitant surgery. Symptomatic periurethral banding occurred in 12 women (2 bilateral), with 5 women undergoing 6 sling revisions. An additional 10 women developed asymptomatic banding on exam (2 bilateral). Overall, a statistically significant improvement in SEAPI scores, QoL indices, and VAS was observed.

Conclusion: Long-term SUI-cure after the TO MUS is achieved in 61% of women, which is lower than success rates reported in the literature. This may be due to waning success with long-term F/U, regardless of our strict definition of cure. Periurethral banding may be asymptomatic and may appear de novo over time. Overall, women experience a significant improvement in their QoL after TO MUS surgery.
Poster #NM37

VERY LONG-TERM FOLLOW-UP OF THE ANTERIOR VAGINAL WALL SUSPENSION PROCEDURE FOR INCONTINENCE AND/OR PROLAPSE REPAIR

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Presented By: Amy Kuprasertkul, BS

Introduction: To report the outcomes of the anterior vaginal wall suspension (AVWS) procedure for stress urinary incontinence (SUI) and/or anterior compartment prolapse (POP), with minimum 10 years follow-up.

Methods: Following institutional review board (IRB) approval, a long-term database of non-neurogenic patients who underwent AVWS for bothersome SUI with early stage anterior compartment prolapse (stage ≤ 2) “Small C” or symptomatic anterior compartment prolapse (stage > 2) “Large C” was reviewed. Any patient with less than 10-year follow-up was excluded. Preoperative evaluation included detailed history, uterine status, pad use, and 3 validated questionnaires [Urogenital Distress Inventory-Short Form (UDI-6), Incontinence Impact Questionnaire-Short Form (IIQ-7), visual analog quality of life score (QoL)]. Follow-up data was based on office visits in EMR or structured telephone interviews for patients not seen in the past 2 years. Telephone interviews used similar validated questionnaires and were conducted by a third party not involved in patient care. Failure was defined as any reoperation for SUI or POP at the last patient encounter (Kaplan-Meier).

Results: Between 1996 and 2008, 161 of 328 patients met study criteria, with follow-up from phone interviews (103) or office visits (58). The 167 lost to follow-up patients were deceased (52), mentally disabled (5), or unreachable by telephone (110). Median follow-up was 13.5 years (range: 10-22.1). Type of follow-up (office vs. phone) and uterine status (concomitant/prior/no hysterectomy) did not impact main outcome measures. Comparative baseline and outcome measures (“Small C” vs. “Large C”) are presented in the table. The “Large C” group was older at the time of surgery and had a non-statistically significant higher reoperation rate. Reoperation occurred in 23 women (14%), with sacrocolpopexy (8), anterior colporrhaphy (5), injectable agents (8), or fascial sling placement (2). The Kaplan-Meier 10-year reoperation free survival rate was 87% (95% CI: 80.7-91.3).

Conclusion: The AVWS procedure to restore anterior vaginal support to the bladder neck and bladder base to correct SUI and/or POP can provide satisfactory and durable results.

Table: Patient characteristics by condition: SUI with early anterior compartment prolapse

<table>
<thead>
<tr>
<th></th>
<th>Total (n = 161)</th>
<th>Large C (n = 50)</th>
<th>Small C (n = 111)</th>
<th>p</th>
</tr>
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<tbody>
<tr>
<td>Mean age (std dev)</td>
<td>61.4 (6.7)</td>
<td>63.1 (6.1)</td>
<td>59.9 (10)</td>
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<td>Mean BMI (std dev)</td>
<td>26.1 (4.9)</td>
<td>26.1 (4.9)</td>
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<td>Mean gravid (std dev)</td>
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<td>2.7 (1.2)</td>
<td>2.7 (1.2)</td>
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<tr>
<td>Mean parity (std dev)</td>
<td>2.3 (3.1)</td>
<td>2.3 (3.1)</td>
<td>2.3 (3.1)</td>
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</tr>
<tr>
<td>Uterine Status</td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>Concomitant hysterectomy</td>
<td>48 (30%)</td>
<td>17 (30%)</td>
<td>31 (30%)</td>
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<tr>
<td>Prior hysterectomy</td>
<td>98 (63%)</td>
<td>30 (60%)</td>
<td>68 (61%)</td>
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<td>Uterine sparing</td>
<td>15 (9%)</td>
<td>3 (6%)</td>
<td>12 (11%)</td>
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<tr>
<td>Prior surgery</td>
<td>57 (35%)</td>
<td>17 (30%)</td>
<td>40 (36%)</td>
<td>0.2981</td>
</tr>
<tr>
<td>Concomitant repair</td>
<td>91 (57%)</td>
<td>29 (52%)</td>
<td>62 (55%)</td>
<td>0.3760</td>
</tr>
<tr>
<td>Baseline UDI-6-total</td>
<td>8.8 (4.2)</td>
<td>8.9 (4.2)</td>
<td>8.7 (3.7)</td>
<td>0.7331</td>
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<td>Baseline UDI-6-Q3, UDI-3</td>
<td>1.8 (1.3)</td>
<td>1.5 (1.3)</td>
<td>1.9 (1.2)</td>
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<tr>
<td>Baseline UDI-6-Q5, UDI-3</td>
<td>1.1 (2.2)</td>
<td>1.3 (2.2)</td>
<td>1.3 (2.2)</td>
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<td>Baseline UDI-6-Q6, UDI-3</td>
<td>1.1 (2.2)</td>
<td>1.3 (2.2)</td>
<td>1.3 (2.2)</td>
<td>0.1383</td>
</tr>
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<td>Baseline UDI-6-Q10, UDI-3</td>
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<td>1.2 (2.2)</td>
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<td>Baseline IQ-7-total</td>
<td>6.4 (6.3)</td>
<td>6.7 (6.3)</td>
<td>6.8 (6.3)</td>
<td>0.3954</td>
</tr>
<tr>
<td>Reoperation for AVWS failure</td>
<td>23 (14%)</td>
<td>12 (21%)</td>
<td>11 (10%)</td>
<td>0.0086</td>
</tr>
<tr>
<td>Pad per day</td>
<td>0.8 (3.1)</td>
<td>0.8 (3.1)</td>
<td>0.8 (3.1)</td>
<td>0.9696</td>
</tr>
<tr>
<td>Last UDI-6-total</td>
<td>3.4 (1.0)</td>
<td>3.4 (1.0)</td>
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<td>1.0000</td>
</tr>
<tr>
<td>Last UDI-6-Q3, UDI-3</td>
<td>0.8 (0.9)</td>
<td>0.8 (0.9)</td>
<td>0.8 (0.9)</td>
<td>0.9635</td>
</tr>
<tr>
<td>Last UDI-6-Q5, UDI-3</td>
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<td>0.6 (0.6)</td>
<td>0.6 (0.6)</td>
<td>0.9745</td>
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<tr>
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<td>0.6 (0.6)</td>
<td>0.9745</td>
</tr>
<tr>
<td>Last UDI-6-Q10, UDI-3</td>
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<tr>
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<td>1.2 (2.6)</td>
<td>1.2 (2.6)</td>
<td>0.0482</td>
</tr>
<tr>
<td>Median follow-up (range)</td>
<td>13.5 (10-22.1)</td>
<td>13.6 (10-22.1)</td>
<td>13.4 (10-22.1)</td>
<td>0.4082</td>
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</table>
Poster #NM38
NOCTURIA IN FEMALE PATIENTS: CURRENT CLINICAL FEATURES, TREATMENT PATTERNS AND OUTCOMES AT A TERTIARY REFERRAL CENTER
Siri Drangsholt, Benoit Peyronnet, MD, Maria Arcila-Ruiz, Rachael Sussman, Ricardo Palmerola, Dominique Pape, Nirit Rosenblum, Victor Nitti, Benjamin Brucker
New York University
Presented By: Benjamin Brucker, MD

Introduction: To report the current clinical features, treatment patterns and outcomes of female patients who were seen at a tertiary referral center with a primary diagnosis of nocturia and to assess the predictive factors of therapeutic management failure.

Methods: A retrospective chart review of all new female patients seen in a single-center functional urology practice with the diagnosis of nocturia was performed. Up to 3 visits within a 12-month period from the time of presenting were reviewed. The primary endpoint was patient reported improvement assessed at each follow-up visit and change in number of nocturia episodes.

Results: 239 female patients were included for analysis. A majority of women (51.5%) had at least one comorbidity possibly contributing to their nocturia, prior cardiac history and obesity being the most common (28.8% and 11.4% respectively). The prevalence of nocturnal polyuria, reduced bladder capacity and global polyuria were 75%, 40.2% and 18.1% respectively. Within the first two visits, 72.7% of patients had started a treatment beyond behavioral therapies. Anticholinergics were the most commonly initiated treatment (47.2% of patients). At the latest considered visit (i.e. second or third), 80 patients reported improvement of nocturia (45.5%) and there was a mean -0.8 (±1.5) decrease in number of nocturia episodes from 4 to 3.2, which was statistically significant (p<0.0001). There was no statistically significant association between any of the bladder diary findings and treatment outcomes. A smaller number of nocturia episodes was the only predictive factors of therapeutic management failure in multivariate analysis (OR=0.10; p=0.01).

Conclusion: While the prevalence of nocturnal polyuria in women with nocturia is high, the therapeutic management until 2016 seemed to rely mostly upon OAB medications with a relatively low success rate.
Poster #NM39
RADIOFREQUENCY ABLATION OF THE SUBTRIGONAL TISSUE TO TREAT REFRACTORY OAB IMPROVES QOL MEASURES, REDUCES UUI AND URGENCY VOIDS BUT INCREASES NON-URGENCY VOIDS
Eric S. Rovner, Professor of Urology1, Eboo Versi, Clinical Associate Professor2, Le-Mai Tu, Professor of Urology3, Roger Dmochowski, Professor of Urology4, Stefan deWachter, Professor of Urology5
1Medical University of South Carolina, 2Robert Wood Johnson Medical School, 3University of Sherbrooke, 4Vanderbilt University Medical Center, 5University of Antwerp
Presented By: Eric S. Rovner, MD

Introduction: Urgency is the central symptom of OAB but the interplay between urgency, frequency and impact on QoL deserves further research. SBD of the trigone is designed to uniquely ablate nerves thought to be responsible for the symptom of urgency. This intervention therefore serves as an interesting model to examine this symptom interplay.

Methods: 35 women with refractory OAB underwent SBD to ablate the nerves below the trigone while sparing the bladder urothelium and vaginal mucosa using a 60 second radiofrequency temperature-controlled algorithm. Pre- and post-procedure assessment at 1, 3, 6 and 12 months consisted of 3-day diaries, Kings Health Questionnaire (KHQ), OAB-q SF and follow up capture of Treatment Benefit Scale (TBS) and adverse events. Univariate and multivariate analyses were performed to determine which symptom had the greatest impact on QoL at baseline and following treatment.

Results: Patient age and duration of OAB was 66.1±8.7 and 9.8±7.7 years. Baseline (the mean±SD) data were 4.5±2.3 for daily urgency incontinence (UUI), 8.7±2.9 for urgency episodes and 12.3±2.8 for daily voids. At 12-months, these rates were reduced to 2.2±2.5, 5.0±3.8 11.4±2.9 respectively (all p<0.05), TBS score of 72% and clinically meaningful and statistically significant improvements in QoL scores for the KHQ and OABq SF were noted for every domain (all p<0.05) except General Health Perception, Personal Relationships and Emotions. The severity at baseline and post treatment change in UUI was the only diary variable predictive of QoL impact in multivariate analyses. When baseline void data was divided based on urgency relatedness (PPIUS 3 & 4 versus 0-2), urgency voids, like UUI episodes were positively correlated (Panel A) and non-urgency voids negatively correlated (Panel B) whereas overall urinary frequency was not correlated with OABq Symptom Bother (Panel C). Post-treatment, urgency voids decreased by 43% but non-urgency voids increased 47% (both p<0.05).

Conclusion: SBD reduces urgency related symptoms and improves QoL. Interestingly at baseline, defensive voiding appears to result in better QoL. These data suggest that even after a year, voiding frequency is driven more by habit than urgency, and SBD by reducing urgency, appears to convert urgency voids into non-urgency voids. The neurophysiological implications of SBD deserve further exploration.
Poster #NM40
PERSONAL PREFERENCES FOR THE USE OF NONABSORBABLE SYNTHETIC MESH IN THE MANAGEMENT OF STRESS URINARY INCONTINENCE AND PELVIC ORGAN PROLAPSE AMONG UROLOGISTS/ UROGYNECOLOGISTS
Sanchita Bose, MD1, Dayron Rodriguez, MD2, Ricardo Munarriz, MD3, Linda Ng, MD3
1Houston Methodist Hospital, Houston, TX, 2UT Southwestern Medical Center, Dallas, TX, 3Boston Medical Center, Boston, MA
Presented By: Sanchita Bose, MD

Introduction: Mesh is routinely used for the treatment of stress urinary incontinence (SUI) and pelvic organ prolapse (POP). However, its use is controversial, with the FDA ultimately releasing a statement deeming SUI and trans-abdominal POP mesh as acceptable for use, but cautioning on the use of transvaginal mesh for the repair of pelvic organ prolapse. The objective of this study was to evaluate the personal preferences on mesh use among urologists/urogynecologists (GU/UG) who routinely treat these conditions.

Methods: A non-validated survey was sent to SUFU members. The questionnaire asked participants if he/she had or hypothetically were to have SUI /POP, which treatment they would elect.

Results: 141/689 participants (mean age of 47.5 yrs) completed the survey. 53% percent were female, 58% were in academic practices, and 78% were fellowship trained. For SUI: 1) Male physicians were more likely to recommend autologous fascial slings and less likely to recommend pelvic floor PT (PFPT) (p=0.001), 2) Private practice practitioners were more likely to recommend synthetic mid urethral slings (MUS), while academic practitioners were more likely to recommend PFPT and autologous fascial slings (p=0.027) 3). High volume surgeons were more likely to recommend MUS and less PFPT (p=0.038). For POP: 1) Male practitioners were more likely to recommend Native Tissues/Biological Grafts repairs (p=0.013) 2) There was a trend for private practice practitioners to more frequently recommend transvaginal mesh, 3) Surgeon volume did not appear to significantly affect recommendations. In a hypothetical situation with the respondent personally having SUI, 68.57% elected MUS, 11.43% PFPT, 7.14% autologous fascial sling, and 9.29% to start with PFPT followed by MUS should PFPT fail. For personal POP treatment, 33.6% chose native tissue repair, 22.86% transabdominal repair with sacrocolpopexy, 10% transvaginal mesh, 8.5% pessary, 4.3% PFPT, and 4% choosing alternative graft material.

Conclusion: The use of mesh for SUI and POP has been mired with controversy leading to FDA, SUFU AUGS statements on synthetic mesh use. Our study found that the majority of urologists/urogynecologists who regularly perform surgery for SUI and POP chose MUS as a viable option for treatment of SUI should the provider have this condition. The choice of treatment for POP was more variable.
Poster #NM41
MESH COMPLICATIONS FROM MIDURETHRAL SLINGS: ARE THEY ASSOCIATED WITH INCREASED DEPRESSION AND SELF-HARM BEHAVIOR?
Blayne Welk¹, Jennifer Reid²
¹Western University, ²ICES Western
Presented By: Blayne Welk, MD, MSc

Introduction: There are substantial public doubts about the safety of midurethral slings due to regulatory warnings, lawsuits, and media scrutiny. Many women with complications describe significant emotional distress. Our objective was to determine whether women who experience midurethral sling mesh complications have an increased risk of depression or self-harm behavior.

Methods: We conducted a population-based study using linked routinely collected data from the universal healthcare system of Ontario, Canada. We identified women who had their first midurethral sling surgery between January 1, 2004 and December 31, 2015. The primary exposure was whether women had evidence of a surgical procedure likely related to a mesh complication after midurethral sling placement. The primary outcome was presentation to the medical system for treatment of depression. Our secondary outcome was evidence of self-harm. We used data from the day of their midurethral sling surgery until death or March 31, 2017 to assign exposure status and determine whether an outcome occurred. Relevant covariates were measured and included in the adjusted model as appropriate. A two-sided p-value

Results: We identified 57,611 women who underwent a midurethral sling during the 12-year period; 1586 (2.8%) underwent a surgical procedure for a mesh complication. In our primary analysis, we identified a significantly increased risk of depression among women who required surgery for a mesh complication; due to a statistically significant interaction between age and amidurethral sling complication (p=0.04), we stratified our cohort by age groups. There was a significantly increased risk of depression only in women

Conclusion: Younger women who experience midurethral sling complications that are treated surgically have a higher risk of depression and self-harm. The reason for this may be multifactorial such as recurrent incontinence, continued symptoms from the complication, or difficulty obtaining timely treatment.

Poster #NM42 - WITHDRAWN
Poster #NM43

PATIENT PREFERENCE IN THEIR UROLOGISTS’ GENDER: IS THERE A BIAS?
David Abramowitz, MD1, Nahomy Calixte, MD2, Hadley Narins, MD3, Teresa Danforth, MD1
1Department of Urology, University at Buffalo, 2Watson Clinic, Lakeland, FL, 3Associated Medical Professionals, Syracuse, NY
Presented By: David Abramowitz, MD

Introduction: Visits to the urologist can create a unique patient-doctor dynamic due the taboo nature of many patient complaints. The purpose of this study is to investigate if patients seeing a Urologist have a preference in the gender and level of training of their provider.

Methods: A 19 question survey was distributed to patients aged 18 and above at the completion of their office visits. Questions ranged from obtaining patient demographics to various preferences in their providers’ gender and level of training. Clinics in which surveys were distributed ranged from Medicaid clinics to private practice offices. All surveys were submitted anonymously. Study completed under IRB approval.

Results: A total of 100 surveys were completed for analysis. 66 respondents identified themselves as female and 34 identified themselves as male. Of the female respondents, 54.5% preferred seeing provider of same gender, 1.5% preferred opposite gender and 43.9% had no preference. If surgery was needed, 30.3% preferred a female, 1.5% preferred a male and 68.2% did not have a preference. Of the male respondents, 17.6% preferred seeing provider of same gender, 14.7% preferred opposite gender and 67.6% had no preference. If surgery was needed, 20.6% preferred a male, 8.8% preferred female and 70.6% had no preference. In the subgroup of females visiting their Urologist for either voiding dysfunction or pelvic organ prolapse, 60.8% preferred to see a female provider and 39.2% expressed no gender preference. If surgery was needed, 33.3% preferred a female and 66.7% had no gender preference. In responding to satisfaction of seeing a resident doctor, 74.2% of females and 73.6% of males responded ‘neutral’, ‘slightly satisfied’ or ‘very satisfied’.

Conclusion: The majority of females visiting a Urologist appear to prefer to see a provider of the same gender. If surgery were needed, the majority of patients do not exhibit a gender preference for their surgeon. These results appear consistent regardless of the reason for visit. Resident physicians also appear to be reasonably well received by patients.
Poster #NM44
PATIENTS HAVE POOR COMPLIANCE WITH REPEAT ONABOTULINUMTOXIN A INJECTIONS FOR OVERACTIVE BLADDER
Anh Nguyen¹, Justina Tam², Chris Du¹, Qingjie Wang¹, Michael Hung², Jason Kim²
¹Stony Brook University School of Medicine, ²Department of Urology, Stony Brook University Medical Center
Presented By: Anh Nguyen, BA

Introduction: Intra-detrusor onabotulinumtoxin A (Botox®) injection is an efficacious treatment for overactive bladder (OAB). There is a lack of literature characterizing compliance with Botox therapy. We report the outcomes of Botox injection at our institution and evaluate factors which correlate with continuation of maintenance Botox injection.

Methods: A retrospective chart review was performed on all patients who received Botox injections from April 2013 to September 2018. Patients who received one injection were compared to those who received more than one. All data analysis performed with SPSSv25.

Results: We identified 213 patients who received at least one Botox injection. After the first injection, 82% (174/213) reported subjective symptom improvement. Of those who reported improvement, 57% (99/174) followed up for a second injection. Of those who reported no improvement, 27% (8/30) also received a second injection. In total, 50% (107/213) returned for a second injection. Patients who received multiple injections were more likely to have perceived symptomatic improvement (p=0.007), and have neurological disorders (p=0.001); those who received multiple injections were less likely to have side effects (p=0.009). There was no significant difference in age, gender, BMI, or distance to clinic between these groups (Table 2). Even among patients who reported improvement after Botox injection, compliance for subsequent injections was low (Table 1).

Conclusion: There is a paucity of literature regarding the factors associated with maintenance of Botox injections to treat OAB. Our data suggest that the presence of neurological disorders may influence continuation of Botox therapy. Additionally, we found that despite reported symptomatic improvement, a significant proportion of patients did not follow up for repeat injections.
Poster #NM45
PREVALENCE OF PELVIC FLOOR DISORDERS IN FEMALE CROSSFIT ATHLETES
Kim H. Thai1, Rachel High2, Hina Virani3, Jill Danford2
1Department of Urology, Baylor Scott and White Health, 2Department of Female Pelvic Medicine Reconstructive Surgery, Baylor Scott and White Health, 3Department of Obstetrics Gynecology, Baylor Scott and White Health
Presented By: Kim H. Thai, MD

Introduction: 25% of females in the US have at least one Pelvic floor disorder (PFD): urinary incontinence (UI), fecal incontinence (FI), or pelvic organ prolapse (POP). The prevalence of stress urinary incontinence (SUI) is higher in athletes who participate in high impact activities (28-80%). CrossfitTM is a branded fitness regimen known for its focus on high-intensity workouts. The objective of this survey study was to estimate the prevalence of PFDs in a population of female CrossFit athletes: FI, POP, and UI.

Methods: A 27-question anonymous electronic questionnaire was distributed to owners of CrossFit affiliated gyms by email and Facebook. Survey questions gathered baseline information. Pelvic Floor Distress Inventory and the International Consultation on Incontinence Questionnaire- Urinary Incontinence (short form) inquired about symptoms. Response of "yes" to "loss of stool you cannot control" defined FI. Response of "yes" to "feeling a vaginal bulge/something coming out of the vagina" defined presence of symptomatic POP. Responses of "moderate, or quite a bit" for degree of bother from urine leakage defined UI if the respondent also reported a small, moderate, or large amount of leakage in the ICIQ-UI SF. Urge UI (UUI) was classified as incontinence with "a feeling of urgency, that is, a strong sensation of needing to go to the bathroom". Stress UI (SUI) was classified as incontinence with "coughing, sneezing, or laughing".

Results: 314 respondents of mean age 36 ± 10 years, and mean BMI 25.2 ± 4.39 were included over a 10-month period. 44% reported ≥1 vaginal delivery, 12.7% reported ≥1 cesarean section. 90% reported participation in ≥ 3 Crossfit workouts per week. Respondents were from various regions: Northeast (98/301), Southeast (71/301), Southwest (55/301), West (43/301), and Midwest (42/314).

Conclusion: This is the largest prevalence study with geographic diversity and representation of many age groups conducted on female athletes performing high-impact/intense workouts. The overall prevalence PFD in female athletes performing regular high-intensity exercises is similar to that of the general population.

Poster #NM46
BMI>35 COULD BE ASSOCIATED TO A WORSE COMPOSITE OUTCOME FOR SUI SLING PROCEDURE-
RETROSPECTIVE STUDY OF A LARGE DATASET OF PATIENTS
Javier Pizarro-Berdichevsky, Bernardita Blumel, Trinidad Raby, Fabiola Schlageter
División de Obstetricia y Ginecología, Hospital Sótero del Río, Pontificia Universidad Católica de Chile
Presented By: Javier Pizarro-Berdichevsky, MD

Introduction: Few studies have evaluated surgical outcomes of stress urinary incontinence (SUI) in obese women. Most of them, have not demonstrated a difference in the short-term. The aim was to evaluate impact of BMI on TVT or TOT surgical failure and complications on the long-term follow-up (FU)

Methods: We performed a retrospective analysis from our database on patients who underwent TVT or TOT (2008 – 2016) with BMI available. Demographics, surgery details, surgical failure according composite outcome (subjective complaint of SUI or leakage during exam or reoperation for SUI on FU), and known complications were analyzed. BMI was stratified as normal, overweight or obese or as a dichotomous variable between normal vs overweight/obese or normal/overweight vs obese or as > or less than 31 to 35 (above 36 was excluded due to low sample size). A logistic regression analysis for the composite outcome was used including BMI, type of sling and all variables with p values < 0.1 on the univariate analysis.

Results: 881 patients underwent TOT or TVT. 706 patients were included. 419(59.3%) were TVT and 287(40.7%) TOT. 71(10.1%) were normal weight (≤25 kg/m2), 302(42.8%) overweight (25.1-30) and 333(47.2%) obese (≥30). The median FU was 32.7 months (4.6-50). Surgical failure according to composite outcome for these three groups was 7%, 9.9% and 9.9%, respectively (p=0.732). There were no differences using BMI as continues variable or among all the groups for composite outcome or other significant outcomes. However, when dividing the patients into two groups, BMI

Conclusion: Women with BMI ≥35 and TOT had a 2.2 and 1.7 fold increased risk for surgical failure, respectively. Obese and overweight patients were equally likely to have complications from TVT/TOT. We concluded that TVT and TOT are equally safe for female SUI regardless of BMI.
Poster #NM47
PERSISTENT STRESS URINARY INCONTINENCE FOLLOWING PUBOVAGINAL SLINGS IN PATIENTS WHO FAILED PREVIOUS ANTI-INCONTINENCE PROCEDURES: PREVALENCE, RISK FACTORS AND MANAGEMENT
Ricardo Palmerola¹, Benoit Peyronnet, MD¹, Michelle Peng², Rachael Sussman¹, Christina Escobar¹, Nirit Rosenblum¹, Victor Nitti¹, Benjamin Brucker¹
¹NYU LANGONE MEDICAL CENTER, ²George Washington University
Presented By: Ricardo Palmerola, MD

Introduction: Despite the widespread use of synthetic mid urethral slings (MUS) in clinical practice, autologous fascial pubovaginal sling (AFPVS) continues to have an important role in women with stress urinary incontinence (SUI), notably in those who failed previous anti-incontinence procedures. The aim of this study was to assess the prevalence, risk factors and management of persistent SUI following AFPVS in patients who failed previous anti-incontinence procedures.

Methods: The charts of all female patients who underwent AFPVS for SUI from 2012 to 2017 at a single academic center were retrospectively reviewed. Only patients who had failed at least one previous anti-incontinence procedure were included in the present study. Patients with neurogenic bladder were excluded. The primary endpoint was persistent SUI at 3 months defined as patient reporting the need to wear one pad per day or more. Univariate and multivariate logistic regression analysis was performed to assess predictors of persistent SUI at 3 months.

Results: After exclusion of 29 patients with no prior anti-incontinence procedures and 6 patients with neurogenic bladder, 70 patients were included in the present study. The mean patient age was 58.2 years, and the most common prior SUI surgeries were MUS (85.7%), bulking agents (25.7%) and Burch Colposuspension (8.6%). Most patients reported improvement of SUI at 3 months (83.2%), however 24 reported persistent SUI (34.3%), of which 14 reported improvement (22.9%) and 10 unchanged or worsened SUI (16.8%). The median number of pads per day at 3 months in those with persistent SUI was 1 (range: 1-10). After a median follow-up of 14.4 months, 10 patients (14.3%) had retreatment for SUI. Those who failed prior MUS had lower risk of persistent SUI than those who failed prior Burch and/or bulking (32.7% vs. 77.8%; p=0.02). This was the only predictor of persistent SUI in univariate analysis (OR=0.14; p=0.02) and in multivariate analysis adjusting for age, BMI and urethral hypermobility (OR=0.10; p=0.01).

Conclusion: AFPVS is an effective treatment option for women who failed previous anti-incontinence procedures. Patients who failed MUS may have a lower risk of persistent SUI when compared to this who failed Burch and/or Bulking agents.
**Poster #NM48**

**RECTUS FASCIA VS. FASCIAL LATA FOR AUTOLOGOUS FASCIAL PUBOVAGINAL SLING: A SINGLE-CENTER COMPARISON OF PERIOPERATIVE AND FUNCTIONAL OUTCOMES**

Rachael D. Sussman, Michelle Peng, Benoit Peyronnet, Ricardo Palmerola, Christina Escobar, Dominique Pape, Scott Smilen, Nirit Rosenblum, Benjamin Brucker, Victor Nitti

New York University

Presented By: Rachael D. Sussman, MD

**Introduction:** Autologous fascial pubovaginal slings (AFPVS) are the most widely used surgical treatment in patients with complex stress urinary incontinence (SUI). The majority of series have reported the use of rectus fascia grafts. Despite this convention, the use of fascia lata has been described as an alternative with the benefits of minimizing postoperative pain, facilitating fascial harvest in patients with a history of extensive abdominal surgery, poor quality abdominal fascia or significant central obesity, and theoretically lowering the risk of abdominal complications such as wound infections. The aim of the present series is to compare perioperative and functional outcomes of autologous fascia lata vs. rectus fascia pubovaginal sling in female patients with SUI.

**Methods:** Charts of all female patients who underwent AFPVS for SUI from 2012 to 2017 at a single academic center were retrospectively reviewed. Patients were divided into two groups: those with the autologous sling harvested from the fascia lata (FL group) and those with the autologous sling harvested from the rectus fascia (RF group). Peri-operative and functional outcomes were compared.

**Results:** Between 2012 and 2017, 105 women underwent pubovaginal slings: 21 using FL and 84 using RF. Operative time did not differ significantly between the FL and RF groups (84 vs. 81.9 min; p=0.68). There were more wound complications in the RF group but this difference did not reach statistical significance (0% vs. 14.3%; p=0.12). The overall complications rates were comparable in the FL and RF groups (52.4% vs. 48.9%; p=0.81) but the proportion of postoperative complications Clavien grade ≥ 2 tended to be higher in the RF group (4.8% vs. 20.2%; p=0.11). Overall, wound complications accounted for 29.3% of post-operative complications in the RF group (12/41). The functional outcomes were comparable between FL and RF group, with similar rates of patients dry at 1 month (82.4% vs. 76.4%; p=0.74), at 1 year (55.6% vs. 63.8%; p=0.76) and at the latest follow-up (66.7% vs. 65.8%; p=0.87).

**Conclusion:** When compared to rectus fascia harvest for pubovaginal sling, fascia lata harvest may decrease perioperative morbidity, especially wound complications, without compromising functional outcomes.
Poster #NM49
CAN WE UNIFY THE FIELD OF QUESTIONNAIRES IN WOMEN WITH MIXED URINARY INCONTINENCE?: DOMAIN COMPARISON BETWEEN 6 VALIDATED QUESTIONNAIRES
Rena D Malik¹, Deborah Hess², Alana Christie², Maude E Carmel², Philippe E Zimmern²
¹University of Maryland School of Medicine, Dept. Surgery, Baltimore, MD, ²University of Texas Southwestern Medical Center, Dept. Urology, Dallas, TX
Presented By: Rena D. Malik, MD

Introduction: Validated questionnaires for mixed urinary incontinence (MUI) have emerged to quantify urinary incontinence (UI) symptoms. We compared patients’ questionnaire-reported UI symptoms to determine which have the best concordance.

Methods: Women with self-reported MUI were asked to report QoL due to urinary problems on a visual analog scale and complete 6 standardized validated questionnaires with questions on MUI (MESA, UDI-6, IIQ-7, ICIQ-SF, KHQ, PGI-S). Specific questions related to SUI, UUI, UI severity and Quality of Life (QoL) were compared within surveys from each patient using a Pearson correlation coefficient.

Results: Twenty consecutive women participated in the study with a mean age of 64±13 years and mean time to complete all surveys of 11.2±5.4 minutes. For SUI and UUI subdomains, KHQ, UDI-6, and MESA were well correlated, however specific ICIQ questions related to SUI and UUI were less often well correlated (Table 1). For severity subdomains, the UDI-6 score was poorly correlated with the KHQ, PGI-S, and ICIQ scores (all p > 0.1). KHQ correlated well with the PGI-S (0.64, p=0.003) and ICIQ score (0.58, p=0.008). PGI-S and ICIQ severity scores were also well correlated (0.56, p=0.012). QoL on a VAS (range: 1 or pleased to 10 or terrible) was significantly well correlated with both KHQ (0.75, p<0.001) and the IIQ-7 (0.64, p=0.003). KHQ and IIQ-7 were also well correlated (0.64, p=0.003).

Conclusion: In this pilot study, validated questionnaires with questions regarding MUI were mostly well correlated in women for subdomains of SUI, UUI, QoL and severity. However, specific ICIQ questions related to SUI and UUI were poorly correlated with other survey results in regards to UI symptoms. The UDI-6 total score was poorly correlated with other survey results in regards to UI symptom severity. Results of the ICIQ and UDI-6 total score may be less indicative of patient’s complaints in these particular subdomains.

Table 1. Correlation between questionnaires for SUI and UUI subdomain scores

<table>
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<th>SUI subdomain</th>
<th>UDI-6 Q3</th>
<th>MESA SUI</th>
<th>ICIQ Q4c</th>
<th>ICIQ Q4d</th>
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</table>

SUI questions are compared on the top; UUI questions are compared on the bottom.
Poster #NM50
IS LESS MORE? A CADAVER MODEL TO ASSESS DIFFUSION PATTERNS OF INTRADETRUSOR INJECTIONS
Lauren Tennyson¹, Esther Han¹, Kenneth M Peters¹,², Larry T Sirls¹,²
¹Department of Urology, Beaumont Health, Royal Oak, MI, ²Oakland University William Beaumont School of Medicine, Rochester, MI
Presented By: Lauren Tennyson, MD

Introduction: In order to maximize tolerability and minimize risk of intravesical botox, studies are looking at reducing injection sites and increasing each volume of injection, while assuming diffusion of the drug. Our objective was to evaluate diffusion patterns of varying injection volumes over varying rates.

Methods: Two fresh female cadaver pelvises were used. The tissue was warmed to 98 F with warm saline bladder irrigation through a three-way catheter. A 22 Fr rigid cystoscope with Laborie botox needle (3 mm) was used to inject four tissue marking dyes (blue, black, orange and green) diluted in saline. The bladder was filled with 200 mL of normal saline. The first bladder was injected in four quadrants: right base with of 1 mL over 3 seconds (black), left base with 1 mL over 3 seconds (blue), right dome with 3 mL over 9 seconds (green) and left dome with 5 mL over 15 seconds (orange). We performed an en bloc cystectomy and bi-valved the bladder for further examination. Based on these results we injected the second cadaver pelvis with 5 mL over 15 seconds (green) into the left bladder base and five separate 1 mL injections (black) into the right bladder base.

Results: There were two primary observations 1) a significant amount of dye extravasated into the perivesical fat and 2) diffusion patterns were more widespread than expected. A single 5 mL injection and 5 separate 1 cc injections into the base resulted in dramatic diffusion visible at the dome within several minutes (photo). Dye diffusion progressed over 30 minutes and was hard to quantify. Perhaps equally important were observed limitations and challenges of working with cadaver pelvises. These include regulating tissue temperature, variable cadaver age (one pelvis was a 98 year-old female and the bladder was very thin, which likely contributed to the extent of extravesical extravasation), and technical limitations of simulating a clinical procedure on a cadaver.

Conclusion: There was substantial diffusion of dye throughout the cadaveric bladders, namely one injection of 5 mL diffused from the base into the dome. While accounting for the limitations of the cadaver model, these observational findings may support use of fewer injection sites.
**Poster #NM51**

RESOLUTION OF URINARY INCONTINENCE FOLLOWING PELVIC ORGAN PROLAPSE SURGERY  
Shirly Solouki, MD\(^1\), Sophie Shoval, MS\(^2\), Nitya Abraham, MD\(^3\)  
\(^1\)Albert Einstein College of Medicine/Montefiore Medical Center Department of OB/GYN, \(^2\)Albert Einstein College of Medicine, \(^3\)Albert Einstein College of Medicine/Montefiore Medical Center Department of Urology  
Presented By: Shirly Solouki, MD

**Introduction:** Women undergoing pelvic organ prolapse (POP) surgery often have urinary incontinence (UI). Data on resolution of urgency (UUI) and stress urinary incontinence (SUI) following POP repair is conflicting. The objective of this study was to evaluate whether POP severity and type of POP surgery are associated with resolution of UI.  

**Methods:** This is a retrospective review of women with SUI and/or UUI who underwent POP surgery with or without a synthetic mid-urethral sling from January 2014 to January 2017. Charts were reviewed for patient report of resolution of SUI and UUI up to 12 months after surgery. Age, race, vaginal parity, cesarean delivery, BMI, smoking status, diabetes, POPq stage, and type of prolapse surgery (vaginal or abdominal) were compared between women who had persistent UI and resolved UI using chi-square or t-tests.  

**Results:** 61/82 (74.3%) and 87/103 (84.5%) women experienced resolution of UUI and SUI respectively. The mean BMI was significantly higher in the persistent SUI (29 versus 31.9 p=0.014) and UUI (29.1 versus 30.7 p= 0.013) groups. There were no statistically significant differences in mean age, gravidity, parity, smoking, and diabetes among women with resolution or persistence of UI. Of the women who had resolution of UI, a higher percentage had stage 3-4 POP (SUI 60.0% and UUI 60.3%), compared to stage 1-2 POP (SUI 40.0% and UUI 39.7%), although this was not statistically significant. 31/37 (83.8%) of patients with UUI who had a concomitant sling had resolution of UUI, compared to 28/41 (68.3%) of patients who did not have a concomitant sling placed (p=0.196). There was no significant difference in resolution or persistence of UI in women who had vaginal compared to abdominal POP repair.  

**Conclusion:** Our results demonstrate that higher BMI is a risk factor for persistent UI. The majority of women experienced resolution of UI 12 months after POP surgery, regardless of prolapse severity or surgical approach to POP repair. Concomitant sling placement was associated with resolution of urgency incontinence. Long-term follow-up is needed to see if UI rates change more than 1 year after POP surgery.
Introduction: The psychosocial impact of bowel symptoms in the pediatric population has been well studied and reported in the literature. Little information is known on the impact of bowel dysfunction on adults as it relates to their social behavior. The goal of this study is to identify possible bowel symptoms which may impact adult psychosocial behavior.

Methods: This was an IRB approved, cohort study surveying women ≥18 years of age regarding their bowel habits and medical history. The ICIQ_FLUTS and ICIQ_B was used to assess bowel and bladder function. We excluded participants with prior colectomy, cystectomy, diagnosis of neurologic conditions, interstitial cystitis and inflammatory bowel syndrome or inflammatory bowel disease. Bowel dysfunction was defined as having a bowel movement >2 times per day and/or experiencing involuntary bowel leakage. The Pearson Chi squared test was used to measure association between bowel dysfunction, social impact and self-reported depression or anxiety.

Results: There were 4789 participants who met inclusion criteria. Of these participants, 2661 (55.6%) reported at least one episode of bowel leakage over the past three months. Twenty-nine respondents reported staying at home more often than they would like “most of the time to always” due to their bowel symptoms. Staying at home due to bowel symptoms was not significantly associated with urinary frequency (p= .211) or bowel frequency (p=0.072). Unpredictable bowel leakage experienced “sometime to always” and inability to control loss of stool were associated with patients staying at home due to bowel symptoms (p<0.0001). Women with ≥1 episode of bowel leakage were more likely to be depressed than women with no bowel leakage. (p<0.001). Anxiety was not found to be statistically significantly associated with bowel leakage (p=.348).

Conclusion: Bowel dysfunction outside of a known medical diagnosis is prevalent at rates that are higher than appreciated. Patients experiencing uncontrollable bowel leakage limit their social engagements and report higher rates of depression than those who do not experience bowel leakage. This information is critical for clinicians, particularly those responsible for the care of patients with voiding dysfunction, as this knowledge can lead to a holistic and improved patient care.
Poster #NM53
MANAGEMENT OF PATIENTS WITH OVERACTIVE BLADDER WHO FAIL INTRADETRUSOR ONABOTULINUMTOXINA INJECTIONS: WHAT HAPPENS NEXT?
Patricia M. Zahner, Laura L. Giusto, Samir Derisavifard, Jessica J. Rueb, Michele Fascelli, Courtenay K. Moore, Raymond R. Rackley, Sandip P. Vasavada, Howard B. Goldman
Cleveland Clinic Foundation
Presented By: Patricia M. Zahner, MD

Introduction: Treatment of overactive bladder (OAB) follows an algorithmic pathway culminating in third-line therapies. Although these have high success rates, the literature is sparse on how to manage failures. We examined practice patterns regarding patients who failed intradetrusor onabotulinumtoxinA injection (BTX-A).

Methods: All patients undergoing intradetrusor BTX-A injection for neurogenic and non-neurogenic OAB from 2016-2018 were retrospectively reviewed. Patient demographics and clinical information including age, gender, race, body mass index (BMI), procedural indication, dose, subjective improvement, interval between injections, adverse events (AE), follow up, and subsequent therapies were recorded. Failure of initial BTX-A injection was defined as an unsatisfactory subjective response after a maximum of two injections. Appropriate statistical tests were performed.

Results: A total of 282 patients underwent 516 intradetrusor BTX-A injections. Patients were predominantly female (82.3%), with an average age of 64.2±14.5 and BMI of 30.8±8.3. 31.9% of the population had a neurogenic bladder; among non-neurogenic patients, 88% reported OAB wet symptoms. The average number of BTX-A injections per patient was 2.1 over the study period, with a failure rate of 33% and overall AE rate of 11.7%. No demographic differences were noticed between patients who failed and had successful injections. The AE rate for failures (16%) was not significantly higher than successes (9.5%, p=0.12). Among failures, time to follow up (62.2±95.6 vs. 123±113.0 days, p<0.01) was shorter and these patients were more likely to undergo repeat injection at a higher dose (p<0.01). Of the 93 failures, 38.7% were lost to follow up. In order of decreasing frequency, the remaining patients underwent pharmacotherapy, repeat intradetrusor BTX-A injections, sacral neuromodulation (SNM), or other surgical therapy (Table 1). No patients went on to percutaneous tibial nerve stimulation.

Conclusion: Pharmacotherapy was the most common next step in patients who subjectively failed BTX-A injections for neurogenic and non-neurogenic OAB. Less frequently, repeat BTX-A injections and SNM was pursued. Overall, failures did not have a higher AE rate, but were more likely to be lost to follow up.
ANATOMICAL CHARACTERISTICS OF SUBTRIGONAL ZONE AS POTENTIAL AREA FOR NOVEL TARGETED APPROACHES TO TREAT BLADDER DYSFUNCTION: MRI STUDY IN FEMALES

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1University of California Irvine Department of Urology, 2University of California Irvine Department of Radiology

Presented By: Naila Javaid, MD

Introduction: Magnetic resonance imaging (MRI) is being used increasingly to evaluate the female pelvis due to the high-contrast resolution allowing for improved tissue characterization. Recent studies have shown the subtrigonal region to be richly innervated and new localized therapies have been tested to treat overactive bladder (OAB). The primary aim of this study is to evaluate the precise anatominal relationships in this region to develop ways to improve targeted therapies. The secondary aim is to detect variations of measurements in different conditions.

Methods: This is a retrospective study of female patients age 18 or older who underwent MRI of the pelvis with and without contrast performed at University of California Irvine in 2017. Two board-certified radiologists trained 3 data collectors on how to take MRI measurements using Impax. Measurements were standardized in sagittal and axial T2 images of the pelvis. Data points include: anterior vaginal wall thickness at the level 10 mm proximal from bladder neck (trigone), vaginal epithelium to urothelium and urethral length from bladder neck to external meatus. Demographics and history were obtained from electronic medical records including: date of birth, race, BMI, hysterectomy status, pelvic organ prolapse, urinary incontinence and fibroids. Measurements were compared using paired two-tailed t test and ANOVA.

Results: A total of 85 subjects were included in the analysis. Table 1 summarizes the subject demographics and findings of our primary aim. There was significant difference in distance of vaginal epithelium to bladder urothelium (p<0.05). Race significantly impacted vaginal wall thickness and vaginal epithelium distance to urothelium (p<0.05).

Conclusion: Variability of the subtrigonal space is seen as compared to age and race, menopause status may also play a role in this. Understanding the characteristics of this region will aid in development of targeted therapeutic approaches to treating OAB in women.
**Poster #NM55**

**A COMPARISON OF FREE FLOW CONFIGURATION AND VIDEO-URODYNAMIC FINDINGS IN WOMEN WITH LOWER URINARY TRACT SYMPTOMS: IS CONFIGURATION PREDICTIVE OF OBSTRUCTION?**

Bogdan Toia, Richard Axell, Habiba Yasmin, Mahreen Pakzad, Rizwan Hamid, Tamsin Greenwell, Jeremy Ockrim

University College London Hospital

Presented By: Jeremy Ockrim, MD, BSc(Hons), FRCS

**Introduction:** Clinicians rely on uroflowmetry configuration and voiding parameters to evaluate the need for further investigations of the lower urinary tract. Literature on the predictive value of free flow is sparse. We aim to establish the correlation between free flow configuration and video-urodynamic findings in women with lower urinary tract symptoms.

**Methods:** A retrospective review of consecutive women with LUTS who performed a free flow study immediately before undergoing video-urodynamic investigations over a 28-month period. Free flow configuration and video-urodynamic parameters were analysed. Free flow was defined in 5 categories (bell shaped, prolonged, irregular (variable but continuous flow), interrupted or plateau. Women who voided less than 150ml on free flow were excluded from the analysis.

**Results:** A total of 250 women with LUTS with a mean age 48 years (range 18 – 83) were included. Urodynamic diagnoses are detailed in Table 1. Bell shaped tracings excluded obstruction in 89%. Prolonged free flows diagnosed obstruction in 62% and hypocontractility in 8%. Irregular and interrupted free flows were associated with urodynamic obstruction in 37% and 39% respectively and hypocontractility in 25% and 29%. A plateau flow was indicative of urodynamic obstruction in all 3 cases.

**Conclusion:** A free flow is suggestive of urodynamic diagnosis. Women without a prolonged void and bell shaped trace had normal voiding urodynamics in 76%, and could be managed without invasive investigation in the majority. Patients with irregular and interrupted flows demonstrate a spectrum of urodynamic diagnosis with a third having obstruction and a third hypocontractility. Plateau flows are universally associated with urethral obstruction.

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**Table 1:**

<table>
<thead>
<tr>
<th>Flow configuration (%)</th>
<th>Mean maximum flow rate</th>
<th>Mean residual volume</th>
<th>Pressure-flow diagnosis (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bell shaped (133)</td>
<td>27.7mls/ (7.6-1)</td>
<td>74mls (6-720)</td>
<td>Obstruction (15), cystocele (6), IHTNS (3), detrusor (2), meatal opening post tape (2), stress (2), DSD (1)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Hypocontractility (6)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Acontractile (1)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Non-obstructive, normal contractility (102)</td>
</tr>
<tr>
<td>Prolonged (25)</td>
<td>14.4mls/ (5.3-15.8)</td>
<td>198mls (6-705)</td>
<td>Obstruction (22), cystocele (6), IHTNS (7), detrusor (2), hypocontractility (3), DSD (2), detrusormyectomy (1), pubic RFS (1)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Hypocontractility (6)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Acontractile (9)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Normal contractility (23)</td>
</tr>
<tr>
<td>Interrupted (26)</td>
<td>26.2mls/ (5.3-29.8)</td>
<td>160mls (6-705)</td>
<td>Obstruction (11), cystocele (1), IHTNS (6), Detrusor (2), Detrusormyectomy (2), Hypocontractility (1), Acontractile (2)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Non-obstructive, normal contractility (27)</td>
</tr>
<tr>
<td>Plateau (3)</td>
<td>8.9mls/ (6.3-13.6)</td>
<td>79mls (6-235mls)</td>
<td>Obstruction (2), cystocele (1), structure (2)</td>
</tr>
</tbody>
</table>

IHTNS = High Tone Non Retaining Sphincter, DSD = Detrusor Sphincter Dysnergia, RFS = Rectus fascial sling.
Poster #NM56
IMPACT OF HANDS-ON TEACHING OF TRANSOBTURATOR SLING PLACEMENT ON CADAVERIC MODEL
Iryna Crescenze, Giulia Lane, MD, Priyanka Gupta, Paholo Barboglio Romo
University of Michigan
Presented By: Iryna Crescenze, MD

Introduction: Transobturator mid urethral sling (TO-MUS) is an effective treatment option for stress urinary incontinence. While some anatomical studies suggest that trocar passage is highly accurate independent of surgeon experiences others showed a wide variability of trocar trajectories. For learners, placement of TO-MUS is associated with significant anxiety, especially during the blind passage of the trocar. The purpose of this work was to evaluate the trocar passage results in learners on cadavers after a teaching demonstration by an experienced surgeon and to examine how trainees’ perspectives changed after the hands-on experience.

Methods: The study was approved by the institutional anatomical donations program. Altis sling (Coloplast, Minneapolis, MN) used in this study is an adjustable single-incision polypropylene sling. It is 7.75 cm long and is placed inside out by advancing the anchors into the obturator foramen just past the membrane. Following a one-hour instructional session, trainees performed TO-MUS. The cadavers were placed in lithotomy position with 30 degrees of Trendelenburg. Following urethral dissection, the sling was placed and secured. Thigh dissection was performed to identify the location of the anchor in the obturator membrane. Pre- and post-study 10-point visual analog scale questionnaires were administered to examine how learners’ comfort level changed.

Results: A total of 8 learners participated and 10 trocar passes were analyzed. Eighty percent (8/10) of the anchors were noted in an appropriate position within the obturator membrane - medial border of the foramen, away from the obturator nerves and vessels in the superior lateral aspect. One anchor was found deep in the muscles of the thigh and one was positioned near superior lateral aspect of the obturator membrane concerning for injury to the neurovascular structures. Both malpositioned anchors were passed by trainees who placed zero TO-MUS in the past. Statistically significant improvement in the comfort level with procedure on a 10-point Visual Analog Scale (VAS) was reported by all trainees (Table 1).

Conclusion: Hands-on teaching of TO-MUS placement resulted in accurate trocar passage 80% of the time. Cadaveric anatomy lab for hands-on surgical training and review of the pelvic anatomy is associated with significant positive impact on the trainee comfort level with passage of transobturator trocars.
Poster #NM57
CURRENT TRENDS IN FEMALE PELVIC MEDICINE AND RECONSTRUCTION SURGERY FELLOWSHIPS. ARE FEMALES BECOMING MORE PROMINENT WHILE UROLOGISTS ARE BECOMING LESS?
Jacquelyn Gonka-Griffo, Teresa L. Danforth
Jacobs School of Medicine and Department of Urology
Presented By: Jacquelyn Gonka-Griffo, MD

Introduction: To assess characteristics of physicians who have completed a Female Pelvic Medicine and Reconstruction Surgery (FPMRS) Fellowship from 1996 to 2015. We compared those who trained from 1996-2005 (group 1) to those from 2006-2015 (group 2) to assess for any trends overtime.

Methods: We used the “past fellows” page on the Society of Urodynamics, Female Pelvic Medicine and Urogenital Reconstruction website to obtain the names and dates of fellows for our specific time criteria. Fellows were then separated based on length of fellowship, ObGyn vs. urology residency and female vs. male.

Results: In group 1, 114 physicians completed a FPMRS fellowship, as compared to 226 in group 2. An overall increase in female fellows from 41% in group 1 to 60% in group 2 was noted. This trend was also seen when looking solely at urology fellows 37% vs. 54.5%. We also noted that a higher percentage of urology fellows were completing a 2-year fellowship as time progressed, 7% in group 1 vs. 27% in group 2. Strikingly we found a decline in the proportion of urology fellows over time from 78% in group 1 vs. 66% in group 2. The exact opposite was noted for ObGyn fellows, whose numbers increased over time 22% in group 1 vs. 32% in group 2.

Conclusion: There has been an increase in FPMRS fellows over the years. The percentage of female fellows, specifically in urology has greatly increased. It is also noted that as time progressed that more fellows are completing greater than one year of training. Furthermore, the percentage of urologists completing FPMRS fellowships over the years is declining, while the percentage of ObGyns is rising.
Poster #NM58
ANALYSIS OF ONLINE UROLOGIST RATINGS: DOES SUBSPECIALTY INFLUENCE MEAN RATING?
C William Pike, Jacqueline M. Zillioux, Devang Sharma, David Rapp
University of Virginia
Presented By: Jacqueline M. Zillioux, MD

Introduction: Americans are increasingly using online rating websites to obtain information about physicians and to provide feedback. We sought to perform an analysis of online ratings information to assess the relationship between overall urologist rating and urologist subspecialty, including focus on comparison of female urology and remaining subspecialties.

Methods: We conducted an analysis of urologic physician ratings on Healthgrades.com. We selected 20 states throughout four US geographical regions and collected ratings data for all urologists across three practice sizes within each state (large private practice group; large academic center; urology practices with fewer than 5 physicians). Using available online information, physicians were further categorized into one of the following subspecialty groups: female urology, infertility and men's sexual health, pediatrics, reconstruction, robotics/oncology, stones/endourology, and general. Ratings data was collected, which are provided on a scale of 1-5 (1="poor"; 5="excellent"). Statistical analysis was performed using Kruskal-Wallis analysis to assess for differences among subgroups.

Results: Data was analyzed on 872 urologists with a mean age of 53 (±10) years. Comparison of median ratings by physician and practice characteristics are detailed in Table 1. The median overall urologist rating was 4.0 (3.4, 4.7). Providers in an academic practice setting or robotics/oncology subspecialty had significantly higher mean ratings when compared to other practice settings or subspecialties (p<0.001). All other comparisons throughout specialty, practice type, region, age, and gender failed to demonstrate statistically significant differences.

Conclusion: In our study of online urologist ratings, female urology specialty was not associated with a statistically significant difference in overall mean ranking. Across other specialties and variables assessed, only academic practice setting and robotics/oncology subspecialty were associated with a higher mean overall rating. Further study is needed to assess whether this finding persists across other online rating websites.

Table 1: Classification of Physicians and Summary Statistics (n=872)

<table>
<thead>
<tr>
<th>Practice Size</th>
<th>N (%)</th>
<th>Median Rating (IQR)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Large</td>
<td>424 (49)</td>
<td>3.9 [3.4, 4.4]</td>
</tr>
<tr>
<td>Academic</td>
<td>282 (32)</td>
<td>4.4 [3.8, 5.0]</td>
</tr>
<tr>
<td>Small</td>
<td>166 (19)</td>
<td>3.8 [3.2, 4.3]</td>
</tr>
<tr>
<td>Specialty</td>
<td></td>
<td></td>
</tr>
<tr>
<td>General</td>
<td>426 (49)</td>
<td>3.9 [3.3, 4.4]</td>
</tr>
<tr>
<td>Robotics/Oncology</td>
<td>195 (22)</td>
<td>4.5 [3.8, 5.0]</td>
</tr>
<tr>
<td>Female</td>
<td>81 (9)</td>
<td>4.0 [3.3, 4.5]</td>
</tr>
<tr>
<td>Stones/endourology</td>
<td>65 (7)</td>
<td>4.3 [3.5, 5.0]</td>
</tr>
<tr>
<td>Infertility/Men's Sexual Health</td>
<td>48 (6)</td>
<td>3.8 [3.5, 4.5]</td>
</tr>
<tr>
<td>Pediatrics</td>
<td>45 (5)</td>
<td>4.1 [3.4, 5.0]</td>
</tr>
<tr>
<td>Reconstruction</td>
<td>12 (1)</td>
<td>4.0 [3.4, 4.8]</td>
</tr>
<tr>
<td>Region</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Midwest</td>
<td>289 (33)</td>
<td>4.2 [3.4, 4.8]</td>
</tr>
<tr>
<td>South</td>
<td>247 (28)</td>
<td>4.0 [3.4, 4.5]</td>
</tr>
<tr>
<td>Northeast</td>
<td>203 (23)</td>
<td>4.1 [3.5, 4.7]</td>
</tr>
<tr>
<td>West</td>
<td>133 (15)</td>
<td>4.0 [3.3, 4.4]</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>784 (90)</td>
<td>4.0 [3.4, 4.7]</td>
</tr>
<tr>
<td>Female</td>
<td>88 (10)</td>
<td>4.0 [3.4, 4.6]</td>
</tr>
</tbody>
</table>
Poster #NM59
ICS EDUCATIONAL MODULE: COUGH STRESS TEST IN THE EVALUATION OF FEMALE URINARY INCONTINENCE: INTRODUCING THE ICS-UNIFORM COUGH STRESS TEST
Michael Guralnick, Professor of Urology¹, Xavier Fritel², Tufan Tarcan, Professor of Urology³, Montserrat Espuna-Pons⁴, Peter Rosier⁵
¹Medical College of Wisconsin, ²Universite de Poitiers, ³Marmara University School of Medicine, ⁴University of Barcelona, ⁵UMC Utrecht
Presented By: Michael Guralnick, MD, FRCSC

Introduction: A cough stress test (CST) is recommended in the evaluation of the uncomplicated female patient with the complaint of stress urinary incontinence (SUI) to identify the sign of SUI, and is often used as an outcome measure following SUI treatment. However, there has been no standardization of the performance or reporting of CST. A working group of the International Continence Society (ICS) has developed an educational module, comprising a Powerpoint™ presentation and evidence base manuscript, to instruct on the performance, interpretation, and reporting of the CST in a standardized manner: the ICS-Uniform Cough Stress Test (ICS-UCST).

Methods: The working group performed a PUBMED literature search of articles (observational/experimental and reviews) published prior to 2017 that mentioned a CST. The evidence base examined various variables in performing a CST as well as sensitivity/specificity and positive/negative predictive values of CST.

Results: The variables involved in performing/interpreting an ICS-UCST include: patient positioning, degree of bladder filling, number, and forcefulness of coughs, and method of SUI detection. For the ICS-UCST it is recommended that the patient be in a supine/lithotomy position with 200-400 mL of fluid in the bladder. She coughs forcefully 1-4 times and the examiner directly visualizes the urethral meatus for the presence of leakage. Leakage of fluid from the urethral meatus coincident with/simultaneous to the cough(s) is considered a positive test.

Conclusion: This module provides instructions to educate a uniform CST (the ICS-UCST), with the aim of improving the clinical practice of cough stress testing in female patients with urinary incontinence.

Poster #NM60 - WITHDRAWN
Poster #NM61

ROBOTIC ASSISTED LAPAROSCOPIC APICAL SUSPENSION WITH SPIRAL (RALAS-S) TECHNIQUE: DESCRIPTION OF NO MESH SURGERY FOR THE CORRECTION OF APICAL PROLAPSES

Hugo Davila, MD1,2, Stephanie N. Williams, MS3, Karisa Brown3, Prajwal Dara3, Lindsey Bruce, MD4, Lindsey Goodman, MD3, Taryn Gallo, MD4

1Florida Healthcare Specialists, Research Institute and Pelvic Reconstructive Surgery, 2Florida State University, College of Medicine, Vero Beach, FL, 3Florida State University College of Medicine, Tallahassee, FL, 4Sebastian River Medical Center, Vero Beach, FL

Presented By: Stephanie N. Williams, MS

Introduction: In 2008, the large number of reported adverse events with transvaginal placement of mesh to correct pelvic organ prolapse (POP) prompted the FDA to issue a public health notification outlining the potentially serious consequences of such placement. The objective of this video was to describe our no mesh surgery and steps of robotic-assisted laparoscopic apical suspension with spiral (RALAS-s) technique in the treatment of patients with symptomatic apical vaginal prolapse.

Methods: A 70-year-old Caucasian woman, gravida 3, para 2 had symptomatic POP apical/anterior stage III. The uterus was small with a normal appearance of the adnexa bilaterally. She failed pessaries and is sexually active. Her symptoms were evaluated with the pelvic floor distress inventory (PFDI-20), 54%, 9%, and 25%. During surgery we used 1) 3-0, V-Loc™ (Covidien) and we reinforced these absorbable sutures with 2, 2-0, GORE-TEX® Suture (Gore Medical). The Si da Vinci Surgical System was used with 4 arms and a 5-trocar configuration docked on the left side of the patient.

Results: On the right/left uterosacral ligament (USL) we used V-Loc and Gore-Tex and these provided the initial 2 points suspension. We like to attach the Left to the right USL. Then we developed the space between the bladder and vagina and reinforced the pubocervical fascia with V-loc suture plications. The following 2 anterior apical support sutures are taken from the vagina to the transversalis fascia on the anterior abdominal wall. The tension of these anterior sutures was maintained with Hem-o-lock (TeleFlex) and LAPRA-TY (Ethicon). Now with the spiral technique, we secure the suture thru the posterior and anterior abdominal muscle fascia using a Carter-Thomason laparoscopic port closure system. This may provide a better long-term support for the anterior apical compartment.

Conclusion: In our opinion, RALAS-4 may represent an alternative to robotic or laparoscopic sacrohysteropexy. This new approach simulates the natural 4 points support given by USL and cardinal ligaments, with the additional benefit of no mesh and no dissection on the sacrum promontory and maintaining all the benefits of minimally invasive surgery. With this technique we are chasing the pelvic floor trifecta: no mesh, no complications, and good long-term anatomic support.
Poster #NM62

RECENT PRESENCE OF FEMALE AUTHORSHIP WITHIN THE UROLOGIC LITERATURE

Nickhil Patel, Nicole E. Tuong, Jacqueline M. Zillioux, Tracey Krupski, David Rapp
University of Virginia School of Medicine
Presented By: Nicole E. Tuong, MD

Introduction: While there has traditionally been an overrepresentation of men within the field of urology, there has been a significant increase in women entering urologic training and the workforce over the past two decades. To further evaluate female representation in academic urology, we assessed gender and authorship in recent urologic literature.

Methods: We examined all articles published in 2017 from 5 urologic journals: The Journal of Urology (JU), Journal of Endourology (JE), Neurourology and Urodynamics (NU), Urologic Oncology (UO), and Urology (UR). Gender was recorded for first, supplemental, and last authors. If any supplemental authors were women, supplemental authorship was recorded female. Articles were categorized by subspecialty as follows: female/voiding dysfunction/prolapse/incontinence (FVPI), stones, infertility, oncology, pediatrics, reconstruction, or general. Chi-square and Kruskal testing were used for analysis to assess for differences in female representation when comparing journals or article subspecialty category.

Results: Across 1,375 articles analyzed, women accounted for 25.4%, 63.1%, and 15.8% of first, supplemental, and last authors, respectively. Female first authorship was highest in FVPI (43.5%) compared to other subspecialties (p<0.05, except pediatrics), with similar findings seen across supplemental and last authorship (Table 1). Similarly, female first authorship was highest in NU (46.2%) compared to other journals (p<0.001). Female authorship was lowest in stone articles and JE articles. There was no statistically significant difference in the number of times an article was cited based on gender for any authorship.

Conclusion: In general, women comprise a significant proportion of primary, supplemental, and last authorship across urology journals. Female authors had the highest representation in articles about FVPI and in NU, with the lowest representation seen in articles about stones and in JE. Gender of the author did not impact how often an article was cited in the literature.
Poster #NM63
EFFECT OF ONE-DAY COURSE IN FEMALE PELVIC MEDICINE AND RECONSTRUCTIVE SURGERY ON CONFIDENCE AND KNOWLEDGE OF STRESS INCONTINENCE AND PELVIC ORGAN PROLAPSE IN UROLOGY RESIDENTS
Dena Moskowitz¹, Lynn Stothers², Alvaro Lucioni³, Kamran Sajadi⁴, Jane Miller⁵, Suzette Sutherland⁶, Una Lee³
¹University of California, Irvine, ²University of British Columbia, ³Virginia Mason Medical Center, ⁴Oregon Health and Sciences University, ⁵University of Washington
Presented By: Dena Moskowitz, MD

Introduction: Detailed knowledge of female pelvic and genital anatomy and the techniques of surgical reconstruction are critical for all graduating urology residents. Obtaining this knowledge and training can be challenging given the demands on trainees’ time and variable access to Female Pelvic Medicine and Reconstructive Surgery (FPMRS)-trained faculty. We report on the effect of providing a one-day FPMRS training course to Pacific Northwest urology residents on self-reported knowledge and confidence regarding stress urinary incontinence (SUI) and pelvic organ prolapse (POP).

Methods: A one-day didactic and hands-on course was conducted in April 2018, with an unrestricted educational grant from Boston Scientific. Didactic lectures provided education on the epidemiology, anatomy, evaluation, treatment, and surgical principles of female SUI and POP. The hands-on portion provided a review of pelvic anatomy using cadaver models as well as practice of surgical techniques for SUI and POP procedures. Six FPMRS urology faculty from 4 institutions provided instruction. Pre- and post-course assessments were completed, assessing the trainees’ confidence and knowledge with SUI and POP based on a 5-point Likert scale. Open-ended questions assessed trainees’ view on what they hoped to gain from the course as well as what they found the most useful to guide future training.

Results: 15 urology residents completed the course, representing 5 institutions and all years of urology training from across the Pacific Northwest. There was an increase in self-reported confidence and knowledge in various domains of SUI and POP after attending the course (see Figure 1). The majority of residents felt they would benefit from more exposure to FPMRS in residency training.

Conclusion: Overall, this one-day FPMRS course increased urology residents’ self-reported confidence and knowledge in various domains of SUI and POP. Urology residencies can address the need for increased exposure to SUI and POP training by providing focused, hands-on surgical simulation and collaborative, faculty-led didactics. Courses such as this can utilize didactics, surgical models, and cadaver labs in order to increase confidence and knowledge in SUI and POP, two pelvic floor disorders which are important as core competencies in urologic training.
**Poster #NM64**

**THE MANAGEMENT AND OUTCOMES OF URETHRAL COMPLICATIONS OF MID URETHRAL TAPES FOR STRESS URINARY INCONTINENCE**

Rachel Barratt, BMBS, BMedSci, MRCS, Bogdan Toia, Mahreen Pakzad, Rizwan Hamid, Jeremy Ockrim, Tamsin Greenwell

University College London Hospitals, UCLH@ Westmoreland Street, 16-18 Westmoreland Street, London W1G 9PH

Presented By: Rachel Barratt, BMBS, BMedSci, MRCS

**Introduction:** The commonest indications for repeat surgery following mid-urethral tapes (MUT) are persistent/recurrent stress urinary incontinence (SUI), intractable pain, vaginal extrusion, voiding dysfunction (VD) or intractable detrusor overactivity (DO). Urethral complications of MUT (extrusion, fistula or loss) are extremely rare and the functional outcomes of their treatment relatively unknown. We examined the causes, presentations, treatment and outcomes of urethral complications of MUT.

**Methods:** A retrospective analysis of a prospectively acquired database of patients having surgical management of urethral complications of MUT between 2008−2018 was performed. All patients were evaluated with urodynamics preoperatively and were reassessed with videourodynamics(VUDS) postoperatively if symptomatic. Patient demographics, operative history, type of surgery, functional outcomes and any re−interventions were documented.

**Results:** 35 patients of median age 54(33−82) years were identified, with the median time between tape insertion to removal of 5(1−15) years. Procedures performed to manage urethral complications, any simultaneous and subsequent interventions are shown in Table 1. Pre−operative urodynamics showed SUI in 18/35 (51%), DO wet in 4/35 (11%), and DO dry in 4/35 (11%). 26/35 (74%) had repeat VUDS assessment; 21/26 (81%) had recurrent/persistent SUI, 5/26 (19%) had recurrent/persistent mixed urinary incontinence (MUI) and 5 (19%) had DO dry. 20/34 (59%) went on to have further SUI surgery with cure or improvement in 15/20 (75%). 13 women had rectus fascial sling -9 are dry or improved. 5 had colposuspension -4 are dry or improved. 1 had Bulkmid injection and 1 had bladder artificial urinary sphincter – both are dry. Women who had persistent significant SUI had a minimum of 2 previous surgical procedures for SUI prior to their index MUT insertion. Both women who had simultaneous procedures for SUI at time of management of their tape complication also suffered persistent significant SUI.

**Conclusion:** Vaginal removal of mid urethral tape, urethral repair and modified Martius labial fat pad (MIFP) interposition results in resolution of pain and a useable urethra in 97%. SUI persists or recurs in 74%. 59% require further SUI surgery, which has a 75% success rate. It is important to counsel patients having surgery for tape related urethral complications accurately regarding functional outcomes and the need for further interventions.

**Table 1**

<table>
<thead>
<tr>
<th>Urethral Complication</th>
<th>Number</th>
<th>Management</th>
<th>Simultaneous SUI Surgery</th>
<th>Subsequent SUI Surgery</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urethral extrusion</td>
<td>26</td>
<td>Vaginal excision, repair of urethra, MFP 24</td>
<td>Fascial sling 11</td>
<td>Colposuspension 5</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Bulkamid 1</td>
</tr>
<tr>
<td>Urethral extrusion</td>
<td>2</td>
<td>Vaginal excision, repair of urethra, MFP 2</td>
<td>Fascial sling 1</td>
<td>Colposuspension 5</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Bulkamid 1</td>
</tr>
<tr>
<td>Urethral Loss</td>
<td>1</td>
<td>Total open excision, Simple cystotomy, excision of bladder neck</td>
<td>Fascial sling 1</td>
<td>Colposuspension 5</td>
</tr>
<tr>
<td>Urethral and bladder extrusion</td>
<td>1</td>
<td>Total open excision, Simple cystotomy</td>
<td>Fascial sling 1</td>
<td>Colposuspension 5</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Bulkamid 1</td>
</tr>
</tbody>
</table>

**Figure**

[Diagram showing surgical procedures and outcomes]

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SUFU 2019 Winter Meeting 263
Poster #NM65  
SACRAL NEUROMODULATION IN PARKINSON’S DISEASE PATIENTS WITH NEUROGENIC BLADDER  
Daniel Greenberg, BA, Ericka Sohlberg, MD, Chiyuan Zhang, MPH, Craig V. Comiter, MD, Ekene Enemchukwu, MD, MPH  
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Presented By: Daniel Greenberg, BA

Introduction: Parkinson’s Disease (PD) alters central inhibition of micturition which results in detrusor overactivity, negatively impacting patients’ functional independence and quality of life. Previous studies examining overactive bladder (OAB) medications on voiding frequency in PD have shown inconsistent results and high rates of adverse events. There is increasing interest in the use of sacral neuromodulation (SNM) in PD patients. This study investigates stage I success and long-term outcomes of SNM in PD patients with neurogenic OAB treated at our institution.

Methods: We retrospectively reviewed PD patients with neurogenic OAB who underwent stage I SNS at our institution between 2008-2018. Demographic information, urodynamic data, and baseline voiding function were analyzed. Efficacy and safety of treatment were determined by evaluating rates of progression to stage II SNS, explantation rate, and need for subsequent therapy. Clinical improvement was assessed using voiding diaries obtained at 1 month, and every 3 months after permanent placement until latest follow-up.

Results: 14 PD patients underwent stage I SNS, eight (57%) of whom experienced >50% symptomatic improvement and proceeded to permanent implantation. There was no significant difference in age, BMI, comorbidities, smoking history, pre-treatment OAB regimens, or PD severity between successful and non-successful stage I patients. Pre-treatment urodynamics revealed a trend showing lower maximum urethral closure pressures (37.8 ± 8.8 cm H2O vs 101.7 ± 31.3 cm H2O, p = 0.06) and lower maximum detrusor pressure at maximum flow rate (22.5 ± 6.2 cm H2O vs 50.4 ± 9.5 cm H2O, p = 0.07) among successful stage I patients compared to non-successful stage I patients. Patients that progressed to stage II experienced statistically significant improvements in both nocturia and urinary frequency, with decreased daily urinary frequency up to 15-18 months after permanent placement. No patients required explantation of their SNM device.

Conclusion: At our institution, PD patients have a lower rate of progression to stage II compared to the general population. However, successful stage I PD patients experience long-term improvement in OAB symptoms. This study also suggests that pre-treatment urodynamics may help clinicians predict successful PD candidates for SNS prior to the stage I trial period. Larger trials are needed to further investigate these trends.
Poster #NM66
TO STAGE OR NOT TO STAGE? - A COST MINIMIZATION ANALYSIS OF SACRAL NEUROMODULATION PLACEMENT STRATEGIES
Andrew Sun¹, Catherine Harris¹,², Craig V. Comiter¹, Christopher S. Elliott¹,²
¹Department of Urology, Stanford University, Stanford, CA, USA, ²Division of Urology, Santa Clara Valley Medical Center, Santa Clara, CA, USA
Presented By: Christopher S. Elliott, MD, PhD

Introduction: Sacral neuromodulation (SNM) is a standard therapy for refractory overactive bladder (OAB). Traditionally, SNM placement involves placement of an S3 lead with 1-3 weeks of testing before considering a permanent implant. Given the potential risk of bacterial contamination during testing and high success rates published by some experts, we compared the costs of traditional 2-stage against single-stage SNM placement for OAB.

Methods: We performed a cost minimization analysis using published data on 2-stage SNM success rates, SNM infection rates, and direct reimbursements from Medicare for 2017 (Figure 1). We compared the costs associated with a 2-stage versus single-stage approach. We performed sensitivity analyses of the primary variables to assess where threshold values occurred and used separate models for freestanding ambulatory surgery centers (ASC) and outpatient hospital departments (OHD).

Results: Based on published literature, our base case assumed a 69% SNM success rate, a 5% 2-stage approach infection rate, a 1.7% single-stage approach infection rate, and removal of 50% of non-working single-stage SNMs. In both ASC ($17,613 vs $18,194) and OHD ($19,832 vs $21,181) settings, single-stage SNM placement was less costly than 2-stage placement. The minimum SNM success rates to achieve savings with a single-stage approach occur at 65.4% and 61.3% for ASC and OHD, respectively.

Conclusion: Using Medicare reimbursement, single-stage SNM placement is likely to be less costly than 2-stage placement for most practitioners. The savings are tied to SNM success rates and reimbursement rates, with the success in centers of excellence (~90%) saving up to $5014 per case.

***2019 Clinical Science Prize Essay Award Recipient
Poster #NM67
REAL WORLD COMPLIANCE WITH PERCUTANEOUS TIBIAL NERVE STIMULATION MAINTENANCE THERAPY
Chris Du, BA1, William T. Berg, MD2, Zhenyue Huang, BA1, Alexandra Siegal, BA1, Steven Weissbart, MD2, Jason Kim, MD2
1Stony Brook School of Medicine, 2Stony Brook University, Department of Urology
Presented By: William T. Berg, MD

Introduction: Patients receiving percutaneous tibial nerve stimulation (PTNS) require routine maintenance sessions for sustained efficacy. There are currently no studies which characterize compliance with long-term PTNS maintenance. We sought to evaluate PTNS maintenance therapy dropout rates and identify factors associated with compliance.

Methods: Our IRB-approved PTNS database was queried for PTNS patients from January 2014 to August 2017. Demographic and visit data were collected. Patients were characterized on whether or not maintenance therapy was initiated. Maintenance therapy was patient driven and frequency of maintenance sessions was based on symptomology. Patients underwent therapy a maximum of once weekly and a minimum of once every 6 weeks. Dropout from maintenance was assessed at 3, 6, 9, and 12 months after the completion of 12 initial PTNS sessions. Patients who continued maintenance therapy 1 year after initial therapy were compared to those who did not. Multiple variables were tested for correlation with dropout.

Results: A total of 133 PTNS patients were identified. 96 patients completed initial PTNS therapy and 69 continued with maintenance. At 3, 6, 9, and 12 months, continuation rates were 72.4% (50/69), 53.6% (37/69), 43.5% (30/69), and 30.4% (21/69), respectively (Figure 1). The mean days until dropout was 187 days (SD=134). Demographic and clinical variables are listed in Table 1. Common reasons for maintenance dropout were perceived lack of efficacy (n=10), time commitment (n=5), insurance issues (n=4), and interest in other therapies (n=4). A multivariate logistic regression model showed that perceived symptom improvement (HR=43, p=0.034) and Medicare status (HR=96, p=0.027) were positively associated while employment (HR=0.123, p=0.045) was negatively associated with continuing maintenance therapy for greater than 1 year.

Conclusion: Overall, 30% of patients continued to receive PTNS maintenance therapy 1 year after initial therapy. Approximately 50% of patients stopped maintenance therapy after 7 months. Possible predictors of continued therapy were perceived symptomatic improvement, insurance and employment status. Lack of efficacy and time commitment were the most commonly cited reasons for dropout. Future studies are required to understand low compliance in PTNS maintenance therapy.
Poster #NM68

EFFECTS OF TISSUE IMPEDANCE ON NEURAL ACTIVATION USING “CONSTANT-CURRENT” VERSUS “CONSTANT-VOLTAGE” NEUROMODULATION – A BENCHTOP STUDY

Bradley C. Gill, MD, MS1,2, Kenneth Gustafson, PhD2,3
1Cleveland Clinic, 2Cleveland VA Medical Center, 3Case Western Reserve University
Presented By: Bradley C. Gill, MD, MS

Introduction: Sacral neuromodulation is an effective urologic treatment and to date has been delivered with regulated (i.e. constant) voltage systems. In such devices, tissue encapsulation around implanted electrodes increases impedance, leading to reduced stimulus delivery to target nerves and potentially reduced clinical efficacy. Regulated (i.e. constant) current stimulation, however, is less affected as impedance varies. This study utilized a benchtop model to illustrate how impedance changes differentially influence a stimulus generated by “constant-current” and “constant-voltage” systems.

Methods: A benchtop model of neural stimulation was created using resistors simulating changes in tissue impedance and a 1.2 ohm resistor to model a target nerve. Regulated current and regulated voltage stimulators were applied. Potential at the ‘target nerve’ was recorded as an estimate of the depolarization produced for neural activation. Initial stimulus current and voltage amplitudes were set on each respective source to produce the same amount of simulated depolarization with no simulated electrode encapsulation. The impedance of the system was then increased to simulate electrode encapsulation.

Results: Without simulated encapsulation, initial current and voltage stimulation resulted in equivalent stimulus delivery to the simulated nerve (Figure 1, Upper Left). Using a regulated (constant) voltage source, doubling the electrode impedance to simulate encapsulation resulted in a 54% decrease in stimulus delivery to the target nerve (Figure 1, Lower Right). Using a regulated (constant) current source, doubling electrode impedance to simulate encapsulation resulted in no change in stimulus delivered (Figure 1, Upper Right).

Conclusion: Neuromodulation systems using “constant-current” maintain the set stimulus output to target nerves, despite changes in electrode impedance. As electrode impedances change over time, such systems may provide more robust efficacy or require less reprogramming than “constant voltage” systems. The impact electrode encapsulation and impedance changes in sacral neuromodulation warrant future research.
**Poster #NM69**

**INTRAURETHRAL STIMULATION: A POSSIBLE WAY TO INCREASE INTRAURETHRAL PRESSURES AND PREVENT URGENCY INCONTINENCE EPISODES**

James A. Hokanson¹, Warren Grill¹, Cindy Amundsen²

¹Duke University, Biomedical Engineering, ²Duke University, Obstetrics and Gynecology

Presented By: James A. Hokanson, PhD

**Introduction:** The pathophysiology related to urgency urinary incontinence (UUI) is complex. Prior studies suggest that urethral relaxation may precede detrusor overactivity incontinence. We sought to determine whether intraurethral electrical stimulation, over a range of stimulation parameters, could increase urethral pressure and to determine if this approach could be used to prevent detrusor overactivity incontinence episodes during cystometry.

**Methods:** Women (non-neurogenic) who responded “often” or “always” to urgency leakage (#6 and #16b on the Lower Urinary Tract Symptom questionnaire) were enrolled. A customized 6Fr catheter (4 electrodes, 4 pressure sensors, Gaeltec®) and standard 6Fr filling catheter (Laborie®) were inserted into the urethra. The stimulation amplitude was varied from 0 to maximum tolerable (90mA max) at 10 Hz along the length of the urethra (+3,+1.8,+0.6 cm proximal from the maximum urethral pressure point (UPP) and -0.6 cm distal from the maximum UPP). At sites +1.8 and +0.6 cm, the stimulation amplitude was varied from 0 – 1.5x sensation threshold at different stimulation frequencies (1,10,20,30 Hz), and up to the maximum tolerable amplitude at 30 Hz. Urethral pressure was simultaneously measured to quantify stimulation evoked increases in urethral pressure. Subsequently the bladder was filled to capacity and provocative maneuvers performed. Cystometry was repeated 2-3x with intraurethral stimulation randomized to either the first or second fill.

**Results:** Eleven women with a median age of 70 (range 27-85) completed the study. Intraurethral stimulation evoked pressures >1 cmH2O were not observed at any combination of stimulation amplitude, frequency, and location. A considerable range of sensation thresholds and maximum tolerable stimulation amplitudes were observed between patients at each stimulation frequency/location combination. For example, at 10Hz the range of maximum tolerable amplitudes across patients was 37-90mA at +3cm, 9-62mA at +1.8cm, 4-40mA at +0.6cm and 6-23mA at -0.6cm (see Figure). Only 1 woman exhibited detrusor overactivity incontinence and intraurethral stimulation did not prevent urine loss.

**Conclusion:** Intraurethral stimulation failed to evoke meaningful increases in urethral pressure. Although some women were able to tolerate much larger stimulation amplitudes than others, these larger amplitudes were insufficient to increase urethral pressure.
Poster #NM70
SACRAL NEUROMODULATION: DETERMINING PREDICTORS OF SUCCESS
Tara Nikonow Morgan, MD1, Natalie Pace Shahait, BS2, Anand Mohapatra, MD1, Dianxu Ren, MD PhD3, Aisha Taylor, MD1, Christopher Chermansky, MD1
1Department of Urology, University of Pittsburgh School of Medicine, 2University of Pittsburgh School of Medicine, 3University of Pittsburgh School of Nursing
Presented By: Tara Nikonow Morgan, MD

Introduction: Refractory overactive bladder (OAB) has detrimental effects on quality of life, and patients often exhaust non-surgical treatment options with minimal improvement in their symptoms. Sacral neuromodulation (InterStim®) is a third line, FDA approved therapy for refractory OAB. We evaluated clinical and procedural characteristics of InterStim® that predict short-term and long-term efficacy.

Methods: A retrospective chart review was performed on patients who underwent a staged Interstim® procedure between January 1, 2007 and January 1, 2018. The clinical and procedural characteristics we evaluated included BMI, comorbidities, age, intraoperative motor responses, and operative time. Endpoints included completed Stage 2 Interstim® procedure, Interstim® lead revision, and patient reported clinical responses at various timepoints. Using SAS 9.4, we statistically determined the mean and standard deviation for continuous variables and the frequency and percentage for categorical variables. The Mann-Whitney U test was used to compare mean differences. The Chi-square test was used to compare the percentage differences between two groups.

Results: We performed a retrospective analysis of 142 female subjects with a mean age of 62.9 years (SD +/-14.2). Mean operative time for stage 1 was 73.6 minutes (SD +/- 20.7), and 75% had prior pelvic surgery. The mean BMI was 31 (SD +/- 7.62). A total of 91.4% of patients went onto Stage 2 Interstim®, and 82% of these patients reported success at their first postoperative appointment. Furthermore, 75% reported continued success at their 3-6 month follow-up. Yet, 24% required Interstim® lead revision for either lack of efficacy, pain, and/or infection. Intraoperative motor responses were analyzed, and patients were divided into either group 1 (anal bellows and great toe dorsiflexion in either 1, 2, or 3 electrodes) or group 2 (anal bellows and great toe dorsiflexion in all 4 electrodes). There was no statistically significant difference between these 2 groups in the rates of patients that went onto complete Stage 2 Interstim®, self-reported success, or required lead revision.

Conclusion: There is limited literature on what characteristics predict patient success or failure with Interstim® therapy. The total number of electrode responses during intraoperative testing did not impact either short or long-term Interstim® success.
Poster #NM71
LONG-TERM OUTCOMES OF SACRAL NEUROSTIMULATION: A SINGLE CENTER ANALYSIS
Jonathan Badin, MD1, Alejandro Abello, MD2, Anurag Das, MD1
1Beth Israel Deaconess Medical Center, 2Yale School of Medicine
Presented By: Jonathan Badin, MD

Introduction: Lower urinary tract dysfunction (LUTD) leading to retention or overactive bladder (OAB) can be present in up to 15% of the adult population. While many patients can be managed with behavioral therapy, pelvic rehabilitation and pharmacotherapy, some patients remain unimproved or cannot tolerate medication. Sacral neurostimulation (SNS), is considered a third-line option in various international guidelines. We present our long-term experience with sacral neuromodulation.

Methods: Electronic medical records of patients with LUTD who underwent stimulation trial of SNS were reviewed. Population baseline characteristics, urinary symptoms, urodynamic studies, and previous treatments were recorded. Trial characteristics, implantation rate, symptom assessment post-implantation, and complications were analyzed. Chi-squared test was used for categorical and paired T-test for continuous variables. P value

Results: 103 patients (83.5% female) with a median age of 66 years (IQR 50-76) with adequate follow-up were included. At baseline, 87.4% complained primarily of OAB while 12.6% had retention. Stimulation trials were either with an office-based percutaneous (49%) or staged test (51%) with a mean trial duration of 7.42 ± 1.91 and 9.13 ± 4.73 days respectively. After successful trial (≥50% symptom improvement), 88 (85.44%) devices were implanted and followed-up for a mean time of 48.66 ± 38.63 months. Of note, 31 patients had >5 years of follow-up. Assessment of signs and symptoms was done at baseline, 1 and 5 years after implantation (Table 1). Retention complaints significantly decreased at 1 and 5 years (p =

Conclusion: SNS shows sustained effectiveness over a 5-year period. Complications are mainly related to battery life, patients should be counseled about the possibility of device revisions or replacement during follow-up. With technological advances and rechargeable batteries, some of these device replacements may become unnecessary. However, 20-25% are explanted within 5 years for various reasons including poor effectiveness.

Poster #NM72 - WITHDRAWN
Poster #NM73
RACIAL/ETHNIC DIFFERENCES IN URODYNAMIC PARAMETERS IN PATIENTS WITH OVERACTIVE BLADDER
Stephanie Zuo, MD1, Elishia McKay, MD1, Nitya Abraham, MD2
1Albert Einstein College of Medicine/Montefiore Medical Center, Department of Obstetrics and Gynecology, Bronx NY,
2Albert Einstein College of Medicine/Montefiore Medical Center, Department of Urology, Bronx NY
Presented By: Stephanie Zuo, MD

Introduction: Overactive bladder (OAB) affects as many as 43% of women aged 40 years and older. The association between race and overactive bladder is not clear. The EpiLUTS survey showed that Blacks and Hispanics were more likely to have OAB than Whites. Other studies have found no association between race and OAB. Although OAB is a clinical diagnosis, urodynamic studies (UDS) can quantify severity of OAB. The objective of this study was to compare severity of OAB in females of different races/ethnicities using UDS parameters. We hypothesized that Hispanic and Blacks would have worse UDS measures.

Methods: We performed a 4-year retrospective chart review between Oct 2014 to June 2018 of females 18 years and older who endorsed OAB symptoms and underwent UDS at a predominantly minority race academic urban medical center. Women with neurologic disease, urinary retention, and predominantly stress urinary incontinence were excluded. Descriptive statistics were used to compare UDS parameters between racial/ethnic groups.

Results: 129 patient’s charts and urodynamic studies were reviewed. Mean age was 58.3 (SD 13.2). 24/129 (18.6%) of the women had diabetes. Most patients were Hispanic 75/129 (58.1%), followed by Blacks 27/129 (20.9%), Whites 14/129 (10.9%), and Other 13/129 (10.1%). 18 patients (14.0%) presented with urgency and/or frequency, 30 (23.2%) with urgency incontinence, and 81 (62.8%) with mixed urinary incontinence. 64/129 (49.6%) had detrusor overactivity (DO) on UDS, of whom 46/64 (71.9%) had associated leakage.

Black patients had a significantly lower maximum bladder capacity and volume at strong desire compared to the other groups (see Table). Presence of DO was more common, and maximum detrusor pressure of the first involuntary detrusor contraction (IDC) higher, while volume at first IDC lower in Black women compared to the other groups, although this was not statistically significant.

Conclusion: Our study suggests that Black women who present with lower urinary tract symptoms may have more severe OAB based on UDS parameters, including significantly lower maximum bladder capacity and volume at strong desire. Further studies are necessary to understand if these differences are due to genetic, behavioral, or socioeconomic factors.

| Table 1: Urodynamic parameters by Race/Ethnicity (n=129)1 |
|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Characteristics | Black n=27 | White n=14 | Hispanic n=35 | Other n=13 p Value |
| DO (n=64) | 19 (70.4%) | 6 (42.9%) | 34 (45.3%) | 5 (38.5%) | 0.107 |
| DO with leakage (n=44) | 15 (79.0%) | 4 (66.7%) | 23 (67.7%) | 4 (80%) | 0.798 |
| Maximum amplitude of first occurrence of DO (mmHg) | 51.2 (40.9) | 37 (19) | 36.6 (18.6) | 36 (29.5) | 0.668 |
| Volume of first occurrence of DO (ml) | 133.9 (92.6) | 237.4 (91.9) | 161.1 (101.3) | 250.9 (47.3) | 0.092 |
| First sensation (ml) | 51.3 (47.2) | 47.4 (50.9) | 76.8 (82.2) | 66.7 (56.9) | 0.234 |
| First desire (ml) | 114.9 (73.4) | 160.7 (67.6) | 157.0 (101.2) | 142.8 (76.0) | 0.264 |
| Strong desire (ml) | 179.5 (90.1) | 276.7 (114.6) | 244.8 (108.9) | 231 (99.4) | 0.029 |
| Max Capacity (ml) | 269.0 (110) | 340.5 (103.4) | 308.3 (108.6) | 320.5 (85.5) | 0.005 |

1 Data are presented as median (IQR) unless otherwise noted. DO: detrusor overactivity
Poster #NM74
SPACED EDUCATION: DOES IT IMPROVE RESIDENT KNOWLEDGE RETENTION IN THE DOMAINS OF URODYNAMIC, FPMRS AND NEUROUROLOGY?
Deborah Sperling Hess, MD, MS1, Rena Malik2, Dayron Rodriguez1, Maude Carmel1
1University of Texas Southwestern, 2University of Maryland
Presented By: Deborah Sperling Hess, MD, MS

Introduction: Spaced education has shown that long-term recall is improved when topics are learned and repeated over a period of time rather than digested in a bolus fashion. The use of spaced education in Urology has been examined among limited male-related domains(1). We sought to examine the efficacy of spaced education in the domains of urodynamics (UDS), FPMRS and neurourology.

Methods: Residents (n=16) in their post-graduate years 2 through 5 at a single program were evaluated with a pre-test in July 2017 that included 4 vignettes on prolapse, mixed urinary incontinence, stress urinary incontinence and neurourology. Each vignette included multiple-choice questions and a free text interpretation of a UDS tracing. The test also asked residents to rate the confidence on a Likert scale. Over the course of the following year, they received monthly online tests that further tested and cycled these 4 topics. The same test was re-administered in June 2018. Changes in scores for multiple choice and free-text UDS interpretations were evaluated as well as the confidence associated with answering the questions.

Results: Residents improved their overall scores as well as UDS-specific scores between the pre and post-test. Mean score increased among all residents by 27% (p<0.001), with UDS-specific score increasing by 26% (p<0.001). When compared between junior (PGY2-3) and senior (PGY4-5) residents, there was a significant difference in improvement: junior score 36% improvement, senior score 18% (p=0.007). Scores within each domain also improved, with UDS, POP and NGB-specific scores improving the most (29%, 31%, 24%). Each of these scores improved more among the junior residents (p=0.007). Each residents’ overall confidence in FPMRS urology-related knowledge improved, as well their confidence in their ability to interpret tracings and develop a plan based on the tracings.

Conclusion: Spaced education improved resident knowledge in FPMRS and neurourology and is a helpful mechanism for teaching urodynamics. This pilot study has shown that this educational method is a valuable tool for teaching residents of all levels and is especially useful among the junior-resident level. Further research is needed among a larger cohort to better tailor resident education based on urologic experience.

Poster #NM75
ARE PREOPERATIVE URODYNAMICS IMPORTANT FOR THE SUCCESS OF RENAL TRANSPLANT GRAFTS?
Sida Niu, Connor Chestnut, Priya Padmanabhan
University of Kansas Medical Center, Department of Urology
Presented By: Sida Niu, MD

Introduction: Renal transplant is the most desired and cost-effective therapy for patients with end stage renal disease. While a lower urinary tract cause of end-stage renal disease is not an absolute contraindication to renal transplantation, appropriate vesical storage and drainage is imperative for survival and function of the graft. Thus, careful identification of certain transplant patients for preoperative UDS may prevent post-transplant urological complications and possible graft failure.

Methods: We retrospectively reviewed all patients who underwent a renal transplantation with subsequent UDS testing at our institution between January 2000 to October 2016. None of the patients had preoperative UDS. Twenty-eight patients were identified and 11 were excluded due to missing data. Information collected included demographics, past medical and surgical history, transplant indication, dialysis duration, pre-transplant urine output, reason for urological evaluation, and UDS results. Characteristics of these patients were analyzed to assess for trends that may predict post-transplant urological issues and graft compromise based on pre-transplant risk factors.

Results: The most common comorbidities in the cohort were hypertension (88%), diabetes mellitus (53%), coronary artery disease (41%). The most common indications for transplantation were diabetes mellitus (47%) followed by hypertension (41%). Six of the 17 patients (35%) had post-transplant urological issues resulting in potential compromise of their grafts. In order, the most common reasons for post-transplant urological evaluation in these six patients were urinary retention/incomplete emptying, recurrent urinary tract infections, elevated creatinine, and transplant hydronephrosis. Urodynamic findings in these patients revealed incomplete emptying or retention (67%), detrusor overactivity (67%), hypotonic bladder (33%), atonic bladder (33%), poor compliance (33%), and small capacity (33%).

Conclusion: Our findings suggest urological evaluation with urodynamic testing is underutilized in the diagnosis, treatment and optimization of pre-existing urological conditions in order to improve graft success and avoid unforeseen problems in the pre-transplant setting. Currently, there is no consensus in existing guidelines regarding which patients should have formal urological evaluation with urodynamics before undergoing transplantation. Additional efforts in this area is necessary to improve the overall success of renal transplantations.
Poster #NM76
COMPARATIVE-FILL URODYNAMICS IDENTIFIES ACUTE DYNAMIC ELASTICITY IN INDIVIDUALS WITH HEALTHY BLADDERS BUT NOT IN THOSE WITH DETRUSOR OVERACTIVITY
Zachary Cullingsworth, BS¹, Adam Klausner, MD², Anna S. Nagle, PhD¹, Ashley Carroll, MD³, John Speich, PhD¹
¹Virginia Commonwealth University, Department of Mechanical and Nuclear Engineering, Richmond, VA, ²Virginia Commonwealth University, Department of Surgery/Division of Urology, Richmond, VA, ³Virginia Commonwealth University, Department of Obstetrics and Gynecology, Richmond, VA
Presented By: Zachary Cullingsworth, BS

Introduction: Dynamic elasticity was previously identified in individuals with overactive bladder (OAB) using comparative-fill urodynamics (UD). Dynamic elasticity is the clinical correlate of adjustable preload tension, a mechanism for acutely regulating detrusor wall tension. Dynamic elasticity is lost through filling and passive emptying and regained via active voiding. This study tested the hypothesis that individuals with detrusor overactivity (DO) exhibit less observable dynamic elasticity than individuals without DO due to establishment of dynamic elasticity by detrusor activity.

Methods: Individuals with and without urgency based on ICIq-OAB surveys were prospectively enrolled in a repeat fill-and-empty UD study. An initial fill identified any DO. Three fills followed by passive emptying or active voiding were compared to quantify dynamic elasticity.

Results: Data from 20 participants were analyzed. Dynamic elasticity, defined as a loss in elasticity (decrease in intravesical pressure, Pves) during a fill subsequent to passive emptying and a gain in elasticity (pves return toward baseline) during a fill following active voiding, was identified in 9/10 participants without DO. Contrastingly, 3/10 participants with DO exhibited dynamic elasticity. The presence of DO was significantly associated with the absence of dynamic elasticity (Fischer’s exact test, p<0.05). All healthy participants without DO exhibited dynamic elasticity. A significant association was identified between UD capacities that were smaller than maximum 3-day bladder diary volumes and the presence of DO (Fisher’s exact test, p<0.05).

Conclusion: DO may contribute to OAB by altering acute regulation of bladder elasticity. Quantifying dynamic elasticity could lead to sub-typing and targeted treatments for individuals with OAB.
Poster #NM77

URODYNAMICS ON YOUTUBE: WHAT ARE PATIENTS WATCHING?

Julia Han¹, Hayley Oberhofer², Ashley Gordon², Andrew Rabley¹, Shahab Bozorgmehri¹, Louis Moy¹

¹University of Florida Department of Urology, ²University of Florida College of Medicine

Presented By: Julia Han, MD

Introduction: There is limited literature about the quality of urologic content on social media. Our objective was to characterize the quality and content of the most frequently watched YouTube videos related to urodynamics.

Methods: YouTube was searched using the term “urodynamics.” Videos were organized in descending number of views and those with less than 1,000 views were excluded. We developed a questionnaire to assess each video’s target audience, purpose, and whether it included information for pediatrics or adults. We assessed if the videos included information on why and how urodynamics are done. Data from each video was extracted by three viewers and the inter-rater reliability (IRR) was calculated using the kappa statistic. Descriptive statistics were also obtained.

Results: Three reviewers rated 42 videos, ranging from 1 to 4,999 seconds. Most viewed video had 1,630,787 views. Mean IRR was 0.76, ranging 0.40 to 0.95. Target audience was 53.9% physicians, 41.0% patients, and 5.1% unclear. Purpose of the videos was 38.5% patient information, 28.2% advertising or publicity, 23.1% physician continuing education, and 10.3% unclear. Of all the videos 38.5% were made by a private physician’s practice, 28.2% by an academic institution, 25.6% as a commercial or advertisement for a company, 5.1% by a governmental institution, and 2.6% by a patient. 71.8% of videos included the indication for urodynamics. 51.3% visually demonstrated the procedure and only 15.4% of videos gave a time estimate for the procedure. Only 38.5% of videos indicated risks and safety associated with urodynamics. Of the videos, 76.9% indicated that a catheter would be in the rectum and in the bladder, 66.7% that the bladder would be filled, 72.8% that the patient would be asked to void, 61.5% that sensation of the bladder would be assessed, and 46.2% indicated that a patient would be asked to cough or bear down to detect urinary incontinence.

Conclusion: Many patients look to the internet and specifically YouTube to gather information about urodynamics. The most frequently viewed YouTube videos are heterogeneous in terms of content, purpose, and quality. Physicians should be cognizant of the variability and content in such videos related to urodynamics.
Poster #NM78
EFFECT OF URODYNAMIC URETHRAL CATHETER ON UROFLOWMETRY PARAMETERS: A PROSPECTIVE STUDY
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1Urology Unit, Department of Surgery, Amiri Hospital, 2Kuwait Urology Board, Kuwait Institute for Medical Specialization
Presented By: Tariq F. Al-Shaiji, MD

Introduction: Urodynamic studies (UDS) are an integral part of assessing voiding symptoms in both genders. Its settings and components are points of debate for possible effects on results that sometimes vary from preliminary diagnoses, particularly the urethral or vesical catheters used filling and voiding cystometry and their effect on uroflowmetry (UFM) parameters, which we aim to investigate in our study.

Methods: We prospectively enrolled 150 patients undergoing UDS for established voiding symptoms from January 2016 to March 2018. Exclusion criteria were pre-UDS voided volume < 150mls and/or inability to void during UDS with catheter in place. Biometric data and clinical history were collected. Free UFM preceded the UDS. Double-lumen 8F air-charged urethral catheter was inserted to measure intra-vesical pressure and for filling and voiding cystometry. A single consultant urologist analyzed the UFM and UDS strips. Parameters of free UFM were compared with that of voiding cystometry using t-test.

Results: The study included 105 eligible patients (mean age = 55 years), 54% of which were females. Urge urinary incontinence was most frequent form of leak (n=28) and 69% of strips showed detrusor overactivity. Statistically significant better results were observed between pre-UDS UFM and pressure-flow UFM for mean values for maximum flow (Qmax) (+4.33ml/s, p<0.001), average flow (+1.95ml/s, p<0.05), voiding time (-16.6s, p<0.001), and time to Qmax (-6.6s, p=0.001), but not post-void residual volume (12.2mls, p=0.16) and percentage PVR of cystometric capacity (0.55%, p=0.7). Time to Qmax becomes insignificant when compared among males only (p=0.2), while all PVR assessments become significant among females alone (p<0.05). Analysis was repeated including those who voided 120mls or more (n=120) on pre-UDS UFM and yielded results of similar significance.

Conclusion: The insertion of a urethral catheter has a significant effect on UFM parameters in patients. Pre-UDS UFM studies are important to identify such effects that may influence the final diagnosis.
Poster #NM79
THE SYMPTOMATIC DIFFERENCES BETWEEN MEN AND WOMEN WITH DETRUSOR UNDERACTIVITY
Jeremy Ockrim, Mariele Trimboli, Richard Axell, Mahreen Pakzad, Rizwan Hamid, Tamsin Greenwell
University College London Hospitals, UCLH
Presented By: Jeremy Ockrim, MD BSc (Hons) FRCS

Introduction: Detrusor underactivity (DU) occurs in up to 48% of the population but its symptoms remain ill defined. We have assessed the symptoms of all men and women having urodynamic diagnosis of DU following assessment at our institution for refractory lower urinary tract symptoms in a 20 month period.

Methods: We reviewed the urodynamic diagnosis and presenting symptoms of all 1256 (510 male) patients attending for videourodynamics (VUDS) and simple urodynamics (UDS) between 31/5/16 and 3/1/18. Detrusor underactivity was defined as per 2002 ICS definition. Details on DU patient demographics and symptoms were determined and are detailed in Table 1.

Statistical analysis was by T Test and Chi Square analysis and significance determined as P < 0.05.

Results: 171 (59 male) patients were excluded for trace or test quality issues or underlying neuropathic cause of DU. Of the remainder 370 (34%) had DU; 37% (167) of men and 32% (203) of women.

• P < 0.05

Conclusion: Women with DU are significantly younger than men with DU and are significantly more likely to present with UUI and UTI. Men with DU are significantly more likely to present with inability to void.

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<th>Male None Neuropathic</th>
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Poster #NM80

URINE CONDUCTIVITY FOR USE IN TELEMETRIC AMBULATORY URODYNAMIC MONITORING

Benjamin Abelson¹, Ian McAdams², Sam Butler¹, Steve Majorus², Margot Damaser¹
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Presented By: Benjamin Abelson, MD

Introduction: Urodynamic studies (UDS) provide a crucial tool for urologists to evaluate the health of the bladder and to diagnose a variety of disease states and symptoms. Efforts to develop ambulatory, catheter-free systems (telemetric ambulatory urodynamic monitoring) to improve patient experience, expand diagnostic capabilities, and integrate with neuroprostheses have been hampered by several pitfalls, including failure to incorporate volume alongside pressure sensing. We have demonstrated previously that utilizing the relationship between the volume of a fluid and conductivity can be applied to detecting bladder volume in vitro. However, little is known about normal values and ranges of conductivity in human urine as well as the impact of urologic and kidney diseases on urine conductivity.

Methods: We recruited forty healthy volunteers and 100 urology and nephrology patients to provide single, random urine samples. Five volunteers provided samples from each void over a 24-hour period. Samples were tested for conductivity then sent to our institution laboratory for urinalysis and urine electrolyte testing (sodium, chloride, potassium and calcium).

Results: Mean ages of patients and volunteers were 56.4 yrs and 39.9 years respectively, with approximately half of both groups being male. The 100 patients represented multiple disease categories including incontinence (25), renal disease (26), and stones/infection/pain (21). Mean urine conductivity for patients and volunteers was 26.3±12.8 mS and 38.0±14.4 mS respectively (p<0.001). Urine conductivity in both groups correlated strongly with urine electrolyte concentration with r-squared values of 0.90, 0.83, 0.58, and 0.11 for chloride, sodium, potassium, and calcium, respectively (all p<0.05). Urine conductivity did not differ significantly between various urologic and kidney disease. Furthermore, individual’s urine conductivity changed significantly throughout a 24-hour period, primarily based on fluid intake.

Conclusion: This study serves to establish normal values and ranges of urine conductivity and correlates changes in urine conductivity with urine electrolyte concentration. We demonstrate that this correlation is consistent both in healthy volunteers as well as the target population that serves to benefit from in-development ambulatory urodynamics devices. This is a crucial step in development of ambulatory urodynamic monitoring systems that use fluid conductance to measure volume.
Poster #NM81
DOES THE “LAW OF URINATION” APPLY TO FEMALE HUMANS?
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Presented By: Angie Tsuei

Introduction: Urine flowrates have been well studied in men and women. It is known that urine flow rates increase as voided volume increases. Voiding time has been less studied. In 2014, engineers from Georgia Institute of Technology used high-speed videography and flowrate measurements to study 16 mammals at the Atlanta Zoo. The authors found that all mammals above 3kg in weight demonstrated similar voiding times across species at 21 +/- 13 seconds independent of the voided volume, which ranged from 5 mL in cats and 18L for elephants. The purpose of this study was to investigate if women follow the “Law of Urination”.

Methods: Women were recruited for this IRB-approved study from the community, medical center employees, and our tertiary care Urogynecology clinic. Inclusion criteria were English speaking women between the ages of 18-65. Exclusion criteria included current antibiotic use, obstructed sleep apnea, untreated renal, cardiac or liver disease, diuretic use, anticholinergic use and beta-adrenergic agonist use. Each participant completed a demographics form and a validated six-question survey about urinary symptoms (Urinary Distress Inventory, UDI-6). Participants were given a “hat” to place in the toilet to measure urine volume and specific instructions about how to record urination time using their smartphone. Participants were instructed to record the time for 3 urinations along with rating the urge sensation (1-10) prior to urination. They were also instructed that one of the voids should be a “first morning void” when their bladder was full. This was a pilot study and we decided to enroll 25 asymptomatic and 25 symptomatic women. Data were analyzed using a EXCEL (Microsoft Corporation, Version 14.7.3)

Results: A total of 50 consenting women with and without urinary symptoms participated in this study. The average age was 47.4 (range 24-65) years. Average weight was 154.4 (range 105-280) pounds. Average voided volume was 404.2 (range 100-1100) mL. Voiding time was 20.4 +/- 11.9 seconds.

Conclusion: Female humans in this study have a voiding time of 20.4 +/- 11.9 seconds which is remarkably similar to the voiding times described previously in mammals greater than 3 kg. It appears that female humans follow the “Law of Urination”!

Funding: N/A
Poster #NM82
INFLUENCE OF NARCOTIC USE ON POSTOPERATIVE ADMISSION FOLLOWING ARTIFICIAL URINARY SPHINCTER
Sophia Delpe Goodridge, Benjamin Dropkin, Leah Chisholm, Jeremiah Dallmer, Douglas Milam, Faculty, Hartigan Siobhan, Dmochowski Roger, Faculty, Kaufman Melissa, Faculty VUMC
Presented By: Sophia Delpe Goodridge, MD

Introduction: As the healthcare system is progressively focusing on high-quality, low-cost care many of our current 23-hour observation or overnight stay surgeries will be assessed for feasibility of conversion to outpatient surgery. Post-operative admission following placement of an artificial urinary sphincter (AUS) is variable throughout the US and may be influenced by perceived need for IV narcotic pain medication requirements.

Methods: In this IRB approved, retrospective review, patients undergoing AUS insertion, between June 2013 and September 2017 were identified by CPT code 53445. Medical records were reviewed for patient demographics, medical and surgical history, narcotic use and early postoperative complications. Fishers exact test and T-tests were used to assess association between narcotic use and early complications.

Results: The average age of patients included was 69.19 ± 12.59. Of the 160 patients, only 1 patient had a complication within 24 hours of surgery (0.6%). There was no positive association between pre-operative narcotic use and 24-hour complications (p= 0.626). Similarly, no association was found between pre-operative narcotic use and 48-hour readmission for complications (p = 0.144). The average post-operative morphine equivalent (ME) use in patients with pre-existing narcotic use was 46 ± 32.13 compared to 28.90 ± 20.10 in narcotic naïve patients (p = 0.0008). Eighty-one patients (50.62%) utilized IV narcotics in the peri-operative period following discharge from the post-anesthesia care unit.

Conclusion: While
Poster #NM83
IS AN OVERNIGHT STAY NECESSARY AFTER ARTIFICIAL URINARY SPHINCTER INSERTION? FEASIBILITY OF OUTPATIENT AUS INSERTION
Benjamin M. Dropkin, MD1, Jeremiah Dallmer, BS2, Leah Chisholm, BA2, Sophia Delpa, MD1, Siobhan Hartigan, MD1, Douglas Milam, MD1, Melissa Kaufman, MD, PhD1
1Vanderbilt University Medical Center, 2Vanderbilt University School of Medicine
Presented By: Benjamin M. Dropkin, MD

Introduction: Artificial Urinary Sphincter (AUS) insertion is the most effective treatment for moderate to severe incontinence in men. With over 3500 devices placed annually in the United States, a significant cost burden is associated with inpatient care. We sought to determine whether inpatient management after AUS insertion, our current local standard of care, is necessary with regards to pain control and immediate postoperative complications.

Methods: In this IRB approved, retrospective review, AUS insertions between June 2013 and September 2017 were identified by CPT code 53445. Medical records were reviewed for patient demographics, medical and surgical history, length of stay, postoperative narcotic use, and immediate postoperative complications.

Results: We identified 163 men who met inclusion criteria. The mean age and BMI were 69.3 + 9.4 years and 29.6 + 9.7 kg/m2, respectively. Twenty-three (14 %) patients were using chronic narcotic pain medication preoperatively, 33 (20 %) were on anticoagulation other than ASA-81 mg, and 51 (31 %) had diabetes (mean hemoglobin A1c 7.0 ± 1.5 %). Patient history included radical prostatectomy (RP) alone in 95 (58 %), radiation (XRT) alone in 15 (9 %), and RP and XRT in 40 (25 %). Twenty (12%) patients had a history of TURP or HoLEP, 14 of whom also had a history of RP and/or XRT. Sixteen (10 %) patients had a history of prior AUS. All patients were discharged on the first postoperative day (POD 1) except for one patient discharged on POD 2. Two (1.2 %) patients experienced postoperative complications prior to discharge. One patient demonstrated altered mental status that resolved with conservative management (Clavien grade I) and the second displayed postoperative tachycardia requiring medical therapy (Clavien grade II). The 154 (94%) patients who required post-PACU narcotic pain medication used a median of 31.1 (IQR 15-45) morphine milligram equivalents (mme). The 82 (50%) patients who required post-PACU IV narcotic pain medication used a median of 4 (IQR 2-6) mme.

Conclusion: The vast majority of patients underwent uncomplicated AUS insertions with minimal post-PACU IV narcotic requirements. Virtually all were discharged on POD 1. Transitioning to outpatient AUS insertion appears reasonable and may have a meaningful impact on patient experience and total costs.
A NEW FRONTIER IN NEUROMODULATION WITH A MINIATURE WIRELESS STIMULATOR FOR SMALL PERIPHERAL NERVES

Aswini Kanneganti, PhD1,2, Geetanjali Bendale, MS1,2, Eileen Shimizu, MS1, Ashlesha Deshmukh, MS1, Ana Hernandez-Reynoso, MS1,2, Philippe Zimmern, MD3,2, Dan Freeman, PhD4, Stuart F. Cogan, PhD1, Mario Romero-Ortega, PhD1,2,5 1Department of Bioengineering, University of Texas at Dallas, Richardson, TX, USA, 2Department of Surgery, UT Southwestern, Dallas, TX, USA, 3Department of Urology, UT Southwestern, Dallas, TX, USA, 4Draper Laboratories, Cambridge, MA, USA, 5Department of Health Sciences, UT Southwestern, Dallas, TX, USA

Presented By: Aswini Kanneganti, PhD

Introduction: Sacral neural stimulation (SNS) has been shown to be effective in managing several urinary tract dysfunctions, but are fraught with complications. To overcome these limitations we developed a miniature wireless electrode designed for reliable and selective stimulation of peripheral nerves.

Methods: The wireless NeuroClip electrode (wNClip) is a 3 X 2 mm device with a coil to receive inductive power and a capacitor to tune the stimulation frequency of a bipolar platinum electrode. The device is encapsulated in medical-grade epoxy and has an L-shaped slit. In adult rats (N=10), the nerves of the hind limb were exposed, isolated and inserted through the slit (i.e., slide and lock). Wireless stimulation was evaluated using motion video analysis of the hind-limb evoked movements over 30 days. All animal procedures were performed in accordance with the institutional animal care guidelines.

Results: The wNClip has low impedance (300 KΩ, 1 KHz) and delivered up to 1 nC charge per phase. Electromagnetic coupling with an antenna placed 4-6 cm from the wireless stimulator implanted on the peroneal fascicle evoked amplitude dependent plantar flexion limb movements using 150 µs pulses at 5 Hz. Histological observation of the common peroneal nerve showed no adverse tissue response due to the wNClip implantation or wireless stimulation over time.

Conclusion: A miniature fully implantable wireless electrodes with a slide-in-lock anchoring mechanism can be inserted onto small nerves with minimal handling, thus reducing the risk of nerve damage. A wNClip electrode permits selective neural interfacing and could be directly applicable to the management of urinary incontinence.
AUTOMATED ANALYSIS OF SPONTAENEOUS RHYTHMIC CONTRACTIONS DURING URODYNAMICS IDENTIFIES INCREASING AMPLITUDE FROM LOW TO HIGH VOLUMES IN A SUBGROUP OF PATIENTS WITH DETRUSOR OVERACTIVITY

Zachary Cullingsworth¹, Adam Klausner, MD², John Speich, PhD¹
¹Virginia Commonwealth University, Department of Mechanical and Nuclear Engineering, Richmond, VA, ²Virginia Commonwealth University, Department of Surgery/Division of Urology, Richmond, VA

Presented By: Zachary Cullingsworth, BS

Introduction: Visual identification of isolated, sporadic or periodic non-voiding contractions is used to diagnose detrusor overactivity (DO) during urodynamics (UD). Spontaneous Rhythmic detrusor Contractions (SRC) contributes to overactive bladder in some patients. The aims of this study were to objectively quantify SRC at low and high volumes during UD filling, detect any changes in frequency and amplitude of SRC that correlate with filling and determine whether these changes in SRC correlate with a subgroup of patients with DO.

Methods: Retrospective analysis of UD data from 95 adult patients was performed using an automated Fast Fourier Transform (FFT) algorithm. Low volume (first 265 seconds of filling) and high volume (265 seconds immediately prior to void) regions were analyzed to identify three frequencies in the 1.75-6 cycle/minute range associated with the largest rhythmic amplitude peaks in vesical pressure (Pves). Peak Pves amplitudes 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). SRC frequencies and amplitudes of any significant and independent rhythmic activity were quantified in each patient.

Results: A neurourologist performed a blinded analysis of UD pressure data and identified 52/95 patients as having DO. Significant SRC in Pves data, independent of Pabd, were identified at both high and low volumes in 11 patients. All 11 were in the DO group, and there was a significant association between increasing SRC amplitude and DO in this group (Fischer's exact test, p=0.0008). The slowest significant frequencies at low and high volumes in this group were not different (2.3±0.2 and 2.6±0.4 cycles/min, respectively, n=11, p>0.05), while SRC amplitude nearly doubled at those frequencies (6.7±1.1 cm-H2O and 12.0±2.5 cm-H2O, respectively, n=11, p<0.05).

Conclusion: Analysis of SRC in UD data identified a subgroup of patients with DO (11/52, 21%) with quantifiable SRC in Pves at both low and high volumes. These patients showed an increase in amplitude, but not frequency of SRC throughout filling. The automated algorithm could be implemented to provide real-time quantification of SRC throughout filling. Characterization of SRC could potentially provide metrics to quantify severity of DO and response to treatment.
THE PSYCHIATRIC IMPACT OF MEDICAL AND OTHER TRAUMA ON ADULT UROLOGICAL PROCEDURES
Annie Chen, MD1, Yiqin Xu, MD2, Jillian Egan, MD3, Feustel Paul, MD1, Elise De, MD4
1Albany Medical Center, 2University of Virginia Medical Center, 3Georgetown University, 4Massachusetts General Hospital
Presented By: Annie Chen, MD

Introduction: Trauma can have a lasting impact. Our observation is 1) patients with post-traumatic stress disorder (PTSD) express more concern regarding invasive testing and 2) urologists shy away from offering invasive urological procedures for fear of evoking PTSD symptoms. It is unclear what characteristics, such as the type of trauma experienced, influence patient perception of instrumentation. This study seeks to identify characteristics that best predict anxiety and pain when undergoing urologic testing.

Methods: Prospective observational trial of 61 sequential patients (average age 55.1 years, 68% female) planned for cystoscopy, urodynamics, or prostate biopsy. PTSD was assessed by the PTSD checklist (PCL-5), type of trauma experienced by life-events checklist (LEC-5), anxiety levels before and during the procedure by the rapid anxiety assessment scale (RAA) and pain during the procedure (Wong-Baker scale).

Results: PTSD patients were identified by a cutoff of ≥33 on PCL-5 as per the National Center for PTSD (n=12, all female). PTSD at baseline correlated with anxiety before [F(1,58)=22.26, p=0.00 r²=28%] and during procedure [F(1,57)=20.84, p=0.00 r²=27%]. Level of pain during the procedure did not correlate [F(1,58)=2.95, p=0.091 r²=5%]. Type of trauma experienced (invasive bodily trauma including surgical/medical instrumentation or sexual abuse versus non-invasive trauma [e.g. house fire] versus no trauma) did not correlate with diagnosis of PTSD [F(2,57)=0.53, p=0.595] nor RAA before [F(2,57)=1.52, p=0.23] or during the procedure [F(2,56)=3.04, p=0.06]. However, higher levels of pain correlated with type of trauma experienced [F(2,57)=3.98, p=0.024] with invasive bodily trauma (M=3.65, SD 2.74) significantly different from no trauma (M=1.60, SD 2.96).

Conclusion: PTSD correlated with increased levels of anxiety, but not the level of pain experienced during an invasive urological procedure. There was no evidence that increased patient worry resulted in increased pain experienced. History of invasive bodily trauma was, however, predictive of higher pain levels during the procedure. These findings may inform counseling, preparation/relaxation techniques patients may seek with outside therapist, or help predict indication for sedation.
Poster #NM87
ASSOCIATED URODYNAMIC FINDINGS IN MEN AND WOMEN WITH DETRUSOR UNDERACTIVITY
Tamsin J. Greenwell, Richard Axell, Mariele Trimboli, Mahreen Pakzad, Rizwan Hamid, Jeremy Ockrim
University College London Hospital, UCLH
Presented By: Tamsin Jillian Greenwell, MBChB, MD FRCS(Urol)

Introduction: Detrusor underactivity (DU) occurs in 9-48% of the population depending upon age, sex and definition. We assessed the incidence and type of associated urodynamic findings in men and women diagnosed with DU following urodynamic assessment at our institution for refractory lower urinary tract symptoms in a 20 month period.

Methods: We reviewed the urodynamic findings in all 1155 (460 male) patients having videourodynamics and simple urodynamics between 31/5/16 and 3/1/18. Tests with no or problematic voiding studies were excluded. Detrusor underactivity was defined as per 2002 ICS definition. Details on DU patient demographics and their urodynamic findings were determined and are detailed in Table 1. Statistical analysis was by T Test and Chi Square analysis and significance determined as P < 0.05.

Results: 440 patients (38%) had DU; 38% (176) of men and 41% (264) of women.

Conclusion: Women with DU are significantly younger, they have significantly larger total and maximal functional capacity, and significantly higher Qmax then men with DU. Conversely men with DU have significantly more reduced compliance, detrusor overactivity and urge urinary incontinence.
Poster #NM88
ESTIMATION OF PVR IN MALE PATIENTS WITH CHRONIC RETENTION AND ITS CORRELATION TO URODYNAMIC FINDING

Mohamed Etafy¹, Beauvoirl Noel Saint², Richard Mendelson³, Angelo Gousse²
¹Bladder Health and Reconstructive Urology Institute, Miami, FL, USA OR Alazhar university Hospital Egypt, ²Bladder Health and Reconstructive Urology Institute, Miami, FL, USA, ³Keiser University

Presented By: Mohamed Etafy

Introduction: Men can develop urinary retention from obstruction of the bladder outlet, as well as from detrusor dysfunction. Bladder outlet obstruction (BOO) is a commonly diagnosed cause of urinary retention. The most common causes of BOO in males are related to prostatic pathology such as benign prostatic hyperplasia and prostate cancer. Medications, such as alpha agonists and tricyclic antidepressants, may also contribute to BOO.

Methods: After IRB approval, we retrospectively reviewed men with urinary retention, who were referred to our center for urodynamic evaluation from 2014-2016. Men with a history of neurogenic voiding dysfunction or major pelvic surgery were excluded. We have identified 49 men who presented with a Foley catheter as a result of chronic retention. Post void residual (PVR) before Foley catheter placement was recorded. All remaining (55) patients diagnosed with chronic retention at our facility. Urodynamic results were recorded as well as treatment plans.

Results: A total of 104 men with urinary retention and a median age of 68 years underwent urodynamic evaluation. Bladder outlet obstruction using urodynamic criteria was diagnosed in 83 men. Detrusor underactivity was present in 21 participants. It was noted that PVR was related to the causes of retention as it generated a Mean and Median respectively of 441.7 ml and 364.5 ml in BOO group and 323 ml and 334.6 ml in Detrusor underactivity group. Further, a Pearson Correlation analysis was run to examine the relationship between PVR and the causes of retention. The Pearson Correlation Coefficient ($r$) is a 0.692 is significant at the 0.01 level. The results indicate that there is a linear relationship between PVR and the cause of retention (BOO vs underactive Bladder).

Conclusions: Our results suggest that underactive bladder patients with retention have higher PVR than those who have BOO. Given the wide spectrum of urodynamic findings in men with retention, line of treatments may differ according to the causes. Elevated PVR volume provides a statistically significant indication of urinary retention etiology.
Poster #NM89
THE AETIOLOGY OF DETRUSOR UNDERACTIVITY
Huriye Kocadag, Core Trainee, Richard Axell, Clinical Scientist, Mahreen Pakzad, Consultant, Rizwan Hamid, Consultant, Jeremy Ockrim, Consultant, Tamsin Greenwell, Consultant
University College London Hospital, UCLH@ Westmoreland Street, London, W1G 9PH
Presented By: Rizwan Hamid, FRCS(Urol), MD(Res)

Introduction: Detrusor underactivity (DU) occurs in 9-48% of the population depending upon age, sex and definition. We assessed the incidence and possible causes of DU in men and women having urodynamic assessment at our institution for refractory lower urinary tract symptoms in a 20 month period.

Methods: We reviewed the urodynamic diagnosis and possible aetiology of all 1256 (510 male) patients attending for videourodynamics and simple urodynamics for the above indications between 31/5/16 and 3/1/18. Detrusor underactivity was defined as per 2002 ICS definition. Details on DU patient demographics and past medical and surgical history were determined and are detailed in Table 1. Statistical analysis was by T Test and Chi Square analysis and significance determine as P < 0.05.

Results: 101 (50 male) patients were excluded for trace or test quality issues. Of the remainder 440 (38%) had DU; 38% (176) of men and 41% (264) of women. P < 0.05

SUI = stress urinary incontinence
POP = pelvic organ prolapse
AUS = artificial urinary sphincter

Conclusion: Neuropathic DU is significantly more common in women. None neuropathic women with DU are significantly younger than their male equivalents. Risk factors for none neuropathic DU are previous SUI, POP or pelvic surgery in women and prior radical prostatectomy in men.
Poster #NM90
ESTABLISHING THE BENEFIT OF VIDEO-URODYNAMICS AFTER NON-DIAGNOSTIC CYSTOMETROGRAMS
Bogdan Toia, Mahreen Pakzad, Rizwan Hamid, Tamsin Greenwell, Jeremy Ockrim
University College London Hospital
Presented By: Jeremy Ockrim, MD, BSc(Hons), FRCS

Introduction: Complementing cystometrograms (CMG) with fluoroscopic imaging (video-urodynamics, VCMG) contributes additional anatomic detail and possibly pathophysiology of the urinary tract. Literature on the utility of this supplementary information is sparse and contradictory. We assessed whether the addition of fluoroscopic imaging changed diagnosis and surgical management in a cohort of patients with lower urinary tract symptoms.

Methods: Twenty consecutive patients that underwent CMG, followed subsequently by VCMG were included. The data extracted included CMG and VCMG findings (diagnosis), surgical management and functional outcomes. All cytometrograms were performed for indications in accordance to NICE guidelines and ICS protocol.

Results: 20 patients were included (10 men and 10 women) of whom 9 had neuropathic indications and the rest had non-neuropathic incontinence. The VCMG changed the CMG (primary) diagnosis in 7 patients (35%), leading to change in surgical decision in 5 patients (25%). One patient had a new diagnosis of stress urinary incontinence seen on fluoroscopy treated by pelvic floor physiotherapy. One patient had significant bladder descent quantified changing intervention from a sling procedure to colposuspension. The site of obstruction was described in two male patients, leading to Uro-Lift procedure and a bladder neck incision respectively. De novo detrusor overactivity was identified in 3 patients leading to Botulinum toxin A injections, SNM and PTNS respectively.

Conclusion: VCMG following a non-diagnostic CMG changed the diagnosis in 35% of patients. In 4 patients (20%) the diagnosis was altered by the fluoroscopy, and in three others (15%) de novo overactivity was picked up in the second (more detailed) study. Patient interventions were altered by these findings. Further research is required to outline subpopulations and establish the risk and cost benefits ratios.
Poster #NM91
WHICH IS THE BETTER OPTION FOR STRESS URINARY INCONTINENCE WITH HIGH RISK OF RECURRENT BETWEEN RETROPUBIC AND TRANSOBTURATOR MIDURETHRAL SLINGS: A SYSTEMIC REVIEW AND META-ANALYSIS
Aram Kim¹, Ji-Yeong Han², Young-Jin Park¹, Woo Suk Choi¹, Hyoung Keun Park¹, Sung Hyun Paick¹, YongTae Kim³, Hyeong Gon Kim¹, Hong Yong Choi³, Hyun Woo Kim⁴
¹Department of Urology, Konkuk University Medical Center, Konkuk University School of, ²Department of Urology, Pusan National University Yangsan Hospital, Korea, ³Hanyang University Hospital, ⁴Department of Urology, Catholic University Hospital
Presented By: Aram Kim, MD, PhD

Introduction: To compare the efficacy between retropubic (tension free vaginal tape; TVT) versus transobturator midurethral slings (TOT) for female stress urinary incontinence (SUI) in patients with high risk for recurrence through an systemic review and meta-analysis of researches comparing these 2 surgical methods.

Methods: A literature review was performed for all researches comparing TVT versus TOT for female stress urinary incontinence (SUI) in patients with obesity, intrinsic sphincter deficiency (ISD), pelvic organ prolapse (POP) or recurrence of SUI after midurethral sling (persistent SUI). The review included Medline, Embase, Scopus, Web of Science database, and Cochrane Controlled Trial Resister.

Results: We retrieved 26 researches (n=2406) to compare clinical efficacy between TVT and TOT in high risk of recurrence group with mean follow-up of 25.6 months. The meta-analysis of objective cure rate showed significant superiority of TVT over TOT (odds ratio [OD]: 2.71; 95% confidence interval [CI]: 2.00- 3.65; P

Conclusion: The meta-analysis showed clear results of the superiority of TVT in objective and subjective cure rate over TOT in patients with obesity, ISD, POP and persistent SUI.
Poster #NM92
DOES A RISK CALCULATOR CORRECTLY PREDICT DE NOVO POSTOPERATIVE STRESS URINARY INCONTINENCE AFTER SURGERY FOR PELVIC ORGAN PROLAPSE IN A RACIALLY/ETHNICALLY DIVERSE POPULATION?
Sophie Sohval, BS1, Shirly Solouki, MD2, Nitya Abraham, MD3
1Albert Einstein College of Medicine, Bronx, NY, 2Montefiore Medical Center, Dept. Obstetrics Gynecology, Bronx, NY, 3Montefiore Medical Center, Dept. Urology, Bronx, NY
Presented By: Shirly Solouki, MD

Introduction: A recent study demonstrated that a validated model was more accurate in predicting de novo stress urinary incontinence (SUI) than both preoperative stress testing and expert prediction. However, this model was validated using a population that was 85% White. The study objective was to evaluate if this model correctly predicted de novo SUI after pelvic organ prolapse (POP) surgery in a diverse population.

Methods: This is a retrospective review of women without SUI who underwent POP surgery with or without a prophylactic incontinence procedure from January 2014 to January 2017. Charts were reviewed for demographic/clinical information and patient report of SUI up to 12 months after surgery. Patient characteristics were entered into the risk calculator and predicted risk was compared to actual outcome.

Results: 95 women without SUI underwent POP surgery during the inclusion period. 39 (48.2%) were Hispanic, 18 (22.2%) Black, 13 (16.1%) White, and 11 (13.6%) Other. 14 women developed de novo SUI (14.7%). Women with de novo SUI had a significantly higher BMI, smoking rate, and POPQ Aa point. The overwhelming majority of patients who developed de novo SUI were of Hispanic background (85.7%) There was no difference in the mean predicted percentage risk of de novo SUI after POP surgery without a concomitant incontinence procedure in women who developed SUI (36.2 95%CI 31.2-41.3) versus women who did not develop SUI postoperatively (33.0 95%CI 31.4-34.6). The majority of patients (85.7%) developed SUI within 6 months after surgery. Only 12 women underwent a prophylactic incontinence surgery at time of POP repair, of whom one patient developed de novo SUI, precluding comparison of these two groups.

Conclusion: A risk calculator predicting de novo SUI after POP surgery without an incontinence procedure validated using a primarily White population did not correctly predict de novo SUI in this diverse population. The racial/ethnic composition of data sets used to create predictive models may affect its application in certain patient populations. Additional studies in diverse populations are needed to confirm these findings.
Poster #NM93
WOMENS PERCEPTIONS OF RESTROOM AVAILABILITY
Sophia Delpe Goodridge, Casey Kowalik, Adam Daily, Siobhan Hartigan, Stuart Reynolds, Faculty, Melissa Kaufman, Faculty, Roger Dmochowski, Faculty
VUMC
Presented By: Sophia Delpe Goodridge, MD

Introduction: Accessibility to restrooms has been a enduring public health concern resulting in legislation mandating retail establishments provide restrooms for all employees and patrons with varying medical conditions. Sparse data is available regarding individuals' perceptions concerning restroom availability.

Methods: This was an IRB approved, cross-sectional study with 5053 women completing an online survey regarding perception of public restrooms both at work/school/volunteering opportunities and socially. Descriptive data analysis was performed on survey results. Pearson correlation was used to examine strength of association between communities and public restroom avoidance.

Results: Average age of respondents was 37.49 ±13.21 (range: 18-83). Eighty-four percent of participants were white/Caucasian, 9% African American, 4.9% Asian and 4.7% Hispanic or Latina. The majority of respondents were from urban (39.5%) or suburban areas (49.9%), with 10.5% from rural areas. When queried about public restroom satisfaction, the majority of respondents were satisfied with cleanliness (77.8%, 59.9%), accessibility (82.7%, 76.4%), safety (91.2%, 81.5) and privacy (77.8%, 67.6%) of restrooms both when at work/school/volunteer and socially, respectively. While 78.7% participants reported limiting restroom use while out socially, only 56.3% reported this same behavior while at work. The top reasons reported for limiting use of public restrooms while out socially were quality and long lines. Limited availability was reported as a reason by 715 (17.96%) respondents. Participants from rural areas (64.9%) reported avoiding public restrooms at higher rates than those from urban (58.2%) and suburban areas (60.90%) (p= 0.012).

Conclusion: The majority of respondents reported satisfaction with public restroom cleanliness, availability safety and privacy, though there is a clear perception of higher quality restrooms at work/school/volunteer than at social venues. Those who do limit restroom use report perception of a lack of access as well as poor quality. Further studies may expand on this knowledge, particularly in those participants with overactive bladder or bowel diagnoses who perceive lack of access.
INTRODUCTION: Urinary incontinence (UI) is a highly prevalent, embarrassing, condition that is not often discussed. Internet discussion forums can be used to seek and share health information anonymously. Reddit is one of the most commonly used internet sites for anonymous expression and discussion. We used qualitative analysis of UI experiences expressed on Reddit to improve clinicians’ understanding of the patient perspective on UI.

METHODS: Posts from the SubReddit group titled “Incontinence” from 2013-2018 and from “BeyondtheBump” (postpartum forum) from 2017-2018 were used as a transcript for qualitative analysis. Two independent researchers read and coded posts discussing incontinence until saturation of content. Posts on the topic of fecal incontinence were excluded. Charmaz’s principles of grounded theory were applied, including line-by-line coding of transcripts utilizing key phrases followed by grouping of similarly-coded phrases into preliminary themes. Emergent concepts were derived from these themes.

RESULTS: 108 posts with 357 responses from the Incontinence Subreddit and 12 posts with 172 responses in the BeyondtheBump Subreddit were analyzed. A diverse group of Reddit users with UI etiologies ranging from spinal cord conditions to postpartum complications and overactive bladder were sampled. Qualitative analysis resulted in six preliminary themes (Table 1), and three emergent concepts were formed (Table 2). The first emergent concept was isolation. Users felt alone in their condition, and they expressed difficulty relating to others because of their UI symptoms. The second was gradual acceptance. Users described becoming less embarrassed and self-conscious of their condition over time. The third was self-drive. While users saw physicians, they also independently looked for ways to address their issues, and they provided encouragement and support for others in the group.

CONCLUSION: Reddit users with UI experience embarrassment and social isolation. Nonetheless, they are self-driven to improve symptoms, and they learn acceptance and coping mechanisms over time. Internet forums such as Reddit may serve as a resource for people with UI to share their experiences and decrease the social isolation associated with this condition. Using this analysis, providers can better understand patients’ perspectives and needs related to UI and strive to provide optimal care.
Poster #NM95
FEASIBILITY STUDY OF NON-ABLATIVE CRYOGEN-COOLED MONOPOLAR RADIOFREQUENCY TREATMENT FOR STRESS URINARY INCONTINENCE (SUI): INTERIM 12-MONTH Results: Bruce B. Allan, PhD, MD, FRCS(C)¹, Stacie Bell, PhD², Kathryn Husarek, PhD²
¹Allan Centre, ²Viveve
Presented By: Bruce B. Allan, PhD, MD, FRCS(C)

Introduction: Stress urinary incontinence (SUI) is the most common type of urinary incontinence and affects millions of women worldwide. Current treatment options are limited and vary depending severity of incontinence and the impact on quality of life. Pelvic floor exercises offer some relief for women, but long-term compliance and sustainability is difficult. Surgery is often a last resort and has a multitude of complications and/or risks associated. This large gap in treatment options for SUI presents an opportunity to meet an unmet need in healthcare for women. This study aimed to investigate the safety and efficacy of a non-invasive, non-surgical cryogen-cooled monopolar radiofrequency (CMRF) treatment for SUI.

Methods: This was a prospective study designed to demonstrate that the study treatment meets primary efficacy and safety endpoints. This study received Health Canada ITA clearance and approval from the Health Research Ethics Board of Alberta. Thirty-five (35) subjects meeting all the I/E criteria were enrolled and treated. Subjects were randomized into two groups; Group 1 received a single treatment and Group 2 received two treatments approximately six (6) weeks apart. Follow-up visits occurred at 10 days and at 1, 4, 6, and 12 months post-treatment. At the Screening Visit, and at each timepoint beginning at Month 1, subjects were asked to perform a 1-hour pad weight test and to complete a 7-day bladder voiding diary and UDI-6, IIQ-7, ICIQ-UI-SF, and FSFI questionnaires.

Results: Preliminary 12-month data indicate an improvement in SUI symptoms for subjects, as determined by the objective 1-hour pad weight test and the UDI-6, IIQ-7, ICIQ-UI-SF, and FSFI questionnaires, with a greater than 50% reduction in pad weight for 60% of the subjects at 12 months (data collected to date). The overall response rate is between 70-80% with all measures considered. In addition to efficacy, the CMRF system was well tolerated and safe.

Conclusion: The outcome measures indicate a significant improvement in SUI symptoms as evaluated by the objective 1-hour pad weight test and several subjective patient-reported outcome measures. The sustained benefit of the CMRF vaginal treatment suggests its potential for use as a non-invasive approach to treat SUI, offering a much-needed option for millions of women.
Poster #NM96
3-YEAR OUTCOMES OF ROBOT-ASSISTED ARTIFICIAL URINARY SPHINCTER IMPLANTATION IN FEMALE PATIENTS WITH STRESS URINARY INCONTINENCE
Benoit Peyronnet, MD1, Gregoire Capon, MD2, Olivier Belas, MD3, Andrea Manunta, MD1, Pierre Callerot, MD4, Juliette Hascoet, MD1, Aurélien Descazeaud, MD3, Grégoire Robert, MD PhD2, Georges Fournier, MD4
1University of Rennes, 2University of Bordeaux, 3Polyclinique Sud Le Mans, 4University of Brest, 5University of Limoges
Presented By: Benoit Peyronnet, MD

Introduction: In recent years, several preliminary reports have suggested that the robot-assisted approach may decrease the surgical morbidity of artificial urinary sphincter (AUS) implantation in female patients with stress urinary incontinence (SUI). However, for now, only short-term outcomes were reported. The aim of the present study was to report the 3-year outcomes of robot-assisted AUS implantation in women.

Methods: All female patients who underwent a robot-assisted AUS implantation between March 2012 and May 2015 at 5 departments of urology were included in a retrospective study. The indication for AUS implantation was SUI due to intrinsic sphincter deficiency (ISD) in all cases, i.e. SUI demonstrated at the cough stress test with a fixed urethra, low urethral closure pressure and negative Marshall/Bonney test. The robot-assisted approach was the only approach used for AUS implantation in women in the 5 centers involved over the study period. The primary endpoint was the functional outcome at last follow-up as reported by patients and categorized as follows: cured (i.e. 0 pad per day), improved, unchanged or worsened. Revision-free and explantation-free survivals were estimated using Kaplan-Meier analyzes.

Results: Twenty-four female patients underwent AUS implantation over the study period and were included. The median age was 71 years and 19 patients had a history of previous midurethral sling (79.2%) and 83.3% of patients had undergone at least one previous anti-incontinence procedure. There were 3 intraoperative complications (12.5%): 1 bladder neck injury and 2 vaginal injury. Five patients had post-operative complications (20.8%) but only one was Clavien grade ≥3 (4.2%): a device explantation for vaginal erosion on postoperative day 30. After a median follow-up of 40.5 months, no other explantation was needed (figure 1) and only two revisions were required (8.3%) 30 and 37 months postoperatively for mechanical failure and bladder neck atrophy respectively. At the latest follow-up, 19 patients reported being cured (79.2%), three were improved (12.5%) and two were unchanged (8.3%) including the one who had her device explanted.

Conclusion: 3-year outcomes of robot-assisted AUS implantation seems to confirm the promising short-term outcomes that have been reported so far with no further erosion/explantation and only two revisions needed after a median follow-up of 40.5 months.
Poster #NM97
SAFETY OF INTRADETRUSOR ONABOTULINUIMTOXINA INJECTION IN THE ASYMPTOMATIC PATIENT WITH A POSITIVE URINE DIP
Laura L. Giusto, Patricia M. Zahner, Samir Derisavifard, Jessica J. Rueb, Michele Fascelli, Courtenay K. Moore, Raymond R. Rackley, Sandip P. Vasavada, Howard B. Goldman
Cleveland Clinic Foundation
Presented By: Laura L. Giusto, MD

Introduction: According to the safety insert for usage of intradetrusor onabotulinumtoxinA (BTX-A) injection, a patient must not have a urinary tract infection (UTI) at the time of the procedure. In practice, many patients are tested with a point of care urine dipstick (UD) in the office before the procedure. Some surgeons may choose to inject in the setting of a positive UD if the patient is asymptomatic. We aim to evaluate differences in adverse events (AE) in asymptomatic patients with and without a positive UD at time of BTX-A injection.

Methods: Intradetrusor BTX-A injections were retrospectively reviewed between 2016-2018. Exclusion criteria included: indwelling catheter, recent urine culture, recent antibiotic course, or no UD on the day of injection. Patient demographic data and adverse events (AE) were extracted. Positive UD was defined as any combination of positive blood, leukocyte esterase (LE), or nitrite. Negative UD was defined as complete absence of any blood, LE, or nitrite. Appropriate statistical tests were performed.

Results: 335 patients who underwent BTX-A injections over a two-year period met inclusion criteria. The majority received 100 units (56.7%) for a non-neurogenic diagnosis (73.4%). No clinically significant demographic differences were noted between groups. The overall rate of AEs, UTI, and urinary retention was 16%, 9%, and 3%, respectively. Compared to patients with negative UD, those with a positive UD had higher AE rates (18.3% vs 12.7%, p = 0.18) but this difference was not significant (Table 1). In both groups, the most common AE was uncomplicated UTI followed by urinary retention. There was no difference in the rates of unplanned phone calls, office visits, emergency department encounters, or hospital readmissions between those with positive vs negative UD. There were no major Clavien-Dindo-defined complications, and all AE were managed as an outpatient.

Conclusion: BTX-A injection with a positive UD defined as presence of LE, nitrite, or blood portends no significant risk of adverse events compared to negative UD. Given these findings, surgeons may consider proceeding with BTX-A injection in a patient with a positive UD as long as they do not have symptoms of UTI.

<table>
<thead>
<tr>
<th>Table 1: Classification of AE</th>
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<tr>
<td></td>
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<tr>
<td>Overall complication rate</td>
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<tr>
<td>p-value</td>
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<tr>
<td>Hospital admissions</td>
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<tr>
<td>UTI</td>
</tr>
<tr>
<td>Bleeding/Hematuria</td>
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<tr>
<td>Urinary Retention</td>
</tr>
<tr>
<td>Other*</td>
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*Other - dysuria, lidocaine toxicity, office phone call
Poster #NM98
ADHERENCE TO THE 1997 FEMALE STRESS URINARY INCONTINENCE GUIDELINES PANEL STANDARDS FOR CLINICAL TRIALS
Nicole Tuong, Nickhil Patel, Jacqueline M. Zillioux, David Rapp
University of Virginia School of Medicine
Presented By: Nicole E. Tuong, MD

Introduction: In 1997, the Female Stress Urinary Incontinence (SUI) Clinical Guidelines Panel published suggested research standards to be used in SUI trials to better assess outcomes. In 2008, analysis of studies published subsequent to these guidelines demonstrated suboptimal adherence with these standards. We sought to perform an updated literature review to assess compliance with research guidelines. We expanded our review to include all studies related to the treatment of urinary incontinence (UI).

Methods: We conducted a literature search of all 2017 articles published in 3 urologic journals: Journal of Urology (JU), Neurourology and Urodynamics (NU), and Urology (UR). Accordingly, we identified trials of UI therapies and assessed for guideline compliance. Standards for investigational studies were subcategorized into groups as follows: methodology, pre-treatment assessment, and post-treatment assessment. One point was given for compliance with each recommendation. Chi square and Kruskal tests were used to assess compliance across journals and standards subcategories.

Results: Of 294 articles reviewed, 78 articles met inclusion criteria for analysis (JU, n=13; NU, n= 48; UR, n=17). Compliance with all standards are detailed in Table 1 and demonstrated differences between journals in select standards in both methodology and pre-treatment categories. There was no statistically significant difference between the 3 journals in post-treatment standards compliance. JU had the highest percentage of methodology compliance at 72% (±22.4), compared to 48% (±23.6) and 41% (±27.8) of NU and UR articles, respectively (p=0.004). There was 68% (±23.8), 69% (±27.4), and 55% (±32.8) compliance with pre-treatment standards of JU, NU, and UR respectively (p=0.18). Similarly, there was 56% (±19.8), 57% (±22.8), and 46% (±27.3) compliance with post-treatment standards of JU, NU, and UR respectively (p=0.13).

Conclusion: Our review demonstrates that a significant percentage of UI trials fail to meet suggested standards for clinical research. While there were no differences in adherence among journals for pre- or posttreatment standards, UI studies in JU had higher compliance with methodology standards.

Table 1: Journal Compliance with Standards

<table>
<thead>
<tr>
<th>Standards</th>
<th>JU (n=13) [%]</th>
<th>NU (n=48) [%]</th>
<th>UR (n=17) [%]</th>
<th>p value</th>
</tr>
</thead>
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<td>Follow up 148 months</td>
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<td>Accounting for subjects lost to follow up</td>
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<td>65</td>
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<td>Prospective design</td>
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<tr>
<td>Randomized</td>
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<td>33</td>
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<tr>
<td>Controlled</td>
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<tr>
<td>Pretreatment</td>
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<td></td>
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<td></td>
</tr>
<tr>
<td>Diary</td>
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<tr>
<td>Pad test</td>
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<td>Quality of Life Questionnaire</td>
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<td>59</td>
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<td>73</td>
<td>88</td>
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</table>

* JU vs. NU
** JU vs. UR

JU, Journal of Urology; NU, Neurourology and Urodynamics; UR, Urology
Poster #NM99
SCREENING FOR URINARY INCONTINENCE IN MINNESOTA WOMEN USING A VALIDATED EPIDEMIOLOGIC SURVEY: A CROSS-SECTIONAL STUDY
Makinna Oestreich, BA1, Martina Gabra, MD4, Katelyn Tessier, MS3, Cynthia Fok, MD, MPH2, Nissrine Nakib, MD2, John Fischer, MD, FACOG4

1University of Minnesota Medical School, Minneapolis, MN, 2University of Minnesota, Dept. of Urology, Minneapolis, MN, 3University of Minnesota, Masonic Cancer Center, Biostatistics Core, Minneapolis, MN, 4University of Minnesota, Dept. of OB/GYN, Minneapolis, MN
Presented By: Makinna Oestreich, BA

Introduction: The prevalence of female pelvic floor disorders (PFDs) including urinary incontinence (UI) is felt to be high, however prior estimates vary. Estimates range from 1% to 50%, in part due to unreliable screening questionnaires for PFDs. The purpose of this study was to use the Epidemiology of Prolapse and Incontinence Questionnaire (EPIQ), a validated screening tool, to determine the prevalence of UI in women attending the Minnesota State Fair.

Methods: After IRB approval, the EPIQ was administered to women ≥ 18 years old attending the Minnesota State Fair in 2018. Data collection occurred over 6 half-day sessions at the University of Minnesota Driven to Discover building. Participants self-reported data using iPads connected to a secure web-based system, Research Electronic Data Capture (REDCap). Demographic data of age, height, and weight was collected and summarized using descriptive statistics. Chi-square or Fisher’s exact tests were used to analyze associations between variables and outcomes.

Results: A total of 1568 subjects were surveyed: 1270 (88%) younger women age 18-64 years, and 173 (12%) older women ≥ 65 years. Overall, 774 (49.5%) participants reported any type of UI. The prevalence of stress urinary incontinence (SUI) and urge urinary incontinence (UUI) were 613 (40.7%) and 363 (24.1%), respectively. A proportionately higher, 97 (56.7%) older women reported any type of UI, when compared to 597 (47%) younger women, p=0.02. UUI was also associated with older age and observed in 53 (32.9%) older and 273 (22.2%) younger women. There was a significant association between childbirth and any type of UI, SUI, UUI, and history of any UI surgery, all p<0.01. In total, 60 (3.8%) women reported at least one surgery related to UI. Additionally, smoking status was significantly associated with any UI, including SUI and UUI, all p<0.01. UI was reported in 156 (63.4%) past and 30 (50.8%) current smokers versus 580 (46.6%) non-smokers.

Conclusion: The prevalence of urinary incontinence in women in Minnesota was relatively high when reported on the validated EPIQ survey compared to previous studies. As expected, urinary incontinence was associated with older age, childbirth, and smoking. Further studies are needed to better assess why our cohort appears to have a higher risk of UI.
Poster #NM100
OPPORTUNISTIC SALPINGECTOMY AT THE TIME OF VAGINAL HYSTERECTOMY FOR PELVIC ORGAN PROLAPSE
Emily Slopnick, MD1,2, David Sheyn, MD1,2, Graham Chapman, MD1,2, Adonis Hijaz, MD2, Sherif El-Nashar, MD, PhD2, Sangeeta Mahajan, MD2
1Division of Urology, MetroHealth Medical Center, Cleveland, OH, 2Urology Institute, University Hospitals Cleveland Medical Center, Cleveland, OH
Presented By: Emily Slopnick, MD

Introduction: Salpingectomy at the time of pelvic surgery in women with a general population risk of ovarian cancer is believed to reduce the risk of ovarian cancer. However, there are concerns that salpingectomy can lead to longer operating times and greater blood loss, particularly in vaginal surgery. Our objective was to determine the patient and surgeon factors associated with salpingectomy at the time of vaginal hysterectomy for pelvic organ prolapse among a national sample.

Methods: For this retrospective cohort study, we queried the National Surgical Quality Improvement Program database from 2014-2016. We identified women with an International Classification of Diseases, Ninth Revision, Clinical Modification (ICD9-CM) code for a primary postoperative diagnosis of pelvic organ prolapse who underwent vaginal hysterectomy with any combination of pelvic reconstructive procedures. Because Current Procedural Terminology (CPT) codes do not differentiate between salpingectomy and salpingo-oophorectomy, subjects were stratified by whether or not concurrent adnexectomy was performed. Descriptive statistics were reported as means with standard deviations. Chi-square analysis was used to evaluate patient and surgeon characteristics associated with salpingectomy at the time of hysterectomy.

Results: A total of 5,344 women underwent vaginal hysterectomy for pelvic organ prolapse, and 2,019 (37.8%) also had adnexectomy. Salpingectomy was more common over time, reported with 34.4% of vaginal hysterectomies in 2014 and 46.8% in 2016 (p<0.001). Only 1.0% of vaginal hysterectomies were performed by urologists. Overall, 42.5% of surgeons were fellowship-trained urogynecologists, and there was no difference in adnexectomy between urogynecologists and general gynecologic surgeons (36.0% vs 38.8%, p=0.197). Salpingectomy was most common among women ages 51 – 64 years (age ≤50 35.0%, 51-64 40.7%, ≥65 35.9%, p=0.001), with no difference in preoperative functional status (p=0.053) or body mass index (p=0.579). Mean operative time was 11 minutes longer with adnexectomy (145 min vs. 134 min). There were no differences in 30-day postoperative outcomes, including urinary tract and wound infections, blood transfusions, reoperation and readmission between salpingectomy groups.

Conclusion: Salpingectomy during vaginal hysterectomy for pelvic organ prolapse is safe and increasingly utilized by gynecologic surgeons nationally for middle-aged women.
Poster #NM101
SUSTAINED BENEFIT OF SUBURETHRAL SYNTHETIC MIDURETHRAL SLING REMOVAL AT LONG-TERM FOLLOW-UP
Nabeel A. Shakir, Connie Wang, Nirmish Singla, Feras Alhalabi, Alana Christie, Gary Lemack, Philippe Zimmern
UT Southwestern
Presented By: Nabeel A. Shakir, MD

Introduction: While patients who seek surgical management for synthetic mid-urethral sling (MUS) complications have been demonstrated to benefit in terms of multidimensional outcomes, it is unclear whether this amelioration of presenting symptoms is sustained with time. We compared improvement in patient reported symptoms following suburethral sling removal (SSR) at short and long-term follow-up.

Methods: We reviewed a prospectively maintained, IRB approved database of women undergoing SSR at our 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 UTIs, and being sexually active. Long-term follow-up was defined as time from SSR to most recent office visit ≥24 months.

Results: From 3/2006-2/2017, 443 women underwent SSR of whom 230 met study criteria. 121/230 (53%) patients had long-term follow-up (median length 46 months, mean 51 months). Median most recent post-SSR total UDI-6 score was 38 vs 50 at baseline (p<0.0001). An ideal outcome was attained in 9/121 (7%) of patients. A modified outcome allowing for one minimally invasive anti-incontinence procedure and excluding sexual activity classified 63/121 (52%) of patients as successes. There were no differences in demographics, medical comorbidities, preoperative symptoms, UDI-6 scores, or proportions of patients reaching an ideal outcome between short or long-term follow-up. However, more patients required minimally-invasive anti-incontinence procedures at long-term follow-up (41/121 vs 14/109, p=0.0002).

Conclusion: The improvement in patient-reported symptoms is sustained long-term following SSR. With increased follow-up, the likelihood of undertaking anti-incontinence procedures increases, the majority of which were minimally-invasive in our population.
Poster #NM102
EARLY EVALUATION OF AN IMPLANTED CHRONIC TIBIAL NERVE STIMULATION DEVICE VERSUS PERCUTANEOUS NERVE STIMULATION FOR THE TREATMENT OF URINARY URGE INCONTINENCE
Larry T Sirls II, MD1,2, Amanda Schonhoff, RN1, Angela Waldvogel, RN1, Deborah Hasenau, RN1, Kenneth M Peters, MD1,2
1Beaumont Hospital, Royal Oak, 2Oakland University School of Medicine
Presented By: Larry Thomas Sirls II, MD

Introduction: Tibial nerve stimulation is effective for the treatment of urgency symptoms, yet the weekly 30-minute protocol likely under delivers stimulation and can represent significant patient burden. Implantable tibial nerve technology with wireless energy delivery may provide longer stimulation times at home and more rapid clinical improvement. This prospective study evaluates two office-based treatments for UI; percutaneous tibial nerve stimulation (PTNS) and chronic tibial nerve stimulation (CTNS) via a wireless neuromodulation system.

Methods: Women reporting bladder symptoms for at least 6 months and experiencing a minimum of 1 UI episode per day were randomized (1:1) to receive 12 weeks of standard PTNS treatments or an implanted CTNS device. CTNS is an investigational office procedure that places a wireless lead parallel to the tibial nerve, patients wear an ankle bracelet and in this study stimulated for 6-8 hours a day. After PTNS women had the option of having the CTNS device placed. Voiding diaries, symptom and QOL questionnaires were completed, and safety was assessed. Descriptive statistics were performed.

Results: Nine women were enrolled; 5 to the CTNS arm and 4 to the PTNS arm. 2 PTNS patients choose to undergo CTNS device implant after PTNS for a total of 7 CTNS devices implanted. There have been no device explants. All 7 remain active study participants, with 6 completing the 13-week visit, and 3 completing the 12-month visit. All PTNS and CTNS patients reported improvements in UI episodes per day, OAB symptoms and QOL (see table). Most CTNS improvement were observed by 4 weeks vs. PTNS improvement at 13 weeks. Positive treatment effects continued through 12-months post-implant. To date, 5 study-related adverse events (AEs) have been reported, all were minor and have resolved.

Conclusion: This is an early evaluation and the sample size is small, but we demonstrate that office based placement of a tibial nerve lead for chronic home-based stimulation is safe and effective in treating UI resulting from OAB. Further work is ongoing.

<table>
<thead>
<tr>
<th>PTNS Mean</th>
<th>Baseline</th>
<th>1 Week</th>
<th>4 Weeks</th>
<th>13 Weeks</th>
</tr>
</thead>
<tbody>
<tr>
<td>UI episodes per day</td>
<td>4.25</td>
<td>2.25</td>
<td>2.66</td>
<td>2.16</td>
</tr>
<tr>
<td>OAB-q</td>
<td>80.5</td>
<td>67.25</td>
<td>52.5</td>
<td>45.50</td>
</tr>
<tr>
<td>i-QOL</td>
<td>43.47</td>
<td>51.42</td>
<td>61.44</td>
<td>68.75</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CTNS Mean</th>
<th>Baseline</th>
<th>3 Weeks</th>
<th>6 Months</th>
<th>12 Months</th>
</tr>
</thead>
<tbody>
<tr>
<td>UI episodes per day</td>
<td>3.05</td>
<td>2.57</td>
<td>1.20</td>
<td>1.06</td>
</tr>
<tr>
<td>OAB-q</td>
<td>75.86</td>
<td>66.66</td>
<td>42.20</td>
<td>42.67</td>
</tr>
<tr>
<td>i-QOL</td>
<td>54.31</td>
<td>60.97</td>
<td>78.68</td>
<td>83.92</td>
</tr>
</tbody>
</table>
Poster #NM103
NOVEL NONINVASIVE EXTERNAL ELECTRICAL MUSCLE STIMULATION DEVICE FOR THE TREATMENT OF FEMALE STRESS URINARY INCONTINENCE: QUALITY OF LIFE CLINICAL OUTCOMES
Roger R. Dmochowski, MD, MMHC
Vanderbilt University Medical Center
Presented By: Roger R. Dmochowski, MD, MMHC, FACS

Introduction: Most electrical muscle stimulation devices for the treatment of stress urinary incontinence (SUI) use transvaginal electrical stimulation. INNOVO® is a novel, non-invasive, external electrical muscle stimulation device for the treatment of incontinence. The aim of this study was to perform a more detailed analysis of the Quality of Life data captured in two randomized controlled trials (RCTs) of the INNOVO® device.

Methods: Two separate RCTs were performed using the INNOVO® device. RCT1: External versus intravaginal electrical stimulation for the treatment of SUI in women: a randomized controlled noninferiority trial, 180 female patients, 12 US centers; and RCT2: A randomised, controlled, double-blind clinical study to evaluate the safety and performance of a new, novel, externally applied neuromuscular electrical stimulation device for the treatment of SUI versus a sham device, 50 female patients, 2 centers in Germany.

Women with SUI, whose condition had not improved using pelvic floor muscle training were randomized:
• to undergo treatment with either the INNOVO® or itouch sure® comparator device for 12 weeks (RCT1)
• to undergo treatment with either the INNOVO® or sham device for 12 weeks (RCT2)

In both studies, treatment was administered by the subjects at home using the devices in accordance with relevant instructions for use: INNOVO® and sham device 30 minutes once daily for 5 days/week for 12 weeks; comparator device 20 minutes once daily every day. Quality of Life questionnaire score was assessed using the I-QOL at baseline, weeks 4, 12 and 26. RCT2 continued to monitor I-QOL up to 12 months.

Results: The total sample size was 230 patients with 113 women randomized to INNOVO® group; 91 to the comparator and 26 to the sham device. Baseline incontinence characteristics were similar between the groups. In the INNOVO® group, statistically significant improvements from baseline in I-QOL score were seen at week 12. The INNOVO® clinical studies confirm that quality of life significantly improves after treatment with the device (Table 1). These results will be discussed further.

Conclusion: INNOVO® is a novel, noninvasive, external electrical muscle stimulation device for the treatment of female SUI demonstrating significant improvement in I-QOL scores.

<table>
<thead>
<tr>
<th></th>
<th>Baseline</th>
<th>Week 4</th>
<th>Week 12</th>
<th>Week 26</th>
<th>9 months</th>
<th>12 months</th>
</tr>
</thead>
<tbody>
<tr>
<td>RCT 1 - German</td>
<td>42.42</td>
<td>47.05</td>
<td>51.79</td>
<td>56.54</td>
<td>62.00</td>
<td>60.17</td>
</tr>
<tr>
<td>RCT 2 - USA</td>
<td>58.55</td>
<td>66.09</td>
<td>71.97</td>
<td>77.88</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 1: INNOVO® I-QOL results summary
Poster #NM104

SPEAKING ROLES OF FEMALE UROLOGISTS AT NATIONAL MEETINGS: SUFU PAVING THE WAY
Colby P. Souders, MD1, Deanna Wong2, Ashley Caron1, Jennifer Anger, MD MPH1, Maurice Garcia, MD1
1Department of Urology, Cedars-Sinai Medical Center, Los Angeles, CA, 2David Geffen School of Medicine at UCLA, Los Angeles, CA
Presented By: Colby P. Souders, MD

Introduction: In 2016, women made up 8.5% of practicing urologists. More than 1/3 of female urologists work in academia (12.1% of academic urologists). Women are more likely to be fellowship trained than their male counterparts. The proportion of women entering U.S. urology residencies has been approximately 25% for the last four years. The objective of this research is to assess the degree to which speaking roles at the AUA Annual Meetings, which confer visibility and representation for women, reflect the proportion of women academic urology and urology trainees in the U.S. today.

Methods: The AUA meeting programs from 2014-2016 were evaluated to identify female moderators, presenters (which included panelists, debaters, discussants), first authors (presenters), and senior authors (non-presenting role). We also categorized their roles by urology topic (SUFU and non-SUFU topics). “SUFU topics” include: female urology/incontinence, IC/pelvic pain, voiding dysfunction, geriatric urology, pelvic organ prolapse, neurogenic bladder, etc. “Non-SUFU” topics included oncology, endourology, etc. If unable to identify the gender by name alone, the names were searched on Google to look for gender-identifying pronouns. Analysis was restricted to U.S. institutions.

Results: In 2014, women urologists had speaking roles at the AUA 0.5-31% of the time, depending on the session. Within SUFU topics, it ranged from 6-31% and for non-SUFU topics 0.5-13% (Table 1). In 2015, women urologists had speaking roles at the AUA 2-38% of the time, but within SUFU topics it ranged from 5.5-38% of the time and for non-SUFU topics 2-16%. In 2016, women urologists had speaking roles at the AUA 5-35% of the time, but within SUFU topics it ranged from 8-35% of the time, and for non-SUFU topics 5-15%.

Conclusion: The number of women with speaking roles at the AUA has generally increased across most speaking categories. Female urologists tend to have more speaking roles in SUFU-related topic sessions. In 2016, every speaking category except for “Course Directors” within the SUFU topic area had more than 11.9% females (the proportion of females in academic urology). SUFU is leading the way in closing the gender gap in urology. Ideally, this trend will spread across other urologic subspecialties over time, as more women enter the field.

Table 1. Speaking Roles of Female Urologists at the AUA

<table>
<thead>
<tr>
<th>Year</th>
<th>SUFU Topics</th>
<th>Non-SUFU Topics</th>
</tr>
</thead>
<tbody>
<tr>
<td>2014</td>
<td>7.7%</td>
<td>7.7%</td>
</tr>
<tr>
<td>2015</td>
<td>7.7%</td>
<td>8.5%</td>
</tr>
<tr>
<td>2016</td>
<td>8.5%</td>
<td>11.9%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Role</th>
<th>SUFU Topics</th>
<th>Non-SUFU Topics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moderators</td>
<td>20.4%</td>
<td>5.1%</td>
</tr>
<tr>
<td>Plenary Speakers</td>
<td>6.3%</td>
<td>9.2%</td>
</tr>
<tr>
<td>Course Directors</td>
<td>9.5%</td>
<td>9.8%</td>
</tr>
<tr>
<td>Course Faculty</td>
<td>10.2%</td>
<td>9.0%</td>
</tr>
<tr>
<td>Moderators</td>
<td>20.4%</td>
<td>12.9%</td>
</tr>
<tr>
<td>Moderators</td>
<td>12.1%</td>
<td>5.4%</td>
</tr>
<tr>
<td>Podium Senior Authors</td>
<td>30.6%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Podium Senior Authors</td>
<td>11.1%</td>
<td>7.1%</td>
</tr>
</tbody>
</table>
Poster #NM105
IDENTIFYING FACTORS RESPONSIBLE FOR MESH SLING RE-EXPLORATIVE SURGERY: THE CASE FOR BETTER SURGICAL TECHNIQUE
Andrew Margules, MD, Alyssa Greiman, MD, Eric Rovner, MD
Medical University of South Carolina
Presented By: Andrew Margules, MD

Introduction: Synthetic mid-urethral slings (MUS) have a well-documented record of safety and efficacy in the treatment of stress urinary incontinence. Removal or revision of MUS may, however, be necessary in the setting of obstruction, failure, pain or mesh exposure. Historically, such problems have been attributed to the mesh material, while little attention has been directed towards other potential factors. It is well established that adherence to proper surgical technique is a critical factor in minimizing postoperative complications. We reviewed our experience with sling revision procedures in order to evaluate the contribution of technical factors to the need for subsequent surgery.

Methods: A retrospective review was performed of all women who underwent revision or removal of a synthetic MUS at our institution between January 2016 and September 2018. Operative reports at re-exploration provided information regarding anatomic location, depth and tension of the sling. Additionally, a critical review of the original implanting surgeon’s operative and perioperative documentation was performed to identify evidence of potential technical contributions to the indication for surgical re-exploration.

Results: During this time period 61 consecutive women underwent incision or removal of a synthetic MUS. Prior operative reports were available for 44 women. The most common indications for revision were obstruction (68.8%), erosion (14.8%) and pain (9.8%). In 40 women (65.5%) there was either an intraoperative finding during the revision surgery to which the complication could be attributed or there was documentation suggestive of a contributing technical factor during the initial sling placement procedure. Among these 40 women, 22 (55.0%) were noted to have their sling either proximal or distal to the mid urethra, 18 (45.0%) oversuspended and 11 (27.5%) deep in the periurethral fascia. 5 women with obstruction or erosion had unambiguous descriptions of overtensioning or identified urinary tract injury in the operative note from their initial MUS implant procedure.

Conclusion: MUS reexploration cases often reveals evidence that initial implantation technique contributed to the subsequent need for revision. Such findings suggest that surgical technique can be an important factor in postoperative complications in MUS surgery. This underscores the importance of proper surgical technique and training during implantation of MUS.
Poster #NM106
PREVALENCE OF PELVIC FLOOR DISORDERS BETWEEN WOMEN IN METROPOLITAN VS NON-METROPOLITAN COMMUNITIES
Alexandra Carolan, MD¹, Nan Zhang, MS, BS¹, Kimberly Tay, BS², Christopher Wolter, MD¹, Aqsa Khan, MD¹
¹Mayo Clinic, Phoenix, AZ, ²University of Arizona College of Medicine, Phoenix, AZ
Presented By: Alexandra Carolan, MD

Introduction: We sought to evaluate the prevalence rates of pelvic floor disorders (PFD) in women in nonmetropolitan communities compared to women in metropolitan communities.

Methods: We accessed the cross-sectional national health survey data from the National Health and Nutrition Examination Survey (NHANES) from 2009-2010. These data were divided by geocodes into nonmetropolitan (50,000). Responses indicating moderate to severe symptoms reported by women 20 years and older were analyzed for the following conditions: urinary incontinence and nocturia (Kidney Conditions Questionnaire), bowel urgency and fecal incontinence (Bowel Health Questionnaire), and symptomatic vaginal bulge (Reproductive Health Questionnaire). Age-adjusted prevalence rates were estimated using the PROC SURVEYREG in SAS 9.3 and comparisons were made using logistic regression. A secondary analysis was completed analyzing prevalence rates between age groups (20-39, 40-59 and 60 years old or older).

Results: The survey was completed by 2,201 women in metropolitan and 302 women in nonmetropolitan communities. Prevalence rates of urinary incontinence and nocturia “a few times a week or more” were equivalent between metropolitan and nonmetropolitan groups (16.2% vs 14.6%, p=0.47), with stress incontinence being more common than urgency and other types of incontinence (about 40% for stress vs 23% for urge and 8% for other). Bowel urgency was much more common than fecal incontinence in the whole cohort. Women in metropolitan communities reported more bowel urgency than women in non-metropolitan communities (33.3% vs 26.8%, p=0.02) but similar prevalence rates of fecal incontinence (9.2% vs 9.0%, p=0.76). Prolapse symptoms were equivalent between the groups (2.4% in both). There was a marked and statistically significant increase in prevalence of each of the pelvic floor disorder symptoms with age. Collectively, 10.6% of women ages twenty to thirty-nine have at least one PFD compared to 27.8% and 39.6% of women ages forty to fifty-nine and sixty and older, respectively (p<0.001).

Conclusion: Pelvic floor disorders are prevalent and increase significantly with age. There is no significant difference in the prevalence of pelvic floor disorders comparing women in non-metropolitan and metropolitan communities. The next steps will be to evaluate the access to services available to women in these communities to diagnose and manage these bothersome conditions.
Poster #NM107
INTRADETRUSOR ONABOTULINUMTOXINA INJECTION FOR REFRACTORY BLADDER SPASMS BEFORE VESICOVAGINAL FISTULA REPAIR
Evan Sirls¹, Rachel Pfannes², Larry T Sirls³
¹Beaumont Health, ²University of Michigan, ³Beaumont Health, Oakland University William Beaumont School of Medicine
Presented By: Evan Sirls

Introduction: To report on the use of preoperative intradetrusor onabotulinumtoxin A in women who had severe bladder spasms and early failure after prior surgical repair of vesicovaginal fistula (VVF).

Methods: Case report of 2 women who failed 2 or more surgical repairs of VVF secondary to refractory bladder spasms. The use of intradetrusor onabotulinumtoxin A preoperatively to control these bladder spasms with resultant successful fistula repair is described.

Results: MR was a 44-year-old female, body mass index (BMI) = 27, non-smoker, non-diabetic, no radiation history who had abdominal hysterectomy, a recognized bladder injury with a concurrent open repair. She reported severe bladder spasms in the postoperative period with the foley catheter. She developed a VVF that subsequently failed both an open abdominal repair and vaginal repair. Bladder spasms again were noted post-operatively with the foley catheter. JT was a 44-year-old female, BMI = 30, non-smoker, non-diabetic, no radiation history who had an abdominal hysterectomy with postoperative vaginal fistula. She experienced a failed vaginal repair and subsequent failed abdominal repair. She also described severe postoperative bladder spasms with the foley catheter. Common to these two patients is the history that after each surgical procedure – the hysterectomies and subsequent fistula repairs – these patients reported severe, refractory bladder spasms. Their symptoms were urgency, frequency and suprapubic pain with the foley catheter in place, with or without leakage around the catheter. Both women had aggressive management with oral agents and BO suppositories. Patient treatment began with intradetrusor onabotulinumtoxinA injections 4-6 weeks before their next surgical fistula repair. MR is 4 years s/p vaginal approach VVF repair, has healed and has not required any subsequent overactive bladder (OAB). JT is 2 years s/p robotic approach VVF repair and has healed without need for subsequent OAB treatment.

Conclusion: Severe bladder spasm may cause vesicovaginal fistula repair failure. We report on two women who failed at least two prior fistula repair surgeries secondary to post-operative bladder spasms who responded to onabotulinumtoxinA injection and then had successful fistula surgery.
Introduction: To examine trends in the financial relationship between biomedical companies and leaders in female pelvic medicine and reconstructive surgery during the first four full calendar years since the implementation of the Sunshine Act. Methods: All accredited urologist and urogynecologists, with specialization in female pelvic medicine and reconstructive surgery, were identified using the database downloaded off of the American Board of Medical Specialties website. Program directors and department chairs of the affiliated institutions were determined using the residency program or department websites. Journal editors who practice in the U.S. were identified using the SCImago Journal Country Rank website. All identified individuals were categorized by urology or urogynecology and AUA region based on the information stated on their corresponding websites. Payment data for each individual from 2014-2017 was accessed using the CMS Open Payments website, and statistical analyses were performed to elucidate trends based on gender, position, medical specialty, AUA region, payment type, and overall payments over time. Results: 580 doctors were identified and searched through the CMS open payment website. Of the 580, 539 urologists and urogynecologists had their information available. 90.5%, 87.0%, 82.9%, and 83.1% received some sort of payment in 2014, 2015, 2016, and 2017 respectively. Total payments for all doctors decreased from 2014 to 2015, before increasing each year from 2015-2017. Consulting payments decreased in all year from 2014-2016, with a modest increase from 2016 to 2017. Food and beverage payments decreased across all years analyzed. Overall research payments increased across all years. When comparing men to women, men had a higher median amount of money received in every year. When comparing urologists to urogynecologists, urologists had a higher median amount of money received in every year. Conclusion: The Sunshine Act was passed in part to promote transparency of the physician-industry relationship. The proportion of urologic and urogynecologic doctors accepting payments between 2014 and 2017 did decrease, possibly due to increased public scrutiny. This scrutiny may have contributed to the general decrease in both food and consulting yearly payments and the increase in yearly research payments.
Poster #NM109
MESHMERIZED: DOES THE LITERATURE SUPPORT THE MESH HYPE?
Grace Chen¹, Carrie Stewart², Karyn Eilber, Principle Investigator³
¹Dept. Urology, The Ohio State University College of Medicine, ²Dept. Urology, Cedars-Sinai Medical Center, ³Dept. Urology, Cedars-Sinai Medical center
Presented By: Grace Chen

Introduction: Following the 2008 U.S. Food Drug Administration (FDA) public health notification regarding serious complications associated with transvaginal placement of surgical mesh in the repair of pelvic organ prolapse and stress urinary incontinence, a number of studies have been published to evaluate these claims. We sought to systematically review the evidence surrounding the efficacy and safety of transvaginal mesh in the management of pelvic organ prolapse (POP) and stress urinary incontinence (SUI).

Methods: We performed a comprehensive PubMed search of all English-language articles published between January 2010 and September 2018 on outcomes and complications of transvaginal mesh use for pelvic organ prolapse and stress urinary incontinence. The search terms used included “transvaginal mesh,” “mesh extrusion,” “pelvic pain,” and “dyspareunia.” Each abstract was evaluated for relevance. Based on the most complaints cited in litigation, we examined the following complications more closely: mesh exposure, pelvic pain, and dyspareunia.

Results: Our literature search returned 643 total titles, of which 75 were deemed relevant and included in the final review. These included 6 randomized controlled trials, 37 retrospective cohort studies, and 32 prospective cohort studies. Among these studies, the average rate of complications was 8.8% for mesh exposure, 10% for persistent pelvic pain, and 10% for dyspareunia. 38 articles concluded that the use of transvaginal mesh was safe and effective with patient cure rates above 90% and acceptably low complication rates. The remaining articles concluded that further long-term follow-up was needed to conclusively determine the safety of transvaginal mesh. 4 studies determined that sexual impairment was increased after mesh placement, while 3 studies found that there was no deterioration in sexual function, with 1 concluding that there was significant improvement in quality of life following mesh insertion.

Conclusion: The majority of recent studies conclude that transvaginal mesh is safe and effective. Vaginal mesh extrusion, persistent pain, and dyspareunia are the three most common complications evaluated in the literature. Mesh exposure was the most common complication to be examined in the literature, but only a small percentage of these were symptomatic and required re-operation.
Poster #NM110

BACTERIAL BIOFILMS FORM AND PROGRESS ON INDWELLING URINARY CATHETERS IN PATIENTS OVER TIME

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Presented By: Glenn T. Werneburg, MD, PhD

Introduction: Biofilm formation on urinary catheters is common and consists of adherent bacteria and their metabolic products, as well as host components. Biofilms allow bacteria to resist both antibiotics and host defense mechanisms. Biofilm formation on urinary catheters is an early and critical step for the pathogenesis of catheter-associated UTI, the most commonly reported hospital acquired infection. We sought to determine the catheter locations of onset and progression of biofilm formation.

Methods: Urinary catheters were collected from outpatient and inpatient medical facilities from 0-5 weeks indwelling time. Catheters were then analyzed using spectrophotometry. Specifically, catheters were sectioned and stained with crystal violet, and excess dye was rinsed away. Adherent crystal violet, which represented adherent biofilm, was then dissolved in acetic acid, and the concentration was quantitated relative to controls using a spectrophotometer.

Results: 33 urinary catheters were collected: 10 in week 1, 6 in week 2, 3 in week 3, 8 in week 4, and 6 in week 5. 26 of the catheters were collected from male patients and 7 were collected from female patients. Biofilms progressed throughout the catheter over the 5 weeks indwelling time included in this study (Figure). The distal end of the catheter was predominantly stained relative to the proximal side. Consistently throughout indwelling times, the balloon of the catheter showed intense staining indicating significant biofilm adherence.

Conclusion: Biofilms progressed as a function of indwelling time, and were detected following as little as 1 day indwelling time. The distal portion of the urinary catheter as well as the balloon, were the locations of biofilm predominance. These findings will inform the design and production of novel urinary catheters, which may benefit from focusing novel bactericidal strategies on the distal as well as balloon portions of the catheter. Importantly, our findings suggest that biofilm formation may have a multimodal etiology, and that sterile insertion technique may prevent early proximal biofilm formation, but may not restrict distal growth. Future studies will determine whether biofilm proliferation is affected by patient sex, and determine the bacterial species responsible for biofilm formation.
Poster #NM111

URINARY TRACT INFECTIONS: LISTENING TO THE PATIENTS. EMPLOYING LARGE-SCALE SOCIAL MEDIA ANALYTICS TO UNDERSTAND PUBLIC KNOWLEDGE AND EXPERIENCE

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Presented By: Gabriela Gonzalez, BS

Introduction: Characterizing women’s perceptions of urinary tract infections (UTI) helps patients achieve a better understanding of their disease and increases the likelihood of treatment success. Focus groups, interviews, and surveys are designed by providers and limited by their sample size. Online-community research allows for an enormous, international and unbiased sample, allowing researchers to hear authentic patient experiences. Analyzing thousands of posts, we identified shared emotions, prevention strategies, alternative therapies, and knowledge gaps regarding UTIs.

Methods: We collected 83,572 posts from 863 websites used internationally by collaborating with Treato, a social media data mining service, which combines search terms with Java-based natural language processing. From the randomized dataset, 200 posts were qualitatively analyzed using grounded theory to identify preliminary themes. To complement the qualitative analysis and validate a new computational technique, we concurrently applied Latent Dirichlet Allocation (LDA) probabilistic topic modeling to the full dataset for theme discovery in the entirety of the posts.

Results: Seven preliminary themes with sub-themes were identified. Users trust online communities and posts are not subject to the Hawthorne effect. Online forums share a dynamic source of information and encouragement as peers validate symptoms and feelings and advise on treatments. The diversity of posts reflects the breadth of variation in UTIs from symptoms to therapies. Regarding recurrent UTIs especially, women are frustrated and feel unheard by their providers, turning to homeopathy for possibilities. There is much information shared on behavior modification for prevention: post-coital practices, hydration, and hygiene. Women share experiences with various antibiotics and discuss diagnostic tests. There is a strong understanding of complications of untreated UTIs and fear surrounding lack of treatment. Barriers to accessing care and confusion about care permeate in many posts. There is a desire for knowledge acquisition in all aspects.

Conclusion: In social media networks, patients feel supported online, users validate feelings and confirm symptoms. Providers can use this data to identify common misconceptions and improve knowledge-sharing with patients leading to improved patient satisfaction and better care through optimal communication and genuine shared-decision making.
Poster #NM112
PREDICTORS OF FEMALE SEXUAL DYSFUNCTION IN INTERSTITIAL CYSTITIS/BLADDER PAIN SYNDROME, OTHER CHRONIC PAIN CONDITIONS AND HEALTHY CONTROLS IN THE MAPP RESEARCH NETWORK
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Presented By: Renee Rolston, MD

Introduction: Female sexual dysfunction (FSD) is associated with lower quality of life (QoL) in interstitial cystitis/bladder pain syndrome (IC/BPS). Our objectives were to: 1) compare the prevalence of FSD among IC/BPS, other non-urologic chronic pain conditions (positive controls, PCs) and healthy controls (HCs); 2) evaluate the role of psychosocial and urologic factors in FSD in all three cohorts; 3) correlate longitudinal changes in FSD with changes in IC/BPS symptoms.

Methods: Cross sectional analysis was performed in female participants enrolled in the Multidisciplinary Approach to the Study of Chronic Pelvic Pain (MAPP) Research Network. FSD was defined as a score

Results: There were 233 patients with IC/BPS, 156 PCs, and 233 HCs. IC/BPS participants reported lower mean FSFI scores than HCs and PCs (p=0.001). The proportion with FSD was higher in the IC/BPS group (65%) than PCs (35.7%) and HCs (14.7%) (p=0.001). Psychosocial factors such as depression, anxiety, personality traits and stress, and overall pain and urinary severity were shown to be associated with FSD in univariate analysis. Psychosocial factors, urinary and pain severity continued to be associated with FSD, after adjusting for age, spouse, ethnicity, number of genital sites with pain, and employment status (Table 1). Psychosocial variables were not differentially related to sexual dysfunction among IC/BPS, PC or HC cohorts. Genital pain, number of genital sites with pain and vulvodynia were highly correlated with FSD. Changes in IC/BPS pain or urinary symptoms did not correlate with changes in FSFI scores.

Conclusion: FSD is largely impacted by psychosocial risk factors and genital pain. Assessment of and targeting treatment to these risk factors may improve sexual function and QoL in IC/BPS.

Poster # NM113 - WITHDRAWN
Poster #NM114
PATTERNS AND PREDICTORS OF RECURRENCE OF HUNNER LESIONS IN PATIENTS WITH HUNNER TYPE INTERSTITIAL CYSTITIS
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Presented By: Ji-Yeon Han, MD PHD

Introduction: To evaluate the recurrence patterns and the predictors of recurrence of Hunner’s lesion in patients with Hunner type interstitial cystitis (IC)

Methods: We retrospectively analyzed a prospectively collected data from IC patients as the set protocol. The inclusion criteria included the patients aged > 20 years with symptoms lasting more than 6 months who were diagnosed and underwent transurethral resection for Hunner’s lesion. The symptom was defined as Pelvic Pain and Urgency/Frequency Patient Symptom Scale (PUF) ≥13, O’Leary-Sant symptom index (IC-Q) ≥24 and Visual Analogue Scale (VAS) pain score ≥4 points. The patients were followed-up every 3 month. Patient’s symptom was reevaluated using PUF, IC-Q, VAS pain score, 3-day voiding diary and cystoscopy.

Results: A total of 91 patients were analyzed. The mean follow-up period was 13.3±12.6 months (range, 6-60 months). The locations of Hunner’s lesion were 55.8% on the posterior wall, 18.0% at dome, 14.3% at right lateral wall and 11.9% at left lateral wall except trigone area. After the surgery, 58.2% (53/91) of patient had recurred symptoms and Hunner’s lesion on cystoscopy at a mean time of 14 months after surgery. At follow-up cystoscopy, 59.4% (60/101) of recurred Hunner’s lesion were presented at the surround area of primary site, 21.8% (22/101) in primary site and only 18.8% (19/101) patients had the recurred Hunner’s lesion at other sites. In multivariate analysis, only higher PUF bother score (odds ratio 1.142, 95% CI 1.016-1.284, p = 0.026) was the only factor that predicted recurrence of Hunner’s lesion and PUF bother score ≥ 7.5 was predictive cutoff value for recurrence of Hunner’s lesion with ROC area of 0.690 (sensitivity = 67.9%, specificity = 62.5%).

Conclusion: We found that Hunner’s lesion recurred the surrounding the site of the primary sites and multivariate logistic regression revealed the baseline higher PUF bother score was the only predictor for recurrence of Hunner’s lesion. These findings might consequently lead to better surgical results and to more reduction of postoperative recurrence.
Poster #NM115
COST OF RECURRENT URINARY TRACT INFECTION MANAGEMENT IN THE OUTPATIENT SETTING: A TIME-DRIVEN ACTIVITIES-BASED COSTING MODEL
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Presented By: Melissa Markowitz, BA

Introduction: Outpatient recurrent urinary tract infection (rUTI) management comprises a significant proportion of urologists’ practice. Although this disease process’s fiscal impact has been studied on a population-wide level, current studies fail to detail costs on a clinical scale. Time-driven activities-based costing (TDABC) has become an established accounting tool by which healthcare delivery costs are calculated using an activity’s capacity cost rate (CCR) and the approximate time needed to complete each task. Here, we employ this model to derive the costs associated with an outpatient UTI encounter, with the aim of identifying targets for maximizing value in care delivery.

Methods: Each encounter was defined as an outpatient visit with one associated telephone follow-up for an established rUTI patient. We devised process maps detailing common patient pathways and averaged the time required to accomplish each step, as reported by clinic staff. A human resources group obtained CCR for personnel as a composite of factors including salary, benefits, and malpractice insurance. Clinic space CCR factors included square footage utilized, rent, and operating costs. Total costs in dollars were divided by annual available minutes. Costs per assay for urinalysis and bacterial urine culture were similarly obtained.

Results: Total costs for the UTI encounter ranged from $132.75 to $275.87. A single telephone encounter by ancillary staff and a physician to review a positive urine culture accounted for $14.94-$34.20, or 5.4-12.4% of the entire encounter cost. Urinalysis and culture cost $60.00 and $42.50, or 21.7 and 15.4% of the total sum, respectively. Personnel and space CCR ranged from $0.72-2.95 per minute for clinical assistants and urology attending physicians and $0.03-0.42 per minute for nursing stations and front office space, respectively. Time to complete tasks ranged from one minute to review culture data to 30 minutes for a physician to interview and examine a patient.

Conclusion: These data demonstrate a substantial financial burden of delivering care to rUTI patients in the outpatient setting. Surprisingly, diagnostic assays comprised a sizable proportion of total costs, as did subsequent telephone follow-ups to communicate results prescribe treatment. By eliminating these expenditures, the use of point-of-care rapid diagnostic UTI testing may provide an exciting opportunity for future value-based interventions along our pathway.
Introduction: Recommendations for the management of women with suspected uncomplicated lower urinary tract infections (UTIs) include presumptive antibiotics (abx), with or without obtaining a urine culture (UCx). However, with increasing abx resistance, efforts to decrease abx usage are vital. We instituted this study at Columbia University Medical Center Student Health Services (CUMC-SHS) to determine if presumptive treatment of women with suspected uncomplicated UTIs is contributing to unnecessary abx usage.

Methods: We retrospectively reviewed all non-pregnant female patients presenting to CUMC-SHS with UTI symptoms from 12/2016-5/2017 who had UCx sent. Clinical information and presenting symptoms, in addition to office urine dip (Udip) and UCx results, were reviewed. Patients with upper urinary tract involvement or already on abx were excluded. Chi-squared and Fischer's exact tests were performed to compare patients with a positive and negative UCx.

Results: A total of 67 patients were included for analysis. Presenting symptoms included dysuria (59/60, 98%), frequency (41/45, 91%), urgency (27/33, 51%), gross hematuria (17/33, 51%), and suprapubic pain (20/53, 38%). Many patients had symptoms for less than or equal to 24 hours before presentation (32/64, 50%). Office Udip was performed on 33/67 (49%) patients, the results of which were negative in 9%. Dips were positive for leukocytes (88%), blood (79%), and nitrites (18%). All patients were prescribed abx, most commonly nitrofurantoin (82%). Culture results were negative in 29/67 (43%). The most common pathogen on positive UCx was E. coli (84%). There were no significant differences in duration of symptoms, presenting symptoms, or Udip results between patients with a negative UCx and those with a positive UCx.

Conclusion: Although current recommendations state standard of care for women with suspected uncomplicated UTI is presumptive abx, our study at a health sciences campus found a significant negative UCx rate, representing a cohort of patients who were exposed to abx unnecessarily. Additionally, we found no difference in presenting symptoms or Udip results to help distinguish patients with a positive UCx. It is now current practice at CUMC-SHS to recommend urinary analgesics and to wait for UCx results prior to initiating abx. We believe the findings of this study suggest a cohort in which abx usage can be reduced.
Poster #NM117
IDENTIFICATION OF INTERSTITIAL CYSTITIS AND CHRONIC PROSTATITIS PATIENT SUBTYPES USING K-MEANS CLUSTER ANALYSIS OF THEIR UROLOGIC AND NON-UROLOGIC PROFILES
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Presented By: James Thu, MD

Introduction: Patients with interstitial cystitis (IC/BPS) and chronic prostatitis (CP/CPPS) are heterogeneous and present with diverse urologic and non-urologic profiles. This heterogeneity suggests the possibility of identifying patient subtypes within the clinical population.

Methods: We used k-means clustering to discover patient subtypes in 211 patients (159 females and 52 males) who sought care of their IC/BPS or CP/CPPS between 2010 and 2017. Variables included in the k-means clustering were the severity of urologic pain (0-10 numeric rating scale), urinary urgency (0-10), frequency (0-10), non-urologic pain (0-10), and either a yes or no to each of the six UPOINT domains (U=urinary, P=psychosocial, O=organ specific, I=infection, N=neurological, T=tenderness). One-way ANOVA and chi-square tests were used for continuous and categorical variables respectively to test for differences between clusters. p<0.05 was considered a significant difference.

Results: k-means clustering discovered 3 clusters of IC/BPS and CP/CPPS patients: (1) a systemic cluster with significant systemic pain and manifestation beyond the pelvis [black, n=62], (2) a severe pelvic cluster with more severe pelvic pain and urinary symptoms [red, n=82], and (3) a mild pelvic cluster with milder pelvic pain and urinary symptoms [blue, n=67]. The systemic cluster was more likely to be female (p=0.015), younger (p=0.047), had higher pelvic pain scores (p<0.001), higher urinary symptoms scores ICSI (p<0.001) and ICPI (p <0.001), higher non-urologic pain scores (p<0.001), and more widespread somatic symptoms (p<0.001). The systemic cluster was more likely to have migraine headache (p<0.001), irritable bowel syndrome (p=0.003), fibromyalgia (p<0.001), chronic fatigue syndrome (p<0.001), depression (p<0.001), and anxiety attacks (p<0.001) compared to the severe pelvic and mild pelvic clusters. The severe pelvic cluster has comparable pelvic pain and urinary symptom scores to the systemic cluster but without the systemic manifestation. The mild pelvic cluster has less pelvic pain and urinary symptom scores compared to the severe pelvic cluster.

Conclusion: A new symptom-based classification has identified 3 clusters of IC/BPS and CP/CPPS patients. These patient subtypes have different presentation. Future studies are needed to elucidate the differences in pathophysiology among the clusters.
Poster #NM118

VULVODYNIA IS A RISK FACTOR FOR WORSENING PAIN AND GENERALIZED NON-PELVIC PAIN IN FEMALE PATIENTS WITH IC/BPS IN THE MAPP RESEARCH NETWORK

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Presented By: Christine Horton, MD, MSCR

Introduction: About 20% of interstitial cystitis/bladder pain syndrome (IC/BPS) patients have a diagnosis of vulvodynia. There has not yet been a longitudinal assessment of those affected by vulvodynia and IC/BPS and whether these groups act as a more ‘centralize pain phenotype’ compared to IC/BPS patients without vulvodynia. The primary study objective is to compare patterns of symptom change of those affected by vulvodynia and IC/BPS versus those affected by IC/BPS without vulvodynia. Secondary objectives include a comparison of pain mapping progression as well as comparison of groups with a clustering technique - noting symptom changes.

Methods: Data were obtained from the MAPP cohort with evaluation of longitudinal outcomes. Longitudinal analysis included data from visits 3-25 over a 12-month period. Mixed effects models accounting for the clustering of repeated measures were fit for the continuous scales consisting of Genitourinary Pain Index (GUPI), a composite pain score, and non-pelvic sites on the Body Pain Index (BPI) providing model-based estimates of average scores over the 12-month period for those with and without vulvodynia. Secondary analysis evaluated pelvic pain sites on BPI and overall BPI (combined pelvic and non-pelvic pain sites) scoring for both groups. Clustering technique was used to assess overall improvement, stability or worsening of symptoms within each group over the time period.

Results: Female IC/BPS patient with vulvodynia on average scored higher on the pain indices on GUPI, total severity indices on the GUPI and composite pain measures compared to IC/BPS patients without vulvodynia. There was no statistically significant difference in urinary symptoms between groups or pelvic pain sites on BPI. Groups had similar findings when evaluated via cluster technique showing similar rates of improvement, stable and worsening symptoms across measures.

Conclusion: Patients with vulvodynia and IC/BPS had worse measures of GUPI pain scores, GUPI total severity scores and composite pain measures compared to those with IC/BPS alone. Patients with vulvodynia and IC/BPS were similar on widespreadness of pain outside the pelvis as well as sites restricted to the pelvis compared to those with IC/BPS alone. The presence of vulvodynia had no apparent impact on longitudinal IC/BPS symptom trends.
Poster #NM119
INCIDENCE AND TREATMENT OUTCOME OF ATYPICAL URETHRITIS IN FEMALES WITH LOWER URINARY TRACT SYMPTOMS OR PELVIC PAIN
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Presented By: Michele Fascelli, MD

Introduction: Female patients complain of lower urinary tract symptoms (LUTS) or pelvic pain often in the setting of negative urine cultures and unremarkable cystoscopy. Urethritis from atypical organisms may play a role in these symptoms. Previous studies have reported incidence and improvement rates after antibiotic treatment. We examined the incidence of atypical bacteria, Ureaplasma urealyticum (U. urealyticum) and Mycoplasma hominis (M. hominis), in a larger cohort reporting LUTS/pelvic pain at our tertiary care center.

Methods: We examined charts of patients who presented with a diagnosis of dysuria, frequency, urgency, dyspareunia, bladder pain, or interstitial cystitis based on ICD codes over five years. Patients who had a M. hominus and U. urealyticum (M4) culture ordered were queried for demographics, clinical history, culture results, treatment regimen, symptom improvement, and were excluded if they had a positive urine culture at the time of the M4 culture.

Results: Of the 730 women with M4 cultures sent who reported LUTS or pelvic pain, 256 (35.1%) had a positive M4 culture. Pathogens identified included U. urealyticum (81.3%), M. hominus (5.9%) or both (12.9%). Age less than 50 was significantly associated with a positive M4 culture (p

Conclusion: Our cohort showed 35.1% of patients evaluated for LUTS/pelvic pain with an M4 culture showed evidence for atypical urethritis. Of those, 41.8% had symptom improvement following treatment with close to 20% LTFU. This reinforces previously published studies that endorse the testing and treatment of women for atypical urethritis in the setting of LUTS/pelvic pain. Few cultures were sent for sensitivities, but those that were showed high resistance to guideline recommended antibiotics suggesting empiric therapy may not be efficacious.
THE CLINICAL RATE OF ANTIBIOTIC CHANGE FOLLOWING EMPIRIC TREATMENT FOR SUSPECTED URINARY TRACT INFECTIONS

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Presented By: Jonathan Dokter, BS

Introduction: When treating urinary tract infection (UTI) urine culture delay forces clinicians to decide whether to start empiric antibiotics, possibly incorrectly. We evaluated empiric antibiotic use and subsequent change in a FPMRS practice. Methods: Patients (>18 yrs) with suspected UTI and urine culture from 1-2016 to 6-2016 were retrospectively reviewed. Exclusion criteria included indwelling catheter, institutionalized, recent urologic surgery, pregnancy, and urinary diversion. Patients with a positive culture (defined as > 10^3 CFU) were categorized by whether or not they were treated empirically. Empiric treatment was evaluated for associations with clinical-demographic data, symptoms and urinalysis (UA). Antibiotic change was evaluated with clinical-demographic data, urine culture results and resistance patterns. Statistical significance of differences between groups was assessed with chi-square or Fisher’s exact test for categorical variables and t-test for continuous measures.

Results: 916 urine cultures (636 patients) were included. 391 (43%) cultures were positive, and 164 (42%) were treated empirically. Clinical data including age, gender, BMI, history of diabetes mellitus, or immunosuppression did not differ between groups. Those treated empirically had more UTI symptoms (93% vs 58% P < 0.001), and UA abnormalities including positive nitrites (51% vs 29% P < 0.001), 3+ leukocyte esterase (27% vs 19% P = 0.002) and 3+ blood (13% vs 4% P = 0.005). The most common bacteria in both groups were E. coli, followed by Klebsiella and Enterococcus. The most common empiric treatments were Macrobid (24%), TMP-SMX (22%), ciprofloxacin (15%) and doxycycline (13%). Of those treated empirically, 42/164 (26%) required an antibiotic change. Antibiotic change was associated with immunosuppression (12% vs 2% P = 0.027) and > 3 antibiotic resistance (33% vs. 20%, P = 0.039). Patients requiring empiric antibiotic change also had higher rates of fluoroquinolone (50% vs 30% P = 0.016), monobactam (19% vs 7% P = 0.042) and TMP-SMX (52% vs 19% P < 0.001) resistance.

Conclusion: Almost half of patients presenting to a FPMRS practice with clinical UTI were treated with empiric antibiotics. Factors associated with empiric treatment included clear UTI symptoms and abnormal UA. Antibiotic change was driven largely by bacterial resistance. New technologies that allow rapid bacterial identification and sensitivity in urine may greatly improve patient care.
Poster #NM121
PREDICTORS OF BLADDER CAPACITY IN INTERSTITIAL CYSTITIS/BLADDER PAIN SYNDROME
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Presented By: Whitney R. Smith, MD

Introduction: This study represents an update to our earlier chart review wherein we evaluated the relationship of urological and non-urological associated syndromes (NUAS) to anesthetic bladder capacity (BC) in a large cohort of IC/BPS patients who had undergone therapeutic bladder hydrodistention.

Methods: This is a retrospective single institution chart review of IC/BPS female patients collected between October 2011 and March 2018. The inclusion criteria was women 18 years or older with IC/BPS according to AUA guideline who underwent therapeutic anesthetic bladder hydrodistention. Demographics, clinical data, lower urinary tract symptoms, ICSI (Interstitial Cystitis Symptom Index) and ICPI (Interstitial Cystitis Problem Index) scores, and non-urological associated syndromes (auto-immune diseases, endometriosis, and psychiatric disorders) were correlated with BC. To analyze the data, multi-linear regression was performed to establish the correlation as well as the p-value for statistical significance.

Results: From 287 female initially enrolled, 217 were included in the final analysis. The average BC under anesthesia was 815.16 (+/- 320.06). There was a positive correlation between BC and dyspareunia, depression, sleep disorder, endometriosis, and overall number of pain/psychiatric/auto-immune conditions. On the other hand, there was an inverse correlation between bladder capacity, nocturia (4+/night), ICPI score, ICSI score, and age. Depression (p=

Conclusion: Patients with lower bladder capacity were older and had higher ICPI/ICSI scores. Chronic syndromes such as endometriosis and depression were directly associated with higher bladder capacity. The analysis of this large cohort of patients reinforce the concept that patients with low BC tend to have bladder-centric disease, whereas patients with high BC tend to have a systemic pain syndrome phenotype. Further studies are being conducted to determine the genetic profile of these patients.
Poster #NM122

URINE PH VARIABILITY OVER TIME IN WOMEN WITH RECURRENT URINARY TRACT INFECTIONS

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Presented By: Jacqueline Chavez

Introduction: Little is known about the variation of urine pH in older individuals. This can be relevant for the efficacy of antibiotics administered in the treatment of recurrent urinary tract infections (RUTIs) and possibly for preventive measures. We report on changes in urine pH in infected and uninfected urine samples from women with RUTIs.

Methods: An IRB-approved, prospectively maintained database of women with antibiotic-refractory RUTIs managed with electrofulguration (F) at a tertiary care center was reviewed. Included were women with at least 6 months follow-up post-F, and an electronic medical record (EMR) documenting complete list of medications, urinalysis with urine pH at time of urine culture to determine infected (I) versus non-infected (NI) status, and creatinine and urea levels at the time of the urinalysis. Mixed model analysis was used to assess for significant association of positive culture, creatinine, and urea with pH, using a compound symmetric covariance structure to account for the correlation of multiple pH measurements from the same patient.

Results: From 2005-2017, 283/477 patients met study criteria. A total of 926 urine pH and culture results were studied, 288 I and 638 NI. Average number of urine cultures per woman was 3 ± 2.6 (1-16). Mean age was 64 (18-92) years, and 95% were Caucasian. Mean follow-up was 24 (12-144) months. Mean creatinine level was 0.84 ± 0.28 mg/dL (0.37-2.49), and mean urea level was 17.1 ± 8.1 mg/dL (8-58). Renal failure (GFR<15 mg/dL were observed only at urine pH 30 mg/dL were only observed at urine pH

Conclusion: Despite variability in urine pH for an individual, this large longitudinal study comparing urinary pH in women with infected and non-infected urine samples indicates no median urinary pH difference and no major influence in women with normal kidney function.
Poster #NM123
SMALL FIBER POLYNEUROPATHY IN HUNNER LESION AND NON-HUNNER LESION BLADDER PAIN SYNDROME
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Presented By: Esther Han, DO

Introduction: The objective of this study was to determine whether small fiber polyneuropathy (SFPN) is more prevalent in Non-Hunner lesion bladder pain syndromes (NHLBPS) compared to Hunner lesion BPS (HLBPS) given SFPN and NHLBPS are more systemic disease processes.

Methods: 20 patients were recruited for this study (10 HLBPS, 10 NHLBPS). Both calf and thigh punch biopsies were performed on each patient. Biopsies were sent to Therapath Neuropathology for diagnosis of SFPN which is based off of quantification of the density of intraepidermal nerve fibers. Demographic, comorbidity, and Genitourinary Pain Index (GUPI) questionnaire data were collected. Data were analyzed using Jeffreys’ priors, Fisher’s exact, and Cochran-Armitage trend tests.

Results: The HLBPS group was significantly older than the NHLBPS group (62.7 vs 47.6, p = 0.0075). No significant differences were found in employment or relationship statuses, level of education, and comorbidities between groups. Some of the comorbidities included diabetes, Sjogren’s syndrome, chronic fatigue syndrome, fibromyalgia, irritable bowel syndrome, anxiety/depression, and neurological disorders. No significant differences were seen in SFPN positive results between NHLBPS and HLBPS (thigh p = 0.3250, calf p = 0.500). 5 thigh and 3 calf biopsies were positive in the NHLBPS group, and 3 and 2, respectively, in the HLBPS group. Only 1 positive biopsy was needed for SFPN diagnosis. No significant differences were seen between groups for GUPI responses except for questions 3 (“How often have you had pain/discomfort in any of these areas over the last week?”), 4 (“Number that best describes average pain/discomfort on the days you had it over the last week.”), and 9 (“If you were to spend the rest of your life with your symptoms just the way they have been during the last week, how would you feel about that?”). All were significantly more bothersome for the NHLBPS group (p=0.0043, 0.0135, and 0.0189).

Conclusion: Although NHLBPS is seen as a more systemic disease process compared to HLBPS, no significant difference was seen in SFPN diagnoses between the groups. GUPI responses were also similar except for 3 questions which favored NHLBPS for more bothersome symptoms.
**Poster #NM124**

**INTUBATED FLOW IN MEN MUST BE COMPARED TO FREE FLOW TO AVOID OVERESTIMATING THE DIAGNOSIS OF BLADDER OUTLET OBSTRUCTION**

Françoise A. Valentini, MD, PhD¹, Peter Rosier, MD, PhD², Philippe Zimmern, MD³, Pierre Nelson, PhD⁴

¹Hopital Rothschild, Paris, France, ²University Medical Center Utrecht, Utrecht, The Nederlands, ³UT Southwestern, Dallas, TX, ⁴Hôpital Rothschild, Paris, France

Presented By: Francoise A. Valentini, MD, PhD

**Introduction:** The gold standard for evaluation of bladder outlet obstruction (BOO) in men is the Abrams-Griffiths number (AG) [1] deduced from intubated flow (IF). Compared to maximum flow rate (Qmax) during FF, a reduced Qmax during IF is frequently observed while there is no significant obstructive effect of catheter or change in detrusor contractility. That behavior may be the consequence of a urethral reflex [2] inducing an overestimation of outflow obstruction. Nomograms based on free uroflows (FF) have been carried out using the VBN mathematical model of micturition, to develop an amended AG (corr-AG) allowing to evaluate BOO when Qmax.FF>Qmax.IF [2]. Our purpose was, to evaluate the category migration in AG nomogram in a large male population suspected of BOO, performing a FF before an IF with Qmax.FF/Qmax.IF >1.0.

**Methods:** Population comprised 447 men suspected of BOO performing a FF followed by an IF (urethral catheter 8F). Computations with the VBN model allowed a link between data of FF and IF [2]. BOO evaluation obtained from IF and AG was compared with corr-AG. Cut-off values for AG: non-obstructed NO (40 cm H2O) were the same applied for corr-AG. Cut-off values for Qmax.FF/Qmax.IF were tested with increment of 0.1 in the range 1.0 to 1.5.

**Results:** Exclusion criterion was voided volume 1.0. Increment for Qmax.FF/Qmax.IF was 0.1. To have significant populations, interval groupings were performed leading to 3 main intervals (1.0 à1.2, 1.2 à1.5 and > 1.5) The more important information was identification of an overestimation of obstruction; files potentially leading to unnecessary therapeutic action were categorized as obstructed (O) in ICS nomogram. Number of files migrating from O (with AG) to E or NO (with corr-AG) is described in the table.

**Conclusion:** When Qmax.FF is >Qmax.IF (FF performed before IF), this study of urodynamic tracings in men suspected of BOO confirms that overestimation of BOO can occur as soon as the ratio Qmax.FF/Qmax.IF is >1.2 and strongly considered when Qmax.FF/Qmax.IF is >1.5. 1-Int Urogynecol J 2013;24:461-7; 2-NAU 2018;37:1019-23
**Poster #NM125**

**PROSTATIC URETHRAL LIFT BASELINE PREDICTORS OF RESPONSE**

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Presented By: David O. Sussman, DO

**Introduction:** Prostatic Urethra Lift (PUL) has been studied extensively in clinical trials involving over 400 patients. It's been proven to provide rapid, significant and durable symptom relief and improvement in quality of life for patients suffering from lower urinary tract symptoms (LUTS) due to benign prostatic hyperplasia (BPH). Currently, urologists aim to better understand the baseline attributes that may predict a patient's response to PUL in a commercial setting. The objective of this study was to determine how baseline patient characteristics correspond with long-term treatment outcomes.

**Methods:** Predictors of response were determined by analyzing 5-year data from 140 subjects randomized to PUL in the largest L.I.F.T. study. Baseline demographics of the enrolled patient population included males ≥ 50 years of age, International Prostate Symptom Score (IPSS) ≥ 13, peak flow rate (Qmax) ≤ 12 mL/s and prostate volume 30-80 cc. The analysis was performed using two definitions of success: (1) a subject who did not require subsequent BPH surgery and was not on medication at 5 years; or (2) a subject who experienced an average IPSS improvement ≥ 4 points over 5 years. Univariate assessments of predictive value were conducted for baseline parameters including age, prostate volume, prostate-specific antigen (PSA), voided volume, post-void residual (PVR), bladder capacity, Qmax, body mass index (BMI), quality of life (QOL) and the individual IPSS elements.

**Results:** By 1 month, PUL patients experienced improvements in IPSS and QoL that was durable 5 years (IPSS 36%, QOL 50%, p<0.0001) post-treatment. Under the first definition of success, high Qmax, low PSA and low IPSS were predictors of response (Table 1). Under the second definition, high urgency and high hesitancy were predictors of response (Table 1).

**Conclusion:** BPH patients in the early stages of disease with preserved bladder function (higher Qmax, lower PSA, lower incomplete emptying score) may be more likely to be surgery and medication free at 5 years following PUL. Patients suffering with higher urgency and hesitancy symptoms may be more likely to have long term, significant symptom relief through 5 years. Overall, PUL patients demonstrate a high response rate, but there may be a window of treatment that produces an optimal response.

**Table 1: Predictors of Response**

<table>
<thead>
<tr>
<th>Predictor</th>
<th>Multivariate p value</th>
<th>Univariate p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peak Flow Rate (Qmax)</td>
<td>&lt;0.01</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>PSA</td>
<td>0.02</td>
<td>0.01</td>
</tr>
<tr>
<td>IPSS Q1: Incomplete Emptying</td>
<td>0.02</td>
<td>0.02</td>
</tr>
<tr>
<td>IPSS Q3: Intermitainty</td>
<td>NS</td>
<td>0.02</td>
</tr>
<tr>
<td>IPSS Q5: Weak Stream</td>
<td>NS</td>
<td>0.02</td>
</tr>
<tr>
<td>Quality of Life</td>
<td>NS</td>
<td>0.05</td>
</tr>
<tr>
<td>Prostate volume</td>
<td>NS</td>
<td>0.06 (NS)</td>
</tr>
</tbody>
</table>

**Responder definition 1:** Surgery free and no medication use at 5 years

**Responder definition 2:** IPSS ≥ 4 point average change over 5 years

- IPSS Q4: Urgency 0.02
- IPSS Q6: Hesitancy 0.04
Poster #NM126
PREDICTIVE FACTORS OF URINARY INCONTINENCE AFTER GREENLIGHT® LASER ENUCLEATION OF THE PROSTATE (GreenLEP)
Benoit Peyronnet, MD
University of Rennes
Presented By: Benoit Peyronnet, MD

Introduction: Post-operative, although it is most often transient, is usually regarded as a major drawback of endoscopic enucleation of the prostate. Several studies have aimed to assess de novo urinary incontinence and its predictors after Holmium Laser enucleation of the prostate. Greenlight® laser enucleation of the prostate (GreenLEP) has recently been described and has been shown as a promising way to perform endoscopic enucleation of the prostate. The aim of the current study was to assess de novo urinary incontinence after GreenLEP and to seek its predictors.

Methods: A retrospective multicenter international study was conducted including all GreenLEP performed by four surgeons at four institutions between 2011 and 2016. De novo urinary incontinence was defined by any postoperative urine leakage reported by the patient or by the use of any pads. Continence status was assessed at each follow-up visits. Surgeon’s experience was analysed as a continuous variable of consecutive cases performed. Univariate and multivariate logistic regression analyses were performed to seek predictive factors of post-operative urinary incontinence.

Results: Out of 416 patients included, 70 (17%), 32 (7.8%) and 12 (3%) had urinary incontinence at 1, 3 and 6 months respectively (figure 1). Physiotherapy from the first post-operative month appeared to enhance significantly continence recovery at 3 months in patients with post-operative urinary incontinence at 1 month (48% vs. 4.8% of continence recovery at 3 months in patients with and without physiotherapy; p<0.001). In univariate analysis considering only preoperative variables, prostate volume (OR=29.4; p=0.005) and surgeon’s experience (OR=0.4; p=0.05) were the two predictors significantly associated with incontinence at 1 month. In multivariate analysis adjusting for age, ASA score, and surgeon’s experience, prostate volume remained the only predictor of de novo incontinence (OR=26.4; p=0.009). When adding intraoperative and postoperative variables into the multivariate model, weight of specimen became the only predictor of urinary incontinence (OR=31; p=0.0001).

Conclusion: De novo urinary incontinence is common after GreenLEP but is transient in most cases. The strongest predictive factor of 1 month urinary incontinence is the quantity of prostate tissue removed which suggest an important role of prostate adenoma in the continence of male with larger glands.
COMPARISON OF ALPHA-BLOCKER PRESCRIBING HABITS BETWEEN UROLOGISTS AND PRIMARY CARE PHYSICIANS

Kevin J. Chua, BS1, Gen Li, PhD2, Matthew Rutman, MD3, Elias Hyams, MD3
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Presented By: Kevin J. Chua, BS

Introduction: Lower urinary tract symptoms (LUTS) due to benign prostatic enlargement (BPE) are highly prevalent in older men, and alpha-blockers (AB) are typically first-line medical therapy. While primary care physicians (PCPs) often prescribe initial AB therapy, it is not clear to what extent they use the varied agents on the market. In this study we sought to describe AB prescribing habits of PCPs and compare with those of urologists (URO).

Methods: Using the Medicare Part D Prescriber Public Use File database, we identified all URO and PCPs (defined as internal medicine [IM] and family medicine [FM] physicians) who prescribed an AB in 2015. ABs included terazosin, doxazosin, tamsulosin, alfuzosin and silodosin. We required a minimum claim count of 50 to avoid skewing of results by low prescribing physicians. We determined the proportion of URO and PCPs who predominantly prescribed one versus multiple AB, as well as different types of AB. Significance level was calculated with the chi-squared test for categorical variables and Mann-Whitney U test for continuous variables.

Results: In this Medicare Part D sample, 94% (9,327) of URO, 50% (54,253) of IM, and 61% (60,063) of FM prescribed an AB in 2015. Among AB prescribers, 89% (8,284) of URO, 61% (33,057) of IM and 55% (33,285) of FM had at least 50 claims. URO were more likely to prescribe multiple ABs compared with PCPs (Table 1). However, they were also more likely to dominantly prescribe one type of AB (Table 1). Alfuzosin and silodosin were prescribed by a higher percentage of URO (58% and 55% respectively) compared with IM (8% and 6% respectively) and FM (6% and 4% respectively).

Conclusion: The majority of PCPs prescribed ABs to Medicare patients during 2015. Urologists were more likely to prescribe diverse ABs, which is expected given their role in treating complex or refractory patients. Interestingly, URO were also more likely to dominantly prescribe a single AB, which likely reflects habitual prescription of and comfort with a single agent. As PCPs are involved in initial medical management of LUTs, further education of PCPs in their options for AB therapy should be considered.
Poster #NM128  
IMPACT OF DAY OF THE WEEK ON OUTCOMES OF BENIGN PROSTATIC HYPERPLASIA SURGICAL INTERVENTIONS  
Navin Sabharwal¹, Khaled Fareed², James Ulchaker², Bradley Gill¹,²  
¹Lerner College of Medicine, Cleveland Clinic Education Institute, Cleveland, OH, USA, ²Department of Urology, Cleveland Clinic Glickman Urological and Kidney Institute, Cleveland, OH, USA  
Presented By: Navin Sabharwal, BA

Introduction: Higher morbidity and mortality have been found among elective surgeries performed on Fridays, compared to other weekdays. This study investigated whether outcomes of transurethral BPH procedures varied by day of the week (DOW).

Methods: Retrospective review of all first time transurethral resection of the prostate (TURP) and photosensitive vaporization of the prostate (PVP) procedures performed by high volume surgeons (>75 procedures total) within a large healthcare system from 2001-2016 was performed. Multiple logistic regression was used to model the relationship between DOW and outcomes (Monday as reference), adjusting for covariates found to vary significantly (p<0.05) across DOW in univariate analyses. Continuous and categorical variables were analyzed using analysis of variance and Pearson's chi-squared or Fisher's exact tests, respectively.

Results: A total 2,932 procedures were included. Tuesday had the most procedures (n=778) and Wednesday the least (n=338). Age, surgeon experience (defined as years between graduating medical school and year of procedure), procedure type, surgeon identity, as well as history of smoking, EtOH abuse, CAD, and HTN varied significantly across DOW (Table 1). There were no cases of ICU admission, respiratory failure, or mortality during admission. Compared with Monday, the risk of repeat urologic operation was significantly lower on Tuesday (adjusted odds ratio (OR) 0.68, 95% confidence interval (CI) 0.49-0.93, p=0.02) and Friday (OR 0.66, 95% CI 0.48-0.91, p=0.01), and higher on Wednesday (OR 2.16, 95% CI 1.49-3.13, p<0.01). The risk of future urinary tract infection (UTI), defined as a diagnosis of UTI entered into the medical record, was significantly lower on Friday (adj OR 0.73, 95% CI 0.58-0.93, p=0.01), after adjusting for covariates. No significant differences in risk of hospitalization duration over 1 day, blood transfusion, 30 day mortality, or future development of overactive bladder (OAB) existed across weekdays.

Conclusion: Outcomes of transurethral BPH procedures varied across DOW, with lower rates of repeat urologic operation and future UTI development less likely on Fridays compared to Mondays. Identification of specific risk factors is warranted.

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Table 1. Baseline characteristics

<table>
<thead>
<tr>
<th></th>
<th>Mon (n=778)</th>
<th>Tue (n=778)</th>
<th>Wed (n=338)</th>
<th>Thu (n=432)</th>
<th>Fri (n=728)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (mean/SD)</td>
<td>72.4±8.9</td>
<td>72.4±9.4</td>
<td>71.9±8.3</td>
<td>71.7±8.5</td>
<td>72.1±8.9</td>
</tr>
<tr>
<td>EtOH abuser (%)</td>
<td>35.4±10.7</td>
<td>34.6±10.9</td>
<td>35.0±9.7</td>
<td>37.1±11.3</td>
<td>35.5±10.9</td>
</tr>
<tr>
<td>CAD (%)</td>
<td>19.7±7.3</td>
<td>19.6±7.5</td>
<td>17.9±5.9</td>
<td>21.4±7.0</td>
<td>19.3±7.2</td>
</tr>
<tr>
<td>HTN (%)</td>
<td>46.4±14.2</td>
<td>46.3±14.3</td>
<td>41.6±12.3</td>
<td>43.8±14.0</td>
<td>45.6±14.3</td>
</tr>
<tr>
<td>PVD (%)</td>
<td>6.8±3.2</td>
<td>6.9±3.3</td>
<td>6.2±2.9</td>
<td>6.5±3.1</td>
<td>7.1±3.4</td>
</tr>
</tbody>
</table>

Table 2. Outcomes across DOW

<table>
<thead>
<tr>
<th></th>
<th>Mon (n=778)</th>
<th>Tue (n=778)</th>
<th>Wed (n=338)</th>
<th>Thu (n=432)</th>
<th>Fri (n=728)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Repeat urologic operation (%)</td>
<td>29.9±10.6</td>
<td>29.9±10.7</td>
<td>27.9±9.5</td>
<td>31.2±11.0</td>
<td>30.1±10.4</td>
</tr>
<tr>
<td>30 day mortality (%)</td>
<td>1.7±0.7</td>
<td>1.9±0.8</td>
<td>1.5±0.6</td>
<td>1.9±0.8</td>
<td>1.7±0.7</td>
</tr>
</tbody>
</table>

# unable to determine OR due to n=0
Poster #NM129
PROSTATE REDUCING SURGERY AFTER UROLIFT: TECHNICAL RISKS OF HOLMIUM LASER ENUCLEATION OF THE PROSTATE (HoLEP) VERSUS TRANSURETHRAL RESECTION OF THE PROSTATE (TURP)
Tomy Perez, MD, Ali Syed, MD, James Steward, MD, Jenny Guo, Seth Teplitsky, Akhil Das, MD
Department of Urology, Thomas Jefferson University Hospital, Philadelphia, Pennsylvania
Presented By: Seth Teplitsky, BS

Introduction: The pursuit of minimally-invasive options for management of lower urinary tract symptoms (LUTS) from benign prostate hyperplasia (BPH) has been the subject of great interest for decades. UroLift, a technique in which monofilament sutures with nitinol capsular tabs are implanted across the prostate, has emerged as a popular option over recent years. It is an attractive option for men and urologists seeking to limit procedure time, prevent overnight hospitalization, limit the use of indwelling catheter, preserve sexual function, and avoid morbidity associated with more invasive options. However, in cases where unsatisfactory symptom relief or durability has been attained with UroLift, often the next step is either transurethral resection of the prostate (TURP) or holmium laser enucleation of the prostate (HoLEP). The objective of this report is to offer recommendations on which prostate reducing surgical technique should be used after UroLift.

Methods: A retrospective review was performed using an IRB-approved database of men who had undergone HoLEP at our institution. Cases in which either HoLEP or TURP were employed in men who had previously undergone UroLift were identified. Operative reports and intraoperative data were reviewed.

Results: Five cases in which post-UroLift prostate reducing surgery was performed were identified at our institution, three in which HoLEP was utilized, and two in which TURP was performed. HoLEP prostate gland size ranged from 64-84g as measured by transrectal ultrasound (TRUS). TURP prostate gland sizes were 60g and 70g. In one of three HoLEP cases, the presence of UroLift clips caused failure of the morcellator device requiring multiple changes of both the morcellator head and morcellator type, which in turn lead increased operative time. In comparison, no device challenges or other complications were experienced during the TURP cases.

Conclusion: In selecting a prostate-reduction technique following UroLift, TURP has the benefit of offering fewer technical challenges compared to HoLEP, thus limiting morbidity and operative time, and should therefore be considered the method of choice.
Poster #NM130
PROSPECTIVE ASSESSMENT OF THE SEXUAL FUNCTION AFTER GREENLIGHT™ENDOSCOPIC ENUCLEATION AND GREENLIGHT™180W XPS PHOTOSELECTIVE VAPORIZATION OF THE PROSTATE
Benoit Peyronnet, MD, Romain Huet, MD, Zine-Eddine Khene, MD, Gregory Verhoest, MD, Andrea Manunta, MD, Karim Bensalah, MD PhD, Sébastiren Vincendeau, MD, Romain Mathieu, MD
University of Rennes
Presented By: Benoit Peyronnet, MD

Introduction: Erectile dysfunction (ED) and low urinary tract symptoms (LUTS) are commonly associated in men over 50 years old. Minimally invasive approaches have spread significantly in the surgical treatment of LUTS due to benign prostatic hyperplasia (BPH). The aim of this study was to evaluate the impact of Greenlight™180W photoselective vaporization of the prostate (PVP) and endoscopic enucleation of the prostate (GreenLEP) on ejaculatory and erectile functions (EF).

Methods: Between January 2014 and September 2016, 440 men with LUTS or complications related to BPH with prostate > 80 grams and sexually active, underwent a PVP or GreenLEP performed by experienced surgeons at a single institution. International Index of Erectile Function-5 (IIEF5) score and the ejaculatory status were assessed in patients at baseline and at three, 12 and 24 months. The primary outcome was the change in erectile function (EF) (subjectively define as a postoperative decline of IIEF5 ≥ 5 points). Patients were matched in a 1:1 fashion according to preoperative trans-rectal ultrasonography prostatic volume (PV) and cardiovascular risk factors (smoking, diabetes and hypertension).

Results: One hundred patients in each group were included. Mean PV were 110 grams (95%CI: 101-118) and 107 grams (95%CI: 99-115) in GreenLEP and PVP groups, respectively (p=0.68). Mean total energy delivered in PVP group was 4.42 KJ/g (4.2-4.6). Re-treatment rate was required in nine patients (10.1%) in the PVP group, and none in the GreenLEP group. Mean PSA level and IPSS score were significantly lower in the GreenLEP group than in the PVP group at 3, 12 and 24 months (p<0.001). In multivariate analysis, age, history of coronary artery disease and surgical treatment with PVP were independent factors of IIEF5 decline.

Conclusion: After surgical treatment LUTS due to larger prostates, a significant improvement of IIEF5 was reported in GreenLEP despite a poor rate of antegrade ejaculation.
Poster #NM131
CAN WE AVOID TIME CONSUMING FREQUENCY-VOLUME CHART TO DIAGNOSE UNDERLYING PATHOPHYSIOLOGICAL MECHANISMS OF NOCTURIA IN SOME PATIENT POPULATIONS?
Benoit Peyronnet, MD, Siri Drangsholt, MD, Maria Arcila-Ruiz, MD, Rachael Sussman, MD, Ricardo Palmerola, MD, Dominique Pape, MD, Nirit Rosenblum, MD, Victor Nitti, MD, Benjamin Brucker, MD
New York University
Presented By: Benoit Peyronnet, MD

Introduction: A frequency volume chart (FVC) is generally recommended in patients with nocturia to identify the underlying pathophysiological mechanisms involved and tailor the treatment. However, the prevalence of the three main pathophysiological mechanisms (nocturnal polyuria, reduced bladder capacity, global polyuria) in a nocturic population has rarely been examined and the possible predictors of those mechanisms have never been assessed. The aim of the present study was to assess the relative prevalence of nocturnal polyuria, global polyuria and reduced bladder capacity in patients presented with nocturia and to seek predictive factors of nocturnal polyuria.

Methods: A retrospective chart review was performed of new patient encounters seen in a tertiary urology practice from May 2010 to September 2016 with the primary diagnosis of nocturia (ICD-9 788.43 or ICD-10 R35.1). Those who had history of treatment for a genitourinary malignancy, OAB predominant symptoms or history of recurrent UTIs were excluded. Patients who did not complete their 3 days FVC or had an FVC not interpretable were also excluded. The definitions of nocturnal polyuria and global polyuria were in line with the International Continence Society (ICS) standardization report. Reduced bladder capacity was defined as a maximum voided volume < 250 ml.

Results: One-hundred and nineteen patients met the inclusion criteria. The prevalence of nocturnal polyuria, reduced bladder capacity and global polyuria based on FVC analysis were 79.9%, 40.1% and 3.3% respectively with 35.3% having ≥2 mechanisms involved (mixed). In univariate analysis, there were two predictors of nocturnal polyuria: age ≥85 years (OR=6.9; p=0.02) and nocturia episodes ≥4/night (OR=7.2; p<0.001). In these two populations, prevalence of nocturnal polyuria reached 95.7% and 92.4% respectively. In multivariate analysis adjusting for age ≥85 years; BMI and gender, only nocturia episodes ≥4/night remained significantly associated with nocturnal polyuria (OR=6.6; p=0.001).

Conclusion: Nocturnal polyuria is the most prevalent pathophysiological mechanism of nocturia, observed in 79.9% of patients. Age ≥85 years and number of nocturia episodes ≥4/night are significantly associated with nocturnal polyuria, with prevalence reaching 95.7% and 92.4% in those two populations respectively.
Poster #NM132
THE CLINIQUE PASTEUR SCORE FOR SCREENING OF SEVERE OBSTRUCTIVE APNEA SYNDROME IN PATIENTS PRESENTED WITH NOCTURNAL POLYURIA

Vincent Misrai, MD1, Benoit Peyronnet, MD2, Benjamin Pradere, MD2, Jean-Louis Pepin, MD PhD3, Atul Pathak, MD PhD4, David Attias, MD4

1Clinique Pasteur, Toulouse, France, 2University of Rennes, 3University of Grenoble, 4Clinique Pasteur, Toulouse, France

Presented By: Benoit Peyronnet, MD

Introduction: The objective of this study was to assess the association between nocturnal polyuria and the occurrence of severe obstructive sleep apnea syndrome (OSAS) and to develop a new score to screen severe OSAS in patients presenting with nocturia due to nocturnal polyuria.

Methods: All patients referred for a nocturia to a single urologist over a 24-month period were explored by a 3-days frequency-volume chart (FVC). When nocturnal polyuria was demonstrated on FVC, patients were referred for sleep exploration. The following data were collected prospectively: age, BMI, HTA, morning headache, snoring, vigilance, daytime sleepiness and apnea-hypopnea index (AHI). Severe OSAS was defined by an AHI³30. Patients with severe OSAS were compared to patients without OSAS or mild to moderate OSAS. Using logistic regression analysis, clinical variables significantly associated with OSAS were identified. A score combining these variables was created and its internal validity was assessed using rate of prediction error and ROC curves.

Results: Of the 127 patients included, 113 (88.9%) were diagnosed with OSAS and among them 70 (61.9%) had a severe OSAS. In logistic regression analysis, the 3 variables significantly associated with OSAS were: gender, age (£70 or >70) and BMI (<25 or ≥ 25 and <30 or ≥30). The Clinique Pasteur score is presented in figure 1. The area under ROC curve was 0.74 . Using a threshold of 7 points or more in the internal cross-validation, the Clinique Pasteur score identified individuals at risk of severe OSAS with a positive predictive value (PPV) of 0.78 (95% CI 0.71-0.85) and a negative predictive value (NPV ) of 0.65 (95% CI 0.57-0.74).

Conclusion: The Clinique Pasteur score is a simple and easy clinical score for screening of severe obstructive apnea syndrome in patients diagnosed with nocturnal polyuria. Sleep explorations should be highly recommended for patients with Pasteur score ≥7. Despite a relatively high predictive accuracy, this score has to be validated in an independent population-based cohort.
Poster #NM133
ACUTE CARE EVENTS WITHOUT LONG-TERM IMPACT ON URINARY INCONTINENCE IN A GERIATRIC POPULATION
Siobhan M. Hartigan, MD1, Avantika Shah, MPH2, Emily Hollingsworth, MSW2, Casey Kowalik, MD3, Sophia Goodridge, MD1, Edward Vasilevskis, MD, MPH2, Sandra Simmons, PhD2, Melissa Kaufman, MD, PhD1, Roger Dmochowski, MD, MMHC1, W. Stuart Reynolds, MD, MPH1
1Vanderbilt University Medical Center, Department of Urology, Nashville, TN, 2Vanderbilt University Medical Center, Center for Quality Aging, Nashville, TN, 3University of Kansas Health System, Department of Urology, Kansas City, KS
Presented By: Siobhan M. Hartigan, MD

Introduction: Geriatric syndromes are particularly prevalent in hospitalized patients and are often exacerbated by acute care episodes. Approximately half of older adults will experience urinary incontinence (UI) during their hospital stay. UI may develop or worsen in the geriatric population during the acute event. This study aimed to evaluate variation in UI as geriatric patients recover from an acute care event.

Methods: Sample for this analysis was derived from an ongoing randomized controlled trial to reduce medication burden in hospitalized older adults (≥50 years) transitioning to skilled nursing facility (SNF) prior to returning to the community. Baseline demographic data were analyzed using descriptive statistics. Patients or surrogates were administered the International Consultation on Incontinence Questionnaire – Urinary Incontinence (ICIQ-UI) Short Form to assess UI at baseline and again at 7 and 90 days following SNF discharge. An ICIQ score of >0 indicated positive UI. Presence of UI at SNF discharge was determined via the SNF administered Minimum Dataset (MDS). The primary outcome was the change in UI from baseline at both 7 and 90 days after SNF discharge.

Results: A total of 86 patients (mean age 77.8 ± 10.4 years, 72.1% female) who had valid data at each time point were included in analysis. UI was present in 62 (72.1%) at baseline, 62 (72.1%) at 7 days, and 61 (70.9%) at 90 days following discharge from SNF. Only one subject developed new UI throughout the study period. Although the mean ICIQ scores reduced from 5.3 (±4.7) at baseline to 4.7 (±4.5) at 90 days post SNF discharge, there was no significant difference between time points for frequency, amount, or associated factors with leakage. MDS at SNF discharge only reported 26 (30.2%) positive for UI.

Conclusion: While UI is highly prevalent in a geriatric population, acute care events are not associated with developing or worsening UI in this sample. The presence and degree of UI is largely underreported by nursing staff at SNF and potentially undertreated. Closer attention to and treatment of UI by medical professionals in this population during the post-acute event period may help to decrease UI sequela during admission to and after SNF discharge.
SAFETY AND EFFICACY OF CHRONIC SUPPRESSIVE THERAPY WITH NITROFURANTOIN IN OLDER WOMEN WITH RECURRENT URINARY TRACT INFECTIONS

Navin Maredia, BS1, Bonnie C. Prokesch, MD2, Michael Fanning, PA-C2, Alana Christie, MS3, Philippe Zimmern, MD3
1University of Texas Southwestern Medical Center, Dallas, TX, 2University of Texas Southwestern Medical Center, Department of Internal Medicine, Dallas, TX, 3University of Texas Southwestern Medical Center, Department of Urology, Dallas, TX

Presented By: Navin Maredia, BS

Introduction: Nitrofurantoin (NF) is commonly used to treat recurrent urinary tract infections (RUTI). Despite minimal data, the Beers criteria has cautioned against long-term use of NF in geriatric patients. This study reviews the safety and efficacy of chronic suppressive therapy with NF in neurogenic and non-neurogenic post-menopausal women.

Methods: A query of the electronic medical record at a tertiary care institution yielded 11,200 charts of women aged 50-95 prescribed NF by over 75 providers from 2006-2018 in outpatient clinics. Charts from two primary urology providers prescribing NF therapy for at least 3 consecutive months were further analyzed. Demographics, reason for initiation of NF, dose of NF, duration of therapy, explanation of therapy interruptions, resistance to NF, occurrence of adverse effects of NF (liver disease, pulmonary fibrosis, and neuropathy), comorbid conditions, urine culture, and relevant lab/imaging results were recorded. The start and stop dates of chronic suppressive therapy were tallied from the medication lists and cross-referenced with notes documented by the provider for accuracy. Recorded number of months on chronic suppressive therapy were summed.

Results: Of the 221 patients included, 167 (77%) were prescribed 100mg of NF. The most common indication for chronic NF therapy was RUTI prophylaxis. 104 (47%) patients developed cultures resistant to NF but only 4 were switched to an alternative suppressive therapy. 88 (40%) patients on chronic NF therapy developed breakthrough UTI but only 10 were not restarted on NF again (4 patients due to NF resistance). Neurogenic patients had a higher occurrence of catheter use (p=0.0008) but non-neurogenic patients had an increased incidence of breakthrough UTI (p=0.0134). There was no difference in resistance rates between neurogenic and non-neurogenic groups (p=0.4361). None of the patients developed neuropathy, 1 developed liver dysfunction (elevated LFTs) after 3.5 years of therapy, and 4 developed lung symptoms after a mean use of NF for 3.5 years. None of the patients who developed chronic cough had chronic changes to their x-rays.

Conclusion: We conclude that post-menopausal women tolerate chronic NF suppressive therapy well with minimal risk of significant adverse events or development of antibiotic resistance. NF is a safe and effective in the management of chronic RUTI in this patient population.
Poster #NM135
COMPARISON OF CLINICAL MEASURES OF FRAILTY IN OLDER PATIENTS UNDERGOING FEMALE PELVIC MEDICINE AND RECONSTRUCTIVE SURGERY (FPMRS) PROCEDURES
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Presented By: Katherine Amin, MD

Introduction: In older patients, frailty is linked to poor surgical outcomes and increased risk of postoperative complications. Surgical and geriatric validated tools exist to assess frailty, however many indices, such as the gold-standard Fried Frailty Index (FFI), are cumbersome in a clinical setting. The Clinical Frailty Scale (CFS9) is a time-efficient, validated pictorial measure that may be a more practical alternative. We prospectively compared CFS9 against FFI in older adult patients undergoing female pelvic medicine and reconstructive surgery (FPMRS) procedures.

Methods: Adults ≥65 years old (mean 73.1 ±6.0, range 65-86 years old) undergoing anti-incontinence surgery, pelvic floor reconstruction for prolapse, and sacral neuromodulation were recruited. Patients were assessed preoperatively using CFS9, a picture-based 9-item scoring system (frail if score ≥4) and FFI, a 5-item composite score with questions related to shrinking, physical activity, physical energy, and performance of grip strength test (GST) and speed walking test (SWT) (frail if composite score ≥3). Patients also self-reported CFS9 scores. We compared FFI to physician CFS9, patient CFS9, GST alone and SWT alone. Performance metrics for each comparison using sensitivity, specificity, predictive value, and area under receiver operating curves (AUROC) were calculated. Preoperative UDI-6 questionnaire data was also examined.

Results: 10/44 patients (22.7%) were frail according to FFI compared with 7/44 (15.9%) with surgeon CFS9. All frail patients were older and had higher UDI-6 scores. CFS9 performed well when scored by the patient (AUROC 0.877, 95% CI [0.77 – 0.99]) or physician (AUROC 0.841, 95% CI [0.72 – 0.96]). When physician and patient both provided CFS9 scores

Conclusion: Clinically feasible and validated tools to screen for frailty are needed in the FPMRS patient population. GST has modest concordance compared to composite FFI to predict frailty in FPMRS patients but dynamometer availability may be clinically limited. CFS9 is an excellent predictor of frailty in FPRMS surgical patients, moreover an efficient and practical tool to measure frailty compared to FFI.
Poster #NM136
OCTOGENARIAN PATIENTS ARE POORLY COMPLIANT WITH MAINTENANCE PERCUTANEOUS TIBIAL NERVE STIMULATION

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Presented By: William T. Berg, MD

Introduction: Percutaneous tibial nerve stimulation (PTNS) is an effective and well tolerated treatment for overactive bladder. However, no study has assessed the efficacy and long-term use of PTNS therapy in the elderly population. We sought to characterize therapeutic benefit and compliance in our octogenarian patients undergoing PTNS.

Methods: Our IRB-approved PTNS database was queried for PTNS patients greater than the age of 80 from January 2014 to August 2017. Demographic and clinical data were analyzed. Outcome measures were completion of initial 12 PTNS sessions, continuation of maintenance therapy, and subjective symptom improvement. Maintenance therapy was based on symptomology, with sessions at a maximum of once session per week, and minimum of one every six.

Results: A total of 19 octogenarian patients receiving PTNS were identified. Demographic and clinical data are listed in Table 1. 74% (14/19) completed 12 initial sessions. 43% (6/14) progressed with maintenance therapy. The mean number of days between maintenance sessions was 21.7 days (SD 8.3). 14% (2/14) continued with maintenance therapy for one year. 12 patients (63.2%) reported subjective improvement in urinary symptoms. 4 patients (21.1%) went on to try OnabotulinumtoxinA injection. The most common reason for dropout during initial PTNS therapy was lack of perceived efficacy (n=3). Patients refused maintenance therapy due to lack of significant symptom improvement (n=5). Reasons for stopping maintenance therapy included medical co-morbidities (n=1) and moving to another state (n=1).

Conclusion: Overall, 74% of our octogenarian patients completed initial PTNS therapy. 63% reported subjective symptom improvement. However, compliance with maintenance therapy is low. Only 43% of completers proceed with maintenance therapy, and 14% remain on therapy at the end of one year. Future studies are required to further understand why octogenarian patients have poor compliance with PTNS maintenance therapy.
Poster #NM137
PROSPECTIVE EVALUATION OF DAILY AND WEEKLY URINE PH VARIATIONS IN POSTMENOPAUSAL WOMEN WITH RECURRENT URINARY TRACT INFECTIONS
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Presented By: Jacqueline Chavez

Introduction: Recurrent urinary tract infections (RUTIs) are a common problem among older women. Antibiotics such as nitrofurantoin and sulfamethoxazole have been shown to be effective in a urine pH 5-6 range, whereas fluoroquinolones are more effective at an alkaline pH. Little is known about patterns of daily changes in urine pH which could influence the antibiotic response.

Methods: Following IRB approval, women 64 years or older with documented history of RUTIs were enrolled. Participants were given urinalysis reagent strips (Medimpex) and pre-formatted charts to measure and record their urine pH at home 4 times per day before each meal and at bedtime. Two, 7-consecutive day collection periods were recorded, yielding 56 measurements per patient. Urine cultures were obtained at baseline and before the second week of measurements to ensure no active infection at the time of urine pH measurements.

Results: Over a two-month period, 7 women with a mean age of 72.7 ± 5.4 (64-82) years participated. Mean interval time between two, 7-day measurement periods was 9 (0-15) days. Urine pH variation was observed in every individual (Figure 1). The median pH across all data points was 6 (5-8). Median urinary pH for the first 7-day measurement period was 0.25 pH units lower than for the second 7-day period (95% CI 0.41-0.90; \( P=0.0088 \)). Drops in pH were observed between all measurement times. Nine occurred between pre-breakfast and pre-lunch, 11 between pre-lunch and pre-dinner, 10 between pre-dinner and bedtime, and 10 between bedtime and pre-breakfast. A drop to an acid pH of 5 was observed in 13% (pH 7 to 5), in 10% (pH 6.5 to 5) and in 77% (pH 6 to 5).

Conclusion: We observed important daily fluctuations in urine pH in women with RUTIs. This novel finding may provide guidance when selecting and timing antimicrobial therapy and guide new research in ways to modulate urine pH that could reduce RUTIs and/or improve antibiotic delivery.

Figure 1: Variation of urine pH per studied participant.
Poster #NM138
CORRELATES OF 1-YEAR CHANGE IN QUALITY OF LIFE IN PATIENTS WITH UROLOGICAL CHRONIC PELVIC PAIN SYNDROMES

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Presented By: J. Quentin Clemens, MD

Introduction: Few studies have prospectively evaluated change in quality of life among patients with interstitial cystitis/bladder pain syndrome (IC/BPS) and chronic prostatitis/chronic pelvic pain syndrome (CP/CPPS). Methods: A total of 191 men and 233 women with IC/BPS or CP/CPPS (collectively referred to as urologic chronic pelvic pain syndrome, or UCPPS) were recruited and followed for 12 months with bimonthly completion of the Short Form 12 (SF-12) mental and physical health to assess health-related quality of life (HRQOL). Participants with a baseline and at least one post-baseline assessment (n=376) were classified as demonstrating improved, stable, or worse HRQOL separately for physical and mental health using a functional clustering algorithm. Unadjusted and adjusted ordinal logistic regression models were used to determine baseline factors associated with change. Factors included age, sex, UCPPS symptom duration, pelvic pain (0-28) and urinary symptom severity (0-25), number of complex non-urologic medical symptoms (eg. palpitations, fatigue; CNMS, 0-34), number of body sites with pain (widespreadness, 0-45), catastrophizing (0-36), depression and anxiety as measured by the Hospital Anxiety and Depression Scale (0-21), Perceived Stress Scale (0-40), sleep disturbance (8-40), and respective baseline SF-12(0-100).

Results: The mean number of bimonthly contacts per participant was 5.4, and 75% completed at least 4 of 7 contacts. Mental HRQOL improved in 96 (25.5%), remained stable in 164 (43.3%), and worsened in 116 (30.9%) participants. Female sex and greater depression and stress were associated with less improvement in mental HRQOL. Greater pelvic pain and urinary severity, widespreadness, and CNMS were associated with less improvement in mental health in univariable models but not after adjustment for depression and stress. Physical HRQOL improved in 83 (22.1%), remained stable in 177 (47.0%), and worsened in 116 (30.9%) participants. Older age and CNMS were associated with less improvement in physical health.

Conclusion: Mental or physical HRQOL status improved in 22-25% of the UCPPS participants, and worsened in 30%. Changes in mental HRQOL were associated with sex, depression and stress, while changes in physical HRQOL were associated with age and the number of CNMS. The severity of UCPPS symptoms had a limited impact on overall HRQOL change. These findings support the need for a multidisciplinary treatment approach for UCPPS.
Poster #NM139
EVALUATION OF RECURRENT UTI-LIKE SYMPTOMS SHOULD PROMPT CONSIDERATION FOR ALTERNATIVE ETIOLOGIES
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Presented By: Ashley Caron, BS

Introduction: Recurrent urinary tract infection (rUTI) is a common and costly problem. Although urine culture is the gold standard for diagnosis, many women are referred to urology without any workup. Given this, three urologists performed an in-depth, qualitative chart review of women referred for evaluation of recurrent UTI to determine how often this diagnosis was validated. We hypothesized that many women with self-reported UTIs not confirmed by culture equate fluctuating urinary symptoms with cystitis, but will have alternative diagnoses after evaluation by a urologist.

Methods: Initial retrospective review examined laboratory and medication data from 101 women with ICD10 code N39.0 (recurrent UTI). The following prospective analysis included in-depth chart review by three urologists trained in FPMRS of all women (n=23) referred for recurrent UTI over a three-month period (July-September 2018). We additionally recorded urine specimen quality, provider rationale and final diagnoses after urological consultation.

Results: A retrospective chart review of women with recurrent UTIs found that 58% did not have cultures confirming UTI prior to referral; 26% of documented cultures were negative. Despite this, 77% of all patients had been prescribed antibiotics. Of patients with bacteriuria, 57% demonstrated squamous cells on urinalysis or multifloral cultures suggestive of vaginal contamination. This prompted qualitative evaluation of the records of women (n=23) identified prospectively at referral for recurrent UTI over three months. Only 7 (30%) women had a single positive urine culture. While 43% (10/23) retained a diagnosis of recurrent UTI after urologist evaluation, in all cases this diagnosis was presumptive, due to insufficient evidence to omit the diagnosis. The 13 women determined to have alternative symptom etiologies were diagnosed with combinations of pelvic floor dysfunction (n=6), urinary frequency (n=4), incomplete bladder emptying (n=3), asymptomatic bacteriuria (n=3), and vulvovaginal candidiasis (n=1).

Conclusion: Although the sample size of the prospective analysis is small, the results show that most women referred for recurrent UTI do not meet diagnostic criteria, and frequently have alternative etiologies for their symptoms identified upon specialist evaluation. In patients with fluctuating urinary symptoms, alternative diagnoses other than urinary tract infection should be considered and every effort made to confirm an appropriate diagnosis with urinalysis and urine culture with symptomatic episodes.
Poster #NM140
WHAT CAN WE LEARN FROM WOMEN'S ONLINE DISCUSSIONS OF INTERSTITIAL CYSTITIS/BLADDER PAIN SYNDROME?
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Presented By: Gabriela Gonzalez, BS

Introduction: Prior qualitative studies based on focus groups and administered questionnaires have investigated patient experience with interstitial cystitis/bladder pain syndrome (IC/BPS). We attempted to complement previous efforts and capture a complete patient experience by conducting a large-scale digital ethnographic analysis of anonymous online posts, which included women that were establishing a diagnosis or seeking treatment.

Methods: We collected 7,258 posts from 225 social media sites using a Java-based natural language processing platform utilizing keywords including interstitial cystitis, IC, bladder pain syndrome, BPS, painful bladder syndrome, PBS, IC/BP, IC/BPS and urethral pain to identify relevant posts. Additionally, we contracted with Treato – a social media data mining service that maintains an extensive database of patient content derived from e-forum health-related websites. 200 randomized posts were analyzed using qualitative grounded theory methodology to identify preliminary themes. To substantiate our qualitative analysis, we applied a Latent Dirichlet Allocation (LDA) probabilistic topic modeling process to our dataset to allow for quantitative analysis and to uncover previously unknown themes in a text collection.

Results: Our qualitative analysis identified five patient experience themes (Figure 1). There were significant quality-of-life effects and associated emotional burden while obtaining a diagnosis. Women had difficulty finding appropriate treatment and felt isolated without a support system. We also identified women who were given a recurrent urinary tract infection diagnosis, some of whom were then diagnosed with IC and others who self-diagnosed IC. Many women commented that these online forums served as a source of encouragement and symptom validation that was not provided as part of their medical care. Their online engagement served as a self-management tool where women share prevention strategies, risk factors, and treatments with perceived effectiveness and alternative therapies. Our study identified an extensive list of homeopathic remedies that patients used. Additionally, financial burden and side effects of medications, distrust of medical workup, misdiagnosis, and difficulty finding specialists all affected patient-centered care and treatment outcomes.

Conclusions: From our analyses, it was clear that women with IC/BPS received a great deal of support from online communities. Online posting allowed women to communicate their experiences in an honest way while maintaining anonymity not available in an office setting.
Poster #NM141
OUTCOMES OF DIODE LASER ENUCLEATION OF THE PROSTATE FOR BENIGN PROSTATIC HYPERPLASIA
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Presented By: Seth Teplitsky, BS

Introduction: Endoscopic laser enucleation of the prostate is now a well-established alternative to traditional transurethral resection of the prostate (TURP) and open prostatectomy (OP) for the treatment of benign prostatic hyperplasia (BPH). The main drawback of HoLEP is the steep learning curve. We investigate the 1470nm diode laser, with superior coagulative properties, for enucleation of the prostate as an alternative to HoLEP. The safety, efficacy, and initial surgical outcomes of diode enucleation of the prostate (DiLEP), when compared to HoLEP, were examined in patients with symptomatic BPH.

Methods: We reviewed the records of 50 patients who underwent DiLEP between May 2012 and December 2015 and matched them with 50 HoLEP patients during the same time periods for comparison. All of these patients demonstrated bladder outlet obstruction on pressure-flow urodynamic testing. Objective evaluation of efficacy was determined by comparing preoperative values for post-void residual volume (PVR) and peak flow (PF) to postoperative values at 4-16 weeks and one year following surgery. Subjective evaluation was determined by comparing the International Prostate symptom score (IPSS) before and after the operation. Statistical analyses were conducted using chi-squared and paired Student’s t-tests.

Results: Subjective and objective results showed no difference between DiLEP and HoLEP groups. Average post-void residual volume (PVR) following DiLEP was 91.8mL at one year. The mean increase in PF was 21.1mL/s at one year. The International Prostate Symptom Score improved by a mean of 12.7 points, and by 2.6 points on the quality of life question (QOL) at one year after operation. When compared with the HoLEP patient group, there were no statistically significant difference outcomes.

Conclusion: Patients showed significant improvement in PVR and PF following DiLEP, and reported a decrease in severity of lower urinary tract symptoms, with no significant differences in outcomes when compared to HoLEP patients. Our results show that this laser presents an exciting alternative to the more widely accepted Holmium laser for use in prostate enucleation. Further investigation will be needed to support the potential use of DiLEP as an essential surgical option in the future.
Poster #NM142
RELIEF OF LOWER URINARY TRACT SYMPTOMS AFTER MRI-GUIDED TRANSURETHRAL ULTRASOUND ABLATION (TULSA): SUBGROUP ANALYSES IN PATIENTS WITH SYMPTOMS OF BENIGN PROSTATIC HYPERPLASIA
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Presented By: Dean Elterman, MD, MSc, FRCSC
Introduction: MRI-guided transurethral ultrasound ablation (TULSA) offers minimally-invasive conformal thermal ablation of benign and malignant prostate tissue using high-intensity ultrasound under real-time MR-thermometry feedback control. TULSA has demonstrated safety and precision in men with localized prostate cancer. We report subgroup analyses of lower urinary tract symptoms (LUTS) in patients of a previously-reported Phase I study who had symptoms of benign prostatic hyperplasia (BPH) in addition to cancer at baseline.
Methods: In 30 patients with localized PCa (age ≥65, T1c-T2a, PSA ≤10 ng/ml, Gleason ≤7), MRI-guided TULSA was delivered to ablate 90% of the gland, without attempting to spare ejaculatory ducts. Independent subgroups of patients with LUTS at baseline were defined by: IPSS ≥12, IPSS QoL ≥3, peak flow ≤10 ml/s, post-void residual ≥100 ml, micturition frequency (IPSS Q2 ≥3), or nocturia (IPSS Q7 ≥2). Symptom relief was assessed 12 months post-TULSA. Ablation efficacy was assessed by reduction in MRI prostate volume. Safety measures included adverse events (AE, CTCAEv4), self-reported urinary incontinence, and erectile function (IIEF-15).
Results: At 12 months post-TULSA (Table 1), IPSS improved significantly by 10±7 from 16±4 to 6±5, with reclassification to mild symptoms (IPSS ≤7) in 7/9 patients who had IPSS ≥12 at baseline. 5/5 patients with QoL of “mixed” or worse improved to “pleased” or “delighted”. Nocturia, frequency, and post-void residual were significantly improved. In prostates ≥45cc, 54±19cc was ablated in 43±10 min, reducing prostate volume (less non-perfused cavity) by 82±10%. 28/30 patients were included in at least one LUTS subgroup. Complications included hematuria (14 Grade 1, 2 G2), urinary tract infection (1 Grade 1, 2 G2), and epididymitis (1 G3). There were no rectal injuries. All patients had pad-free urinary continence at 12 months, 29/30 leak-free. Erectile function was stable from 16±11 at baseline to 14±10, as was proportion of patients with erections sufficient for penetration, 21/30 to 20/30 at 12 months.
Conclusion: This analysis demonstrates the feasibility of TULSA to relieve LUTS attributed to BPH, with IPSS improvements comparable to surgical therapies. Despite limitations of subgroup analysis in oncological patients not presenting for BPH, considerable relief of LUTS with acceptable morbidity and functional outcomes warrants further development of TULSA for BPH.
Poster #NM143
SERUM PROSTATE SPECIFIC ANTIGEN LEVELS AFTER GREEN LASER ENUCLEATION OF THE PROSTATE (GreenLEP)
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Presented By: Benoit Peyronnet, MD

Introduction: Green laser enucleation of the prostate (GreenLEP) is one of the latest techniques in the armory of endoscopic enucleation of the prostate (EEP) for the treatment of benign prostatic hyperplasia (BPH). Changes in the prostate specific antigen (PSA) after GreenLEP are not well known. To date, analysis of PSA drop after GreenLEP have not been published. The aim of this study is to determine the change of serum PSA following GreenLEP and the relationship between PSA drop and the weight of tissue removed.

Methods: Between June 2013 and November 2016, 586 cases of GreenLEP “en bloc” technique were performed at five institutions by five surgeons. Serum PSA levels were measured before and after the procedure at 2, 6 and 12 months. Patients with serum PSA >20 ng/mL before surgery or prostate cancer were excluded. Preoperative TRUS prostate volume and intraoperatively weight of morcellated tissue was recorded. Linear regression analysis was performed for comparing the change in PSA with the weight of morcellated tissue, and comparing preoperative PSA with TRUS volume (data normalization by log transformation of the preoperative PSA prior to linear regression analysis).

Results: The median age of the patients was 68.0 [64.0;73.0], median preoperative PSA level was 4.0 ng/mL [2.60;6.61]. The preoperative TRUS volume averaged 95.0 [70.0;120]. The median 2-month postoperative PSA was 0.77 ng/mL, median 6-month PSA 0.70 and 12-month PSA 0.67 ng/mL. The median 2-month PSA drop was 3.29 ng/ml and the median 6-month PSA drop 3.12 ng/ml. The percent reduction in PSA at 2 months was 94.4%. The log-transformed PSA correlated directly with preoperative TRUS volume (r=0.4377609, p<0.001). Linear regression comparison of the weight of adenoma morcellated with the absolute change in PSA demonstrated that, as the prostatic adenoma increased in size, GreenLEP caused a predictable change in PSA (r= 0.3478639, p<0.001).

Conclusion: GreenLEP dramatically reduces the serum PSA levels (94.4%). This dramatic reduction of PSA suggest a complete removal of prostatic adenoma. The results of our study are similar to previous reports on HoLEP PSA drop.
Poster #NM144

FACTORS CONTRIBUTING TO HOLMIUM LASER ENUCLEATION OF THE PROSTATE (HoLEP) INCOMPLETION

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Presented By: Mihir Shah, MD

Introduction: Holmium laser enucleation of the prostate (HoLEP) is a surgical treatment option for patients with benign prostatic hyperplasia. Inability to finish the procedure is a possible complication, leading to the need for a second procedure or even conversion to an open suprapubic prostatectomy. This study’s purpose was to investigate the incidence and factors contributing to the inability to complete the procedure in certain patients.

Methods: A retrospective review, from an IRB approved database, of 515 patients that underwent a HoLEP by a single-surgeon at our institution between 2012 and 2017 was performed. The patients who underwent an incomplete procedure and required a secondary procedure were retrospectively identified and analyzed via chart review. Univariate analysis was performed for demographics and baseline characteristics.

Results: A total of 7 (1.4%) patients undergoing HoLEP who could not be completed were identified. All patients required either a second procedure (3/7) or conversion to an open suprapubic prostatectomy (4/7). Mean prostatic gland volume on TRUS was 93.6 +/- 56.6 mL for all patients. The average age and body mass indexes were 70.5 +/- 8.5 years and 30 +/- 11.9, respectively. Patient 1 had a bladder that would not expand, making morcellation impossible. The patient subsequently underwent a second operation one week later to undergo morcellation of tissue. Patient 2 underwent cystoscopy at the start of the procedure, revealing a bloody prostate. The procedure was stopped and converted to open suprapubic prostatectomy where 300g of tissue was removed. In patients 3-5, the cystoscope was unable to reach the end of the bladder, so the operation was stopped and converted to open suprapubic prostatectomy. In patients 6 and 7, enucleation was completed, but the patients afterward became edematous due to fluid overload from absorption. A second procedure was required for morcellation of tissue. Details of all patients are listed in Table 1.

Conclusion: HoLEP is a safe and effective treatment for patients suffering from lower urinary tract symptoms. Inability to complete initial procedure, thereby necessitating a secondary procedure or conversion to open procedure is a rare but possible complication. Management and counseling should be directed towards providing patients with information regarding this possibility.
Poster #NM145
VESICULAR CYSTITIS: A RARE FORM OF CHRONIC CYSTITIS
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Presented By: Joseph J. Crivelli, MD

Introduction: We describe vesicular cystitis, a previously uncharacterized finding of translucent bladder mucosal vesicles, among patients undergoing electrofulguration (EF) for antibiotic refractory recurrent urinary tract infections (RUTI).

Methods: A subgroup analysis of our institutional review board approved series on EF for antibiotic refractory RUTIs was performed, selecting for patients with documented vesicular cystitis lesions on cystoscopy (Figure, panel A). All patients had RUTIs defined as ≥3 UTIs/year with positive urine culture. Lesions were classified by location in the bladder: trigone, floor posterior to trigone, lateral walls, posterior wall, dome / anterior wall, or pancystitis (covering most bladder surfaces). All lesions were cauterized during outpatient EF under anesthesia. All patients had a 6-month postoperative office cystoscopy documenting persistence or resolution of the lesions.

Results: Eighteen patients underwent EF for vesicular cystitis between 2011-2017, among the 482 patients in our series on EF for antibiotic refractory RUTIs. Vesicular cystitis was most commonly found over the dome / anterior wall (7/18, 38%) and as pancystitis (7/18, 38%). There was often concomitant cystitis cystica of the trigone (8/18, 44%). At postoperative cystoscopy, persistence of vesicular cystitis was noted in 10/18 (56%) patients; 5 (28%) such patients were treated with repeat EF, and an additional 2 (11%) were retreated due to recurrence of lesions after initial resolution. Two (11%) patients required simple cystectomy and urinary diversion due to RUTIs refractory to all interventions. A low power view of a hematoxylin and eosin stained lesion from a cystectomy specimen demonstrates a single cell layered bulla (Figure, panel B).

Conclusion: Vesicular cystitis is a rare, persistent, often aggressive form of cystitis with a predilection for the non-trigonal bladder surfaces among patients with RUTIs.
Poster #NM146
IMPACT OF URINE pH ON ANTIBIOTIC RESPONSE IN WOMEN WITH UROPATHOGENIC ESCHERICHIA COLI RECURRENT URINARY TRACT INFECTIONS
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Presented By: Jacqueline Chavez

Introduction: As early as Brumfitt in 1948, the relationship between the effectiveness of certain uro-antibiotics and urinary pH levels has been considered (Table 1). We compared the urine pH of women infected with E. coli to their antibiotic treatment response.

Methods: An IRB-approved, prospectively maintained database of well-characterized women with antibiotic-refractory recurrent urinary tract infections (RUTI) managed with electrofulguration (F) at a tertiary care center was reviewed. Included were women with at least 6 months follow-up post-F, an electronic medical record (EMR) documenting urine pH value at the time of each urine culture, and at least one E. coli positive urine culture. Total number of urine cultures post-F, urine pH variability, antibiotics prescribed, and the interval (months) between antibiotic administration and another UTI episode were reviewed.

Results: From 2006-2016 23 women met study criteria, with mean follow-up of 2 (1-9) years and mean age of 66 (28-92) years. Total number of urine cultures was 181, including 93 positive (I), 88 negative (NI), and 54 with E. coli. The average number of urine cultures per patient was 7 ± 3.8 (2-16). Median urine pH observed was 6, with no difference between I, NI, or E. coli urine cultures. There was no change in urine pH with aging. Six individuals were prescribed antibiotics for which pH has not been shown to change efficacy, 10 in whom urine pH aligned with the reported best efficacy range for their prescribed antibiotic, and 7 whom urine pH was not in the ideal antibiotic pH range. Mean interval time between first and second positive urine culture was longer for those with the appropriate urine pH for the prescribed antibiotic (26 months, 2-63) compared to those with a mismatch between urine pH and optimal pH range for their antibiotic (18 months, 1-33).

Conclusion: This observational study explores the possible link between the urine pH of a woman with RUTIs and her response to antibiotic treatment administered without taking her urine pH into account. Future studies are needed to determine if an individual’s urine pH needs to match the optimal pH range of a prescribed antibiotic to result in maximum therapeutic efficacy.
Fear, Desperation and Frustration: Women's Perspectives Regarding Recurrent Urinary Tract Infections

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Presented By: Victoria C.S. Scott, MD

Introduction: The field of urology broadly encompasses quality of life in many areas, in particular BPH and prostate cancer. Although a great deal of research has focused on the pathophysiology of urinary tract infections (UTIs) and causes of recurrence, there remains a paucity of data regarding patient experience among women plagued with recurrent UTIs (rUTIs). The exploration of patient perspectives on the current management of rUTIs will be a crucial component of efforts to improve the quality of care delivered to these patients. The objective of this study was to assess perceptions of women with rUTIs on their condition and treatment experience through focus group discussions.

Methods: Women were recruited from a tertiary female pelvic medicine and reconstructive surgery practice to participate in a 1.5-hour focus group. A total of 29 women were included in six focus group sessions. The median age was 46 (range 20-81 years old). A clinician moderator conducted each session. Topics discussed include patient knowledge, prevention strategies, the role of antibiotics in treatment, treatment alternatives, and impact on quality of life. Data analysis was performed using grounded theory methods, as described by Charmaz.

Results: A qualitative analysis of focus group transcripts produced several preliminary themes. Patients with rUTIs had a strong medical knowledge base with varying sources of information obtained from outside sources. They experienced feelings of confusion and neglect that led to the development of individual prevention and treatment strategies. They also reported a devastating impact of the condition on their quality of life. From these initial themes, the emergent concepts of frustration with the medical profession, desperation, and self-blame were identified. Fear emerged as the overarching theme that served as a prominent driver of patient behavior.

Conclusion: Patients in the focus groups demonstrated significant frustration with the current management of rUTIs. This resulted in overall distrust of the medical community. Physicians should identify clear expectations and provide comprehensive follow-up with adequate, individualized education, including a prevention and treatment plan, when managing patients with rUTI. Further research should include methods to alleviate patient fears and restore trust in medical providers.

Figure 1. Emergent themes from focus group discussions including women with recurrent urinary tract infections with fear as a prominent emotion associated with this condition and serving as a link between other themes.
Poster #NM148
EVIDENCE LINKING COMESTIBLES TO INTERSTITIAL CYSTITIS AND BLADDER PAIN SYNDROME
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Presented By: Carrie A. Stewart, MD

Introduction: Patients with interstitial cystitis/bladder pain syndrome (IC/BPS) note symptom exacerbations with dietary triggers, and the Interstitial Cystitis Association offers an elimination diet to calm symptoms. The diet is based on the evidence at the website page titled “SNAPSHOT OF RESEARCH ON IC AND DIET” (https://www.ichelp.org/living-with-ic/interstitial-cystitis-and-diet/snapshot-of-research-on-ic-and-diet/). There remains a paucity of data surrounding efficacy of dietary interventions.

Methods: Meta-analysis of Observational Studies in Epidemiology criteria was used to identify articles on diet and IC/BPS. Medical subject heading (MeSH) were used to query PubMed and Cochrane Review databases. Terms included interstitial cystitis (and synonyms for interstitial cystitis via use of MeSH terms ex: bladder pain syndrome and painful bladder syndrome) combined with 47 different MeSH terms describing diets and comestibles.

Results: The literature search identified 149 titles, fifteen of which were included in the final review. Evidence supporting diet therapy was obtained from both clinicians and patients in observational studies. Symptoms were evaluated a multitude of ways, including, but not limited to open ended questions, questionnaires and, in some cases, the details of evaluation methods were not specified. No double-blind, placebo controlled studies were identified. Heterogeneous inclusion criteria were used, including self-identification as having IC/BP, interstitial cystitis symptom scoring, NIDDK criteria, International Continence Society criteria and/or based on symptomatology. Some studies evaluated diet intervention and others associations between foods and symptoms. Foods thought to be dietary triggers were evaluated, ex: caffeine, tomatoes and spicy foods. Data collection and reporting was not standardized. The randomized placebo controlled trial did not specify which foods were used. Controlled clinical trials used dietary exposure followed by dietary modification, reduction of intake of certain foods, and questionnaires. A case-crossover study evaluated dietary exposures before and after flares. Cross sectional studies used variable methods but most were questionnaires.

Conclusion: Many studies try to discern the role of diet in interstitial cystitis. Observational studies and trials have shown no congruous, conclusive evidence that diet management affects interstitial cystitis symptomatology. Much of the evidence available suggests associations between diet and IC/BPS but bias, lack of both objective data and standardized reporting in the literature weakens the strength.
Poster #NM149
A COMPARISON OF PRE- AND POST-OPERATIVE BLADDER/BOWEL SYMPTOMS AMONG PATIENTS UNDERGOING COMPLETE SURGICAL ENDOMETRIOSIS RESECTION
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Presented By: Annah Vollstedt, MD

Introduction: We sought to determine the prevalence of bladder and bowel symptoms among patients presenting for surgical management of endometriosis and to assess the impact of complete laparoscopic endometriosis resection, pudendal nerve block, and lysis of adhesions on those symptoms.

Methods: Retrospective chart review. Surgeries were performed by a single surgeon at Concord Hospital from 1/2016-1/2018, with all patients receiving care at the hospital’s integrated pelvic medicine clinic. Patient-reported pre-operative symptoms were assessed for 59 cases. Post-operative symptom improvement was assessed for the 56 patients who presented for follow-up. Referral diagnoses/chief complaints at the time of initial presentation were assessed for the 46 patients without a prior biopsy-confirmed diagnosis of endometriosis.

Results: Average age at the time of surgery was 25 years (15-42). Based on referral diagnoses/chief complaints at the time of initial presentation: 69.6% of patients had exclusively gynecologic complaints, 21.7% had both gynecologic and urologic complaints, and 8.7% had exclusively urologic complaints. The most common presenting complaints were: pelvic pain (65.2%), dyspareunia (34.8%), endometriosis by history (23.9%), abdominal pain (23.9%), dysmenorrhea (19.6%), urinary frequency (15.2%), and dysuria (15.2%). At their pre-operative visit, 100% of patients endorsed pain symptoms, 72.9% bladder symptoms, and 44.1% bowel symptoms. The most common pre-operative symptoms were: dysmenorrhea (83.1%), dyspareunia (72.9%), pelvic pain (69.5%), urinary frequency (57.6%), urinary urgency (50.8%), and constipation (35.6%). 89.3% of patients with pre-operative pain symptoms, 53.7% with bladder symptoms, and 50% with bowel symptoms reported symptom improvement/resolution at their post-operative visit. Of patients with pathology-confirmed endometriosis, 91.1% had post-operative improvement in pain symptoms, 52.9% in bladder symptoms, and 55% in bowel symptoms; of patients with negative pathology, 80% had improvement in pain symptoms, 57.1% in bladder symptoms, and 25% in bowel symptoms.

Conclusion: Bladder/bowel symptoms are potential surrogate symptoms for endometriosis. Complete surgical resection of endometriosis results in improvement of pain, bladder, and bowel symptoms for the majority of patients. Post-operative improvement among patients without pathology-confirmed endometriosis suggests that addressing myofascial dysfunction through the administration of pudendal nerve blocks and restoring normal anatomy via lysis of adhesions contribute to symptom improvement.
Poster #NM150
PAIN CONTROL FOR INTERSTITIAL CYSTITIS PATIENTS UNDERGOING PELVIC RECONSTRUCTIVE SURGERY
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Presented By: Tess Crouss, MD

Introduction: Interstitial cystitis (IC) is a chronic pelvic pain syndrome that is poorly understood. Scant research exists on pain control for IC patients undergoing pelvic reconstructive surgery (PRS). While these complex surgeries are typically performed under general anesthesia (GA), there are many benefits of using local anesthesia with monitored anesthesia care (MAC-LA). Our aim was to analyze our cohort of patients undergoing complex PRS and compare the intraoperative and postoperative courses to those with and without IC.

Methods: We performed a retrospective chart review of all PRS cases performed at a single site from 11/2015 to 7/2018. Joint cases were excluded. Data including demographics, intraoperative variables, medication requirements and postoperative courses were abstracted. Chi-squared, independent T and Mann-Whitney-U tests were used to compare IC vs. non-IC patients.

Results: Sixty-five separate PRS cases met inclusion criteria and were analyzed, with 57 individual subjects. The average age was 59. Thirty-three out of the 65 PRS cases were performed on IC patients. Thirty-one of 33 IC patient PRS cases were successfully performed under MAC-LA, and 2 required GA. IC patients did not require an elevated amount of 1% lidocaine with epinephrine, (average of 3.8 mg/kg) compared to patients without IC (2.8 mg/kg). There was no difference in length of operation, intra or postoperative complications, length of postoperative recovery, postoperative narcotic medication consumption, or length of hospitalization.

Conclusion: Complex PRS can be safely performed on chronic pain patients with IC using MAC-LA, without any increased morbidity or difficulty with intraoperative pain control.

Poster #NM151 - WITHDRAWN
ASSESSING THE IMPACT OF UROLOGY RESIDENT INVOLVEMENT ON OVERALL PATIENT SATISFACTION

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Presented By: Colby P. Souders, MD

**Introduction:** Cedars-Sinai Medical Center is an academic community hospital with three distinct groups of urologists: a hospital-employed faculty group that directs the residency program, private-practice urologists who voluntarily teach residents and involve them in patient care, and private-practice urologists who do not participate in resident teaching. We compared post-discharge patient satisfaction surveys across all three subgroups of urologists to assess the impact of resident involvement on the overall patient experience.

**Methods:** Post-discharge Hospital Consumer Assessment of Healthcare Providers and Systems Survey from all urologists from January 1, 2014 through December 31, 2016 were reviewed (n = 621). The surveys were de-identified and categorized based on the three subgroups of admitting providers: faculty, private with residents, private without residents. We assessed four factors from each survey: overall rating, physician (MD) communication, nursing communication, and overall pain management during their hospitalization.

**Results:** The faculty group had an overall satisfaction score of 88.3% (percentage of patients who rank their physicians as 9 or 10 on a scale from 1-10). MD communication satisfaction score of 80.1%. This and subsequent percentage values represent the proportion of patients answering “always” for specific satisfaction measures on scale of “always,” “usually,” “sometimes,” and “never.” The private with resident group had an overall satisfaction score of 92.0% and MD communication satisfaction score of 96.0%. The private without resident group had an overall satisfaction score of 96.7% and MD communication satisfaction score of 84.1% (Table 1). Statistical analysis of the different groups of urologists showed no statistical difference in patient satisfaction scores across all categories, except for one—private urologists with residents had better scores than their private counterparts without residents in MD communication and this difference was statistically significant (p = 0.0054).

**Conclusion:** Private practice attendings without resident involvement had the highest post-discharge patient satisfaction scores; however, resident involvement with faculty and other private practice urologists does not have a statistically significant negative effect in any of the patient satisfaction categories. This information may be used to reassure patients that resident involvement does not negatively impact their inpatient experience.
Poster #NM153
A QUALITY INITIATIVE TO CONFIRM PENICILLIN ALLERGY, AND REDUCE OVERLABELING OF PENICILLIN ALLERGY, IN AN AGING FEMALE POPULATION
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Presented By: Svjetlana Lozo, MD, MPH

Introduction: A majority of risk factors for recurrent urinary tract infections (UTI) are associated with aging, leading to an increasing incidence of the condition in elderly women. In our institution, 27.5% of elderly patients (65 and above) are noted to have penicillin allergy. Penicillin and other beta-lactam antibiotics are the first-line treatment options for many infections, and a diagnosed penicillin allergy will lead to narrower antibiotic choice, development of higher resistance organisms, and higher health care cost. Considering the increasing prevalence of aging patient population and the increasing risk of developing Clostridium difficile infection in penicillin allergic patients, we developed a quality initiative encouraging penicillin allergic patients with recurrent urinary tract infections to get tested.

Methods: This study was performed as part of a Quality improvement project and exempt from IRB. We reviewed data from 659 patients seen in the division of Urogynecology for recurrent UTI from 2016-2018. The rate of penicillin allergy in this population was 21.7%. Among 143 patients with penicillin allergy, 66 patients (46%) were age 65-90. Patients within this group received a mailed letter explaining the implications of penicillin allergy and the importance of an accurate diagnosis, and then were contacted via telephone, to determine whether they were interested in proceeding with penicillin allergy testing.

Results: 52 out of 66 patients (79%) were successfully contacted. 35 patients (67%) reported that they felt their penicillin allergy was influencing treatment choices for their recurrent urinary tract infections and wished to proceed with penicillin allergy testing. 14 patients (27%) of patients were either not interested or were not able to proceed with testing at that time. The majority of patients declining testing felt that penicillin allergy was not influencing their treatment choices for recurrent urinary tract infections. 6% of patients had severe dementia and were unable to consent for testing.

Conclusion: The majority of elderly patients feel that penicillin allergy affects their treatment options for recurrent urinary tract infections and are willing to undergo testing to confirm the status of their allergy. The results of penicillin allergy testing will be presented.
URINARY TRACT INFECTIONS IN GERIATRIC AMBULATORY PATIENTS WITH INDWELLING CATHETERS
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Presented By: Lauren E. Tennyson, MD

Introduction: Urinary tract infections (UTIs) are common in patients with chronic indwelling catheters. Our aim was to determine the frequency and character of UTIs to help power subsequent UTI treatment studies, and to stratify patients by age.

Methods: We conducted a retrospective review of all patients who had indwelling catheter changes initiated at an outpatient clinic from January 2015 to December 2016. Patients living in long-term care facilities were excluded. Patients were determined to have had a UTI if two of the following three criteria were met: 1) documented symptoms including dysuria, foul-smelling or cloudy urine, new leakage or bladder spasms, and/or new urgency or pain; 2) positive urine culture; 3) initiation of a therapeutic course of antibiotics. Patients were classified into two groups: age greater than 80 years, or less than 80 years.

Results: During our study period, 69 patients were initiated on catheter changes, and underwent 609 catheter changes. Mean age was 75 years (standard deviation 14, median 78, range 33-100), and 55/69 (80%) patients were male. The majority of catheters were placed for urinary retention (57/69, 83%). Thirty-four patients (45%) were age 80 years or older. The location of the catheter (suprapubic, urethral or both) was not significantly different between groups. Twenty-eight patients (41%) had 40 UTIs over the study period. Fourteen patients in each group had at least one UTI (age ≥ 80: 14/34, 41.2% v. age < 80: 14/35, 40.0%, p=0.820). Risk of UTI per patient per month was 7% overall (age ≥ 80: 8.6% v. age < 80 5.8%, p=0.137). Urine culture results were available for 26/28 (93%) patients who had had a UTI, and organisms resistant to at least one antibiotic were found in 24/26 (92%) patients. Rates of organism resistance were also similar between groups (p=0.455).

Conclusion: Almost half (41%) of patients with chronic catheter had at least one UTI, and risk of UTI was 7% per patient each month. There were no differences between patients ages 80 and greater and age less than 80. Resistant organisms were very common in both groups.
Poster #NM155
THE POTENTIAL ROLE OF NO-PATHWAY-RELATED SUPPLEMENTS ON ERECTILE DYSFUNCTION: A SYSTEMIC REVIEW AND META-ANALYSIS

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Presented By: Hyun-Woo Kim, MD

Introduction: To assess the potential role of nitric oxide (NO) producing supplements (oral arginine/citrulline, pycnogenol, and red ginseng) on erectile dysfunction as alternatives to phosphodiesterase inhibitors (PDEi).

Methods: Studies published up to April 2018 that evaluated the efficacy of NO producing agents were identified from multiple databases (Google Scholar, PubMed, Medline, Embase, Kiss, DBpia and Cochrane databases). Studies comparing NO-producing supplements with placebo or untreated, focusing only on patients with mild to moderate severity of erectile dysfunction, and presenting outcomes such as improvement rate, IIEF (international index of erectile function) score, and testosterone level were included. Subgroup analysis and sensitivity analysis were further conducted to maximize credibility and to minimize inconsistency.

Results: In total, 20 articles (15 RCTs and 5 non-RCTs) met inclusion criteria reporting outcomes of 1206 erectile dysfunction (ED) patients. Analysis demonstrated significant improvement on ED with NO-producing supplements compared to placebo or untreated (OR: 8.54 [3.59, 20.32], P<0.00001, I2=70). NO-producing supplements also induced significant improvement on IIEF5 (OR: 3.02 [0.55, 5.50], P=0.02, I2=79%) and IIEF15 scores (OR: 3.09 [0.52, 5.65], P=0.02, I2=33%). IIEF subdomains of overall satisfaction, sexual desire, and erectile function were significantly changed, but intercourse satisfaction, orgasmic function, and testosterone level remain unchanged.

Conclusion: Existing evidence supports the benefit of NO-producing supplements as alternatives or mutual complement to PDEi in mild to moderate ED patients. NO-producing supplements may be safer and psychologically more accepted than PDEi. Along with improving erectile dysfunction, NO-producing supplements may also contribute to increase in sexual desire, which may not be enhanced by PDEi.

Figure. 1 Improvement rate: (a) Improved ED

(a)
TOILETING BEHAVIORS AND LOWER URINARY TRACT SYMPTOMS AMONG FEMALE PHYSICIANS
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Presented By: Colleen M. Fitzgerald, MD

Introduction: Lower urinary tract symptoms (LUTS) describe a group of clinical symptoms that includes storage, voiding and post-voiding difficulties. Evidence suggests that unhealthy toileting behaviors are associated with the development and exacerbation of LUTS. By the nature of the physician’s occupational demands, female physicians are likely to exhibit abnormal toileting behaviors that may place them at significant risk for the development of LUTS.

Methods: 133 Female medical students, residents and attending physicians from Loyola University Medical Center participated in an anonymous cross-sectional study. Participants were invited to complete an anonymous survey relating to their demographics, voiding behaviors, lower urinary tract symptoms and fluid intake. The validated measures used to capture this data included the Bristol Female Lower Urinary Tract Symptoms (BF-LUTS), the Toileting Behavior-Women’s Elimination Behaviors (TB-WEB) and the Beverage Intake Questionnaire (BEV-Q). Items on the TB-WEB were compared by level of training using chi-square or Fisher’s exact test. Analyses were performed using SAS 9.4.

Results: The mean age was 31.08 years, 63.4% were Caucasian, 19.2% were parous. The sample comprised of 21 attending physicians (16.2%), 8 fellows (6.2%), 55 residents (42.3%), and 46 students (35.4%). On average, female physicians work 61.5 hours per week. 72.3% ignore the urge to urinate for extended periods of time with 44.6% of subjects drinking less fluid with the intent of limiting toileting frequency. Despite the prevalence of these coping strategies, 47.3% of participants reported needing to rush to the toilet for urgency with 17.6% of participants leaking urine before reaching the toilet, 23.7% leaking urine while physically active and 21% leaking urine more than once a week. Those with incontinence were more likely to report often or always waiting too long at work (n=8, 36.4%) compared to those who were continent (n=16, 14.8%) (p=0.049). In addition, 12% of participants reported bladder pain and 10.8% reported urinary symptoms interfering with their lives.

Conclusion: Although female physicians are uniquely aware of the physiological functioning of the lower urinary tract, many engage in toileting behaviors that may be detrimental to their bladder health. Further research is needed to ascertain points of vulnerability that are amenable to risk-reducing interventions.
Poster #NM157
NOVEL SYMPTOM QUESTIONNAIRE FOR THE DIFFERENTIAL DIAGNOSIS OF DETRUSOR UNDERACTIVITY AND BLADDER OUTLET OBSTRUCTION IN MEN
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Presented By: Hyeong Gon Kim

Introduction: To develope a questionnaire for the differential diagnosis of DUA and BOO without performing invasive pressure flow studies.

Methods: Symptoms of men with DUA were analyzed and compared with those of men with BOO using 8 questions from the developing questionnaire. Patients with DUA have a bladder contractility index (PdetQmax+5xQmax) less than 100, while those with BOO have a BOO index (PdetQmax-2xQmax) greater than 40 in urodynamic studies (UDS). Men with detrusor overactivity in UDS and neurogenic issues were excluded from the analysis. One urologist reviewed patients’ medical records, and responded to 8 questions without using information from UDS. Scores in the developing questionnaire were then compared to make a differential diagnosis between DUA and BOO.

Results: Overall, 318 men who underwent UDS were included. Symptoms were compared in patients diagnosed with DUA without BOO (n=165), and BOO without DUA (n=153). Questions 1, 2, 4, 5, 6, and 7 were significantly different between groups. The sensitivity and specificity of the questionnaire were 95.8% and 95.4%, respectively, for predicting DUA in patients with scores greater than 45 points (cut-off value).

Conclusion: Men with DUA and BOO may be distinguished using a developing questionnaire without invasive evaluation. Men with scores greater than 45 points would be expected to have DUA but not BOO.

Figure 1. ROC curve for total scores of the questionnaire (It is impossible to attach the figure due to limited regulation)

Table 1. Questionnaire for differential diagnosis between DUA and BOO
Poster #NM158
PROSTATE STONES FOLLOWING RADIATION FOR PROSTATE CANCER: THE GIFT THAT KEEPS ON GIVING
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Presented By: Christine Liaw, MD

Introduction: Radiotherapy, external beam (XRT) and/or brachytherapy (BT), is considered a standard of care for the treatment of localized prostate cancer, but it is accompanied by a host of local complications. Herein, we report our experience with prostate stones, a relatively uncommon complication.

Methods: This is a retrospective case of series men who developed prostate stones after radiotherapy for prostate cancer. Electronic medical records from two practice settings were searched for men who developed prostatic stones after undergoing external beam and or brachytherapy radiotherapy.
Specific data culled included age, duration of follow-up, Gleason score, time from radiotherapy to diagnosis of prostate stones, symptoms, validated symptom scores (International Prostate Symptom Score [IPSS], lower urinary tract symptom score [LUTSS]), associated conditions (urethral stricture, bladder neck contracture, urethral obstruction, overactive bladder), uroflow (Q), post-void residual urine volume (PVR), 24-hour voiding diary, cystoscopy and videourodynamic study (VUDS), methods of treatment, type and number of surgeries and outcomes.

Results: Prostate stones were identified in 11 men, age ranging from 66 to 83 years. All underwent BT; four underwent XRT as well. Follow-up ranged from 2 months to 15 years with a median of 2.2 years and a mean of 3.3 years. Three patients, including the one followed for 59 days so far, are still actively being followed. Seven patients underwent VUDS; urethral obstruction was found in 100% and detrusor overactivity in 3/7. All underwent transurethral stone extraction +/-laser lithotripsy. Concomitant surgery, included urethrotomy for urethral strictures (3/11), TURP (7/11), and TUIP (2/11). 4/11 patients underwent suprapubic catheter placement at some point. Over time, patients underwent 87 subsequent surgeries to address bladder outlet obstruction, urinary incontinence, etc., including lithotripsy of prostate stones, TUI, TUR, open cystolitholapaxy, cystoplasty, implantation (3/11) and explantation (3/11) of sphincter prostheses, and urinary diversion (2/11).

Conclusion: Prostate stones are the tip of the iceberg in men who have undergone radiotherapy for prostate cancer. Despite some short-term successes, over time not a single patient in this series had a meaningfully successful long-term outcome with respect to lower urinary tract symptoms. We need to determine better ways to treat these lifestyle altering complications.
Poster #NM159
OVERUSE OF BOTOX IN UROLOGIC SURGERY: A TREND OR AN EXCEPTION?
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Presented By: Bristol B. Whiles, MD

Introduction: OnabotulinumtoxinA (Botox) is an acetylcholine release inhibitor and neuromuscular blocking agent used for the treatment of multiple conditions including overactive bladder, detrusor overactivity associated with neurologic conditions, chronic migraines, spasticity, cervical dystonia and blepharospasms. Although this product is used in multiple clinical settings, it is unclear how often patients receive more than the recommended dosage across the multitude of indications for which it is used.

Methods: We developed a retrospective cohort of all patients at an academic medical center who underwent cystourethroscopy with chemodenervation of the bladder (CPT 52287) between 2013-2018. All Botox administrations including dose, date of administration, and procedure were determined. Patients who received greater than the manufacturer’s current recommended maximum dosage of 400 Units within 3 months were identified.

Results: Our final cohort included 358 patients who underwent chemodenervation of the bladder via Botox injection. The average patient age at first procedure was 60.4 ±15.4 years and 76.0% were female. These patients underwent 671 Botox injections, an average of 1.88 ±1.45 per patient. Other non-urologic procedures with Botox administration were performed in 11 (3.07%) of these patients and were completed by the Departments of Rehabilitation and/or Neurology. Botox overuse occurred in 6 patients (1.68%) during 14 procedures. Of these 14 instances of overuse, 3 were due to >400 U administered during a single procedure, while 9 instances occurred during a subsequent procedure within 90 days. All instances of overuse occurred in patients who were prescribed Botox by multiple departments and providers. Actual administered dose of Botox was found to be discordant between pharmacy dispensing and nursing medication record for all indications.

Conclusion: Overuse of Botox occurs in our urology patients, specifically in those who are prescribed Botox by multiple providers for different indications. Further study is needed to determine how patients tolerate these higher doses as well as methods to improve tracking of Botox administration and communication across different specialties.
Poster #NM160
RE-EVALUATION OF BIRTH TRENDS AND PREGNANCY COMPLICATIONS AMONG FEMALE UROLOGISTS: HAVE WE MADE ANY PROGRESS?
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Presented By: Victoria Scott, MD

Introduction: As the number of women entering surgical fields during their prime child-bearing years grows, investigation of pregnancy complications and support for family planning is crucial. A survey performed in 2007 revealed female urologists have children later in life, in smaller numbers, and with a higher incidence of pregnancy complications. We sought to investigate if these trends have changed 10 years later.

Methods: In 2017, a 91-item survey was sent electronically to all female American Board of Urology diplomates. Birth trends, pregnancy complications, and need for infertility services were evaluated in respondents (n=183) and compared to the previous survey (2007) and to 2016 CDC data. Results from participants who completed residency before 2007 were also compared to those completing residency after 2007.

Results: The average age of respondents who completed residency before and after 2007 was 50.2 years (n=76) and 38.3 years (n=107), respectively. Of women completing residency prior to 2007, 78% were mothers with an average of 2.3 biological children and 77% of those graduating after 2007 were mothers with an average of 1.9 biological children. The age at which women had children in both groups was 6-7 years later than the respective CDC national averages. There were no significant differences in overall pregnancy complications observed between the two groups. Infertility rates between the two groups were similar and significantly increased over the CDC national averages. Significantly more women who graduated after 2007 who did not have children reported regret (p=0.04). Over 50% of women in both groups reported their career had a negative impact on relationships with significant others, citing a lack of time spent with partner as a result of long work hours and lack of ability to control work-life balance as the predominant factors.

Conclusion: Female urologists continue to have children later in life with higher infertility rates, increased requirements for fertility services, and more perinatal complications than the general US population. Thus, the implementation of work hour restrictions by the ACGME and increased awareness of these issues has done little to impact female urologists’ ability to have healthy pregnancy and delivery experiences. Efforts are needed to continue to support childbearing and work-life balance in urology.
FACTORS AFFECTING PATIENT FOLLOW-UP AFTER FIRST TIME INTRAVESICAL INJECTION OF ONABOTULINUMTOXINA IN IDIOPATHIC OVERACTIVE BLADDER PATIENTS

Wai Lee1, Chris Du2, Ryan Donahue1, Alvaro Lucioni1, Kathleen C. Kobashi1, Una J. Lee1

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Presented By: Wai Lee, MD

Introduction: Intravesical OnabotulinumtoxinA (BTX) injection is an approved therapy for refractory overactive bladder (OAB). Despite the efficacy of BTX, patient compliance with repeat injections has been demonstrated to be low. The objective of this study is to evaluate factors affecting patient follow-up after first time BTX injection in idiopathic OAB patients.

Methods: This is a retrospective study of consecutive idiopathic OAB patients who underwent 1st time BTX injection from 1/2016-12/2017 at a single institution. Subjective patient improvement was assessed by an independent reviewer of electronic medical records and scored on an efficacy Likert scale (1-5). Binomial logistic regression was performed using SPSS v24.

Results: Our cohort included 69 patients: 60 (87%) women and 9 (13%) men. 26/69 (37.7%) patients underwent repeat BTX after initial injection, with a median interval between injections of 7.1 months (IQR 4.7-9.8). Conversely, 43/69 (62.3%) patients did not return for repeat injection. 12/43 (27.9%) of these patients had no improvement or worsening of their symptoms. For patients with improvement after BTX without further injections (31/43), reasons for not undergoing repeat injection included: presence of complication (12.9%), change to other 3rd line therapy for OAB (19.3%), other surgery (12.9%), and loss to follow up for unknown reason (54.8%) (Figure 1). Patient factors related to repeat BTX were evaluated. Average efficacy outcome score after BTX treatment was significantly higher (p=0.024) in patients who had repeat injection (4.88, STD 0.43) when compared to those who did not (3.95, STD 1.17). Patients who did not undergo repeat BTX had higher rates of urinary tract infection and need for de novo self intermittent catheterization when compared to patients who had repeat injection, but this was not significant. Other variables evaluated, such as demographics, distance to hospital, and prior 3rd line therapies, were also not significant (Table 1).

Conclusion: 62% of our idiopathic OAB patients undergoing BTX for the first time did not elect to repeat injection. While subjective improvement after initial injection correlated with repeat BTX, many of the patients with symptomatic improvement were lost to follow-up. Developing a specific plan to improve follow up rates may increase patient compliance with repeat BTX treatment with the ultimate goal of patient satisfaction.
ADD-ON TREATMENT WITH MIRABEGRON IN MEN WITH BENIGN PROSTATIC HYPERPLASIA COMPLAINING PERSISTENT STORAGE SYMTPOMS AFTER TAMSULOSIN MONOTHERAPY IMPROVES QUALITY OF LIFE

Su Jin Kim, PhD¹, Sung Tae Cho, PhD², Tae Wook Kang¹, Ki Don Chang¹, Jae Hung Jung, PhD¹, Hyun chul Chung, PhD¹, Khae Hawn Kim, PhD³

¹Department of Urology, Yonsei University Wonju College of Medicine, Wonju, Korea, ²Department of Urology, Hallym University Kangnam Sacred Heart Hospital, Hallym University College of Medicine, Seoul, Korea, ³Department of Urology, Gachon University Gil Medical Center, Gachon University School of Medicine, Incheon, Korea

Presented By: Su Jin Kim, PhD

Introduction: To evaluate the change of lower urinary tract symptom (LUTS) and quality of life (QoL) after combination therapy of solifenacin and mirabegron for the patients with Benign Prostatic Hyperplasia (BPH) presenting persistent storage symptoms after treatment with tamsulosin.

Methods: We evaluated International prostatic symptom score (IPSS), overactive bladder symptom score (OABSS), PSA, prostate volume (PV), peak flow rate (Qmax), post voided volume (PVR) before and after treatment. Patients showing baseline OABSS question 3 ≥ 4 was included in this study and treat with tamsulosin 0.2 mg as an initial drug for 1 month. After 1 month, add-on treatment with solifenacin 5 mg or mirabegron 50 mg was done to the patients who did not show improvement of OABSS scores with tamsulosin 0.2 mg. Two months later we evaluated the changes of OABSS, IPSS, Qmax and PVR.

Results: After combination treatment for 2 months, there were no significant differences between the patients received add-on treatment with solifenacin and mirabegron. However, significant improvement of IPSS QoL score of the patients treated with mirabegron and tamsulosin compared with solifenacin and tamsulosin. Patients treated with mirabegron showed lower adverse events of dry mouth and constipation compared with patients treated with solifenacin.

Conclusion: Combination of tamsulosin and mirabegron showed better QoL in the patients complaining persistent storage symptoms after tamsulosin monotherapy. Better QoL after treatment could contribute to increase patient’s satisfaction after treatment.
Poster #NM163

SPINAL CORD INJURY AND SOCIAL MEDIA: PREVALENCE OF LOWER URINARY TRACT CONVERSATIONS ACROSS MULTIPLE PLATFORMS

Kyle Latack, BA1, Evgeniy Kreydin, MD2
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Presented By: Kyle Latack, BA

Introduction: Social media facilitates patient-to-patient communication and dissemination of information. Lower urinary tract (LUT) dysfunction is of paramount importance to spinal cord injury (SCI) patients, and recovery of bladder function is ranked as a top priority in this population. We hypothesized that LUT dysfunction is a prevalent subject on SCI-related social media.

Methods: The platforms Reddit, Twitter, and Facebook were analyzed. Reddit posts from one year (2017-2018) referencing LUT were identified, and the number of comments and “upvotes” were quantified. The first 1500 Tweets from one month (September 2018) featuring either #Spinalcordinjury or #Incontinence were also analyzed. Finally, Facebook pages related to SCI were identified and ranked by number of “likes”. Posts in the top 10% of Facebook pages were analyzed for LUT content.

Results: Of 269 posts on Reddit SCI, 13% related to LUT. These posts generated more upvotes (Median 7 vs 5; p< 0.05) and comments (Median 10 vs 7; p< 0.05) than posts not referencing the LUT. Among Tweets marked by #Incontinence, 0.93% referenced SCI, while no Tweets under #Spinalcordinjury referenced LUT. There were 102 Facebook pages related to SCI with an average of 1991 “likes” (Range: 16-69,000). The top 10% of pages (n=10) totaled 17,256 posts and 125,800 “likes”. The LUT was mentioned in 0.83% of posts across the top 10 SCI pages (Range: 0.05- 13.2% in the individual pages).

Conclusion: Despite the high importance placed on LUT dysfunction among the SCI population, this topic is not frequently discussed on social media, especially when the environment does not support anonymity (i.e. Twitter and Facebook). However, when LUT dysfunction posts are generated, they can receive significant attention from other users.
Poster #NM164
CAN PATIENTS PREDICT THEIR VOILED VOLUMES FOR BLADDER DIARIES?
Mitali Kini¹, Dominique Thomas¹, Nadir Zaidi², Debra D'Angelo¹, Victoria Cooley¹, Paul Christos¹
¹Weill Cornell Medical College, ²Weill Cornell Medical College
Presented By: Mitali Kini, BS

Introduction: To determine if patients could accurately estimate volumes voided in a bladder diary, and to determine the patient characteristics that are most predictive of accuracy in volume estimation in the workup of Lower Urinary Tract Symptoms (LUTS).

Methods: We prospectively collected data on 190 consecutive patients undergoing a workup for lower urinary tract symptoms (LUTS) at a tertiary care facility. Data collected include American Urological Association Symptom Scores (AUASS), Overactive bladder (OAB) Short Form, and Pelvic Floor Disability Index (PFDI-20) forms, flow time, flow rate, and both estimated and measured voided volumes. Baseline characteristics and demographics were recorded. Descriptive statistics and linear regression analysis were performed to examine predictors of estimated voiding volume (mL) in SAS Version 9.4 (SAS Institute, Inc., Cary, NC).

Results: Median age and BMI were 64 years (SD=15.6) and 26.9 kg/m² (SD=4.6), respectively. The median estimated voided volume and actual voided volume were 120 mL (range 1-480) and 108 mL (range 6.5-622.0), respectively. On linear regression analysis, 46.6% of patients estimated volume voided with a 20% margin of error, and 63.9% of patients estimated with a 30% margin of error. Each one-year increase in age correlated with a 2% decrease in the odds of estimating voided volume within 20% of actual volume (p<0.05). For each 1 unit increase in flow rate, there was an 8% (p<0.005) increase in the odds of estimating voided volume within 20% of actual volume.

Conclusion: Half of patients can accurately estimate volume voided with a margin of error of 20%. An increase in patient age can lead to a decrease in accuracy of estimating voided volumes, while an increase in flow rate and flow time are associated with an increase in accuracy of estimating voided volumes. Further studies are needed to determine factors that lead to more accurate measurements without comparing the accuracy of frequency volume charts.
Poster #NM165
DEVELOPMENT OF A FEMALE UROLOGY VOIDING DYSFUNCTION PHENOTYPE: OVERACTIVE BLADDER
Samir Derisavifard, Laura L. Giusto, Patricia M. Zahner, Jessica J. Rueb, Daniel A. Shoskes, Sarah C. Vij, Courtenay K. Moore
Cleveland Clinic Foundation
Presented By: Samir Derisavifard, MD

Introduction: In men, it has been shown that chronic urologic conditions show a direct correlation with the presence and severity of systemic symptoms. In women, similar associations have not been assessed. We propose the creation of a female voiding dysfunction phenotype that would quantify the presence and severity of six systemic conditions and correlate them with female-specific urologic symptoms.

Methods: A retrospective chart review was conducted on patients within a single Female Urology practice with diagnosis codes of overactive bladder (OAB), urinary urgency, frequency, or urgency incontinence. Urologic symptoms were evaluated using a modified urogenital distress inventory (UDI-6) and localized estrogen level based on menopausal status and presence of vaginal atrophy. Each category was given a score of mild (0), moderate (1), or severe (2) and totaled for a urologic score (US). Six categories of systemic comorbidities were included based on their known impact on female voiding dysfunction: cardiovascular, obesity, diabetes, stress/anxiety, sleep apnea, and neurologic. Each category was similarly graded (0-2 for each) and totaled to determine the systemic score (SS). Correlation was measured using Spearman's Rho, and ordinal logistic regression was used to model the association between US and SS, with significance set as p<0.05.

Results: The study population was composed of 311 women diagnosed with OAB. The mean total US and SS scores were 2.47±1.2 and 2.47±1.2, respectively. SS was significantly and positively associated with US, even when controlling for age (rho = 0.212, p<0.01). With a one-unit increase in SS, the odds of observing US of 0 versus any other value increases by an average of 11%. The cardiovascular (rho=0.310, p<0.01) and diabetes (rho=0.119, p<0.01) sub-components of the systemic score most significantly correlated with the US score (Table 1).

Conclusion: Systemic medical comorbidities positively correlate with urologic symptoms in women undergoing treatment for voiding dysfunction. Phenotyping using the components of the SS score can help identify modifiable conditions that once addressed could impact urologic symptoms and outcomes. Future validation in a general population is needed.

<table>
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</tr>
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<td>-0.92</td>
</tr>
<tr>
<td>SS</td>
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Poster #NM166
DORSAL ONLY BUCCAL MUCOSA VS VAGINAL-FLAP "BLANDY" URETHROPLASTY FOR FEMALE URETHRAL STRICTURE: A SINGLE-CENTER SERIES
Rachael D. Sussman, Benoit Peyronnet, MD, Ricardo Palermola, Dominique Malacarne, Michael Granieri, Christina Escobar, Lee Zhao, Nirit Rosenblum, Victor Nitti, Benjamin Brucker
New York University
Presented By: Rachael D. Sussman, MD

Introduction: Female urethral stricture (FUS) is rare and challenging from both a diagnostic and therapeutic standpoint. There is no consensus regarding the most appropriate surgical treatment for FUS. The use of buccal mucosa (BM) urethroplasty has been increasingly reported, but data are limited and focus on a ventral-onlay approach. The aim of this study was to describe the outcomes of dorsal-onlay BM urethroplasty (BMU) and ventral vaginal-flap “Blandy” urethroplasty (BU) for FUS.

Methods: All female patients undergoing BMU or BU for FUS between 2011 and 2017 at a single institution were retrospectively reviewed. The first BMU was performed in September 2014. The primary endpoint was clinical success defined as subjective improvement in voiding symptoms. Pre and postoperative evaluations involved, a symptoms assessment, examination, and urinary flow and post-void residual volume (PVR) measurements. A video-urodynamic (VUD) was performed prior to surgery except when the stricture could not be intubated by VUD catheter. A translabial ultrasound was performed in all patients since June 2017.

Results: 21 patients were included: 11 with BMU and 10 with BU. Patients undergoing BMU had strictures in the proximal (18.2%), mid (63.6%) and distal (9.1%) urethra whereas those undergoing BU had strictures in the mid (50%) and distal (50%) urethra only. Post-operative complications did not show statistical difference between BMU and BU (18.2% vs. 0%; p=0.47, respectively) and the two complications observed were minor (Claiven grade 2): 1 UTI and 1 sinusitis. The 1-year success rate was higher in the BMU group, but the difference was not statistically significant (100% vs. 75%; p=0.49). Maximum urinary flow rate and PVR improved significantly in both groups postoperatively (p<0.05). There was one case of de novo stress urinary incontinence in each group (9.1% vs. 10%; p=0.95). Stricture-recurrence free survival was similar in both groups (at 1 year: 75% vs. 74.1%; p=0.95; figure 1).

Conclusion: In female patients with urethral stricture, dorsal-onlay BM and Blandy urethroplasty provide satisfactory perioperative and short-term functional outcomes with low risks of de-novo incontinence and recurrence. Further studies are needed to confirm these findings and to help define the role of these two therapeutic options for FUS.
Poster #NM167
TEMPORAL TRENDS IN THE INCIDENCE OF PELVIC FRACTURE ASSOCIATED URETHRAL INJURIES IN UNITED STATES
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1Cedars-Sinai Medical Center, Los Angeles CA, 2University of South Dakota Sanford School of Medicine, Vermillion, SD, 3Duke University Medical Center, Durham, NC
Presented By: Hanson Zhao, MD

Introduction: Pelvic fracture associated urethral injuries (PFUIs), also known as PFUDDs, are a significant source patient morbidity leading to lifelong consequences in the forms of erectile dysfunction, stricture, and incontinence. There is a large discrepancy in the prevalence and etiologies of PFUIs between different countries, which is related to differences in motor vehicle regulations, seat belt laws, and traffic infrastructure. In the United States, statewide seat belt laws were passed from 1984-1995 and airbag requirements went into effect in 1998. We use a large contemporary population based cohort to assess the temporal trend in PFUIs after these regulations.

Methods: The National Inpatient Sample (NIS) is a weighted sample of inpatient hospital discharge data with ICD-9 procedure and diagnosis codes. Pelvic fractures were identified by any of the 808.xx ICD-9 diagnosis codes. PFUI was identified by the combination of an 808.xx diagnosis code with an ICD-9 procedure code for suprapubic tube placement (either code 57.17 or 57.18) to signify significant urethral injury. SAS v9.2 software was used to analyze frequencies. All data were analyzed with trend weights provided by the NIS to account for changes in the study design over time using years 1998-2014.

Results: Average patient age was 38 years. A total of 6853 PFUIs were identified. 784 (11.5%) patients were female. 654 patients (9.6%) died while hospitalized. The incidence of PFUI significantly decreased from 1.7 +/- 0.2 cases per 100,000 hospital discharges in 1998 to 0.7 +/- 0.1 cases per 100,000 in 2011 (p=0.0067). The incidence appears to have stabilized from 2011 to 2014. In the time frame studied, National Highway Traffic Safety Administration surveys demonstrated that seat belt use increased from 58% to 87%.

Conclusion: While the true incidence of PFUI is likely underestimated in this study, we demonstrate a decreasing trend in the incidence of PFUI in the United States from 1998 to 2014 with a significant decline from 1998 to 2011. This occurred after mandatory seat belt and airbag motor vehicle regulations that were implanted in the 1990s. This very low rate of PFUIs is excellent. However, it results in fewer opportunities to train reconstructive surgeons in complex posterior urethroplasty.
Poster #NM168
USE OF NEXT GENERATION DNA SEQUENCING TO EVALUATE THE BIOME OF UROLOGICAL PROSTHETICS: A PILOT STUDY
Seth Teplitsky, BS, Akhil Das, MD, Patrick Shenot, MD, Edouard Trabulsi, MD, Irving Hirsh, MD, Paul Chung, MD
Department of Urology, Thomas Jefferson University Hospital, Philadelphia, Pennsylvania
Presented By: Seth Teplitsky, BS

Introduction: Next-generation DNA sequencing (NGS) is an emerging technology that may be utilized to evaluate entire bacterial genomes. NGS may better characterize bacterial content compared to conventional culture techniques since cultured prostheses often return as no or non-specific growth. This pilot study examined the biome of explanted urological prostheses based on device culture and NGS sequencing results.

Methods: A retrospective review was performed of patients who underwent device explant with or without replacement in 2018. Patient demographic and surgical history were collected. At the time of explant, devices were sent for microbiology culture and swabbed steriley for DNA sequencing. DNA sequencing involved a rapid real-time PCR of the 25 most common bacteria and eight known resistance genes, as an initial screening test, and an NGS which included an evaluation of all DNA found compared against over 25,000 known DNA sequences of pathogens.

Results: Ten patients (three penile prostheses, seven artificial urinary sphincters) underwent device explant and replacement for mechanical cause (n=8) and explant alone for infection (n=1) and urethral erosion (n=1). Eight patients had growth on culture: six with staphylococcal species as the predominant bacteria and one with Streptococcus agalactiae (Figure). NGS identified additional, previously undetected bacteria in five of seven specimens with positive device cultures. Of the two patients with negative device cultures, one proceeded to show previously undetected bacteria on NGS, while the other had a negative NGS. The two patients with infection or urethral erosion demonstrated bacteria on both culture and NGS. No patients developed de novo infection after device explant at a median follow up of 2 months.

Conclusion: The NGS test allowed for the detection of bacteria from urological hardware which was previously undetected by culture. NGS may be utilized alongside culture to facilitate the treatment of de novo and active infections after device explanation. Further study is warranted with a larger cohort and longer follow-up to evaluate the clinical significance of this finding.

Figure: Flowchart detailing the outcomes of microbiology cultures and next-generation DNA sequencing (NGS) results for patients who underwent prosthesis explant with or without replacement.
Poster #NM169
EVALUATION OF TRANSGENDER PREPAREDNESS IN AN OUTPATIENT CLINIC
Seth Teplitsky, BS, May Jean Counsilman, MD, Patrick Shenot, MD, Leonard Gomella, MD, Paul Chung, MD
Department of Urology, Thomas Jefferson University Hospital, Philadelphia, Pennsylvania
Presented By: Seth Teplitsky, BS

Introduction: Transgender education in the medical field is a growing topic of interest. Transgender education is equally important for any worker who interacts with patients. Workers in an outpatient clinic include administrative staff (front desk, scheduling, and telephone room), medical assistants, nurses, physician assistants, nurse practitioners, medical students, residents, and physicians. We aim to see how prepared staff of the clinic currently is for interacting with this population.

Methods: We completed an assessment of baseline compassion, comfort, and knowledge of workers in an outpatient urology clinic using a questionnaire. The survey was created by adapting prompts from existing studies used to assess LGBT education in a medical setting. This survey aimed to assess transgender compassion, comfort, and knowledge. Each of these topics included four questions to which participants responded using a 1-5 scale, with one being the lowest/least comfortable and five being the highest/most comfortable. Responses to all questions within each section were aggregated for a mean response from 1-5. SPSS was used for ANOVA statistical analysis.

Results: The survey was completed by 42 people covering all roles within the clinic. The mean (+/-standard deviation) age of participants was 36.2 years (+/- 12.0), with a range of 23-69. 17/39 participants had received some previous transgender education. 3/17 said they felt their training was satisfactory. Mean response to the comfort sections was 3.4 (+/- 1.2). Mean response to the compassion section was 4.0 (+/- 1.1). Mean response to the knowledge was 3.1 (+/- 1.3). Comparison between the different roles within the clinic is seen in Figure, with no statistical differences seen between the groups. In the open-ended comments, 6/39 participants requested more training in some fashion.

Conclusion: These results show there is a high level of compassion towards those within the transgender community, but knowledge of how to properly care for and help these individuals’ lags behind staff members compassion. We plan to give educational sessions in the future, and re-administer this survey afterward to assess improvement.

Figure: Average responses to each section is shown above on a 1-5 scale, with 1 being the least comfortable and 5 being extremely comfortable. Average responses are separated by role within the clinic for comparison.
Poster #NM170
ASSESSMENT OF CAREGIVER BURDEN AFTER URINARY DIVERSION FOR BLADDER CANCER
Wai Lee¹, Chris Du², Una J. Lee¹, Kathleen C. Kobashi¹, John Corman¹, Alvaro Lucioni¹
¹Department of Urology, Virginia Mason, Seattle, WA, ²Department of Urology, Stony Brook Medicine, Stony Brook, NY
Presented By: Wai Lee, MD

Introduction: Primary caregivers (PC) of cancer patients have been shown to experience caregiver burden, due to chronic stressors and the psychological, behavioral, and physiological effects on their daily lives. Radical cystectomy with urinary diversion (RC) is a morbid surgery that can impact the patient’s daily function and may increase the burden on PC. Studies on PC burden have been limited, with only one prior study showing that PC burden after RC was not increased. We sought to evaluate PC burden and patient factors that may affect caregiver burden after RC.

Methods: We prospectively followed patients and their PC before and after RC. Validated questionnaires (FACT-Bi-Cys patient symptom burden score, SF-36 patient-reported survey of health, and Zarit-Burden (ZB) caregiver survey) evaluating patient and caregiver responses were performed at baseline, 6 weeks, 3, 6, and 12 months following surgery. Primary outcome assessed was change from baseline to the final ZB score. Increase in PC burden was defined by an increase in composite score of 1 or greater. Patient factors evaluated included age, BMI, preoperative Charlson Comorbidity index (CCI), preoperative American Society of Anesthesiology (ASA) class, ≥ Clavien-Dindo III complications (CDC), any rehabilitation, and any readmission.

Results: 40 patients and PC were consented and enrolled; 24/40 caregivers completed questionnaire data. Mean follow up for patients and PC was 7 months (STD 4.7) and 6.8 months, respectively (STD 4.7). 20 underwent ileal conduit and 4 orthotopic bladder substitution. 10/24 (41.7%) of patients had ≤grade 2 CDC. 12.5% of PC (3/24) reported an increase in burden of none to mild. No PC reported severe burden (score of 3 or 4 out of 4). There was no difference in patient factors for PCs who reported increased burden when compared to PCs who did not (Table 1).

Conclusion: RC can be associated with a postoperative course that may affect caregiver burden. 12% of PC report increase burden from none to mild, and the majority report stable burden over a mean time frame of 7 months. Further investigation on PC burden in bladder cancer patients is needed to fully understand the impact on PC. Findings from this study will help counsel patients and their caregivers.

<table>
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Table 1: Patient factors evaluated in relation to caregiver burden
Poster #NM171
ECTOPIC URETERS DIAGNOSED IN ADULTHOOD: PRESENTATION, DIAGNOSIS AND SURGICAL MANAGEMENT
Bogdan Toia, Mahreen Pakzad, Rizwan Hamid, Tamsin Greenwell, Jeremy Ockrim
University College London Hospital
Presented By: Jeremy Ockrim, MD, BSc(Hons), FRCS

Introduction: Ectopic ureters are a rare entity, usually diagnosed during childhood. Lifelong incontinence may be due to a missed diagnosis of ectopic ureter, but has seldom been reported in the adult literature. We describe a series of 10 patients referred to a tertiary unit with assessment, interventions and outcomes.

Methods: Patients were referred over a period of 10 years. Data including surgical history, presenting symptoms, diagnostic modalities, interventions and functional outcomes were reviewed.

Results: 9 women and 1 man had a mean age of 37 years (range 20-58). All women were referred with lifelong (low volume) leakage. The single male was referred with storage LUTS. 3 of the 9 women had previous interventions for incontinence including TVT, Botox, and bulking agent and repair of urethrovaginal fistula in one patient. Two women had upper pole heminephrectomy for non-functioning moiety, and one patient had a simple nephrectomy. All had the distal ureter left in situ prior to being referred. MRI was the predominant diagnostic tool but often took senior review to confirm the diagnosis. Interventions are shown in Table 1. Concomitant colposuspension or rectus fascial sling was performed in 2 patients. The single male had heminephrectomy and excision of seminal vesicle. Continence was achieved in 6 patients. Regular Botox was required for (pre-existing) DO. One patient had rectus fascial sling and one multiple continence surgeries culminating with bladder neck AUS placement. The man required open repair of non-healing bladder defect and currently has a suprapubic catheter in situ.

Conclusion: Ectopic ureter is a rare diagnosis in adults but should be considered in patients who describe lifelong incontinence. MRI is the imaging of choice. In 33% heminephrectomy was sufficient but in the rest bladder neck reconstruction and stress urinary incontinence surgery was required

Table 1:
Poster #NM172
A CRITICAL ANALYSIS OF FEMALE URETHRAL STRicture DISEASE: PATHOLOGIC AND HISTOLOGIC PARAMETERS FROM 7 PATIENTS UNDERGOING DORSAL VAGINAL GRAFT URETHROPLASTY

Steven Petrou, Department of Urology1, Xochiquetzal Geiger, Department of Pathology1, Ram Pathak, Department of Urology2, Steven Lomax, MD, Department of Urology1, David Thiel, Department of Urology1
1Mayo Clinic Florida, 2Wake Forest Health

Presented By: Steven Lomax, MD

Introduction: It is estimated that 2.7-8% of women with LUTS have an element of bladder outlet obstruction [1]. Of these female patients with bladder outlet obstruction, 4-18% of these cases are secondary to urethral stricture disease. We present the pathologic analysis of female urethral strictures obtained at the time of reconstructive urethroplasty.

Methods: Seven separate female urethral tissue specimens were obtained at the time of dorsal vaginal graft urethroplasty by a single surgeon (SPP). Tissue samples were serially sectioned as needed based on tissue size and then fixed in 10% formalin between 6-12 hours prior to routine processing in paraffin blocks. Serial 5-micron sections were obtained for the following stains: hematoxylin and eosin, Masson’s trichrome and elastin. Endpoint analysis included evaluation for epithelial hyperplasia and cell type, mucosal edema, degree of fibroblast/inflammatory cell infiltrate, and elastin fiber density and distribution.

Results: Seven surgical specimens were available for examination. Four specimens had an epithelial lining of stratified squamous epithelium overlying an area of fibrosis (71%), one had mixed squamous and urothelial epithelium and one only urothelial epithelium. Two specimens (29%) showed more acute injury with prominent squamous papillary hyperplasia, focal erosion and patchy areas of mucosal hemorrhage. The urethral stricture areas were variably thickened with increased and more densely packed collagen fibers seen on trichrome stain. There were varying degrees of associated mucosal edema and loose fibrovascular proliferation just beneath the epithelium and overlying the scar tissue. The stricture areas also showed associated mucosal lymphocytic inflammation ranging from only mild and patchy to focally dense with lymphoid aggregates in one specimen. Elastin stain demonstrated variation in fiber density and distribution with increased deposition and fragmentation in subepithelial areas in specimens with more epithelial hyperplasia. The highest elastin fiber density appeared to be deeper in the submucosa associated with vessels and overlying muscle bundles.

Conclusion: The etiology of female urethral stricture disease is diverse. Current management for this disease involves urethral dilation which is efficacious at best approximately 43-55% of cases. Given this rather limited success rate, further elucidation to the pathologic and histologic characteristics may illuminate more appropriate and efficacious therapeutic pathways for the management of female urethral stricture disease.
APPENDIX OR ILEUM – WHICH IS THE BEST MATERIAL FOR MITROFANOFF CHANNEL FORMATION?

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Presented By: Rachel Barratt, BMBS, BMedSci, MRCS

Introduction: The appendix is reported to have better outcomes when used as a Mitrofanoff channel than ileum in children. Outcomes in adult Mitrofanoff patients are largely unknown.

Methods: We performed a retrospective case note review of 176 consecutive adult patients (median age 42 years) having Mitrofanoff channel formation a median of 142 months (range 54-386) ago. We evaluated outcome in terms continued use and continence for each type of material used for channel formation. Ileal channels were evaluated both as one type of channel material and separately as single and double ileal channels. Statistical analysis was by Chi Squared analysis.

Results: The 176 patients a median of 51.5 months (range 2-293) follow-up (FU) available. At time of this review 89 (51%) patients were alive. At time of last FU 77% of channels were in use and 77% were continent. Outcomes at last clinic FU are listed in Table 1. P < 0.05

Conclusion: There was no significant differences in outcomes in terms of usage at last follow up between any of the material used to make Mitrofanoff channels. Patients were significantly more likely to have continence issues if channels were made out of ileum. Appendix should be the first choice for Mitrofanoff channel formation in adults.
Poster #NM174
PELVIC RECONSTRUCTIVE SURGERY PERFORMED WITH MONITORED ANESTHESIA CARE AND LOCAL ANESTHESIA
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\(^1\)Drexel University, \(^2\)Einstein Urology, \(^3\)Philadelphia Urosurgical Associates PC
Presented By: Tess Crouss, MD

Introduction: Pelvic reconstructive surgery (PRS) for pelvic organ prolapse is typically performed under general anesthesia (GA). Data is lacking on the efficacy of performing PRS under monitored anesthesia care with local anesthesia (MAC-LA). Because MAC-LA leads to faster recovery with less side effects, there is a role in expanding its utilization. Our aim is to review the PRS cases performed at our institution, for which MAC-LA is generally used, focusing on pain control.

Methods: A retrospective chart review of all PRS cases performed at a single site from 11/2015 to 7/2018 was performed. Joint cases were excluded. Demographic, intraoperative, and postoperative data were analyzed.

Results: Sixty-five separate PRS cases were analyzed, involving 57 subjects. The average age was 59. A large proportion of patients had medical comorbidities (37% with cardiovascular and 22% with respiratory disease), and chronic pelvic pain syndromes (65%). Fifty-nine of the PRS cases were performed under MAC-LA, and 6 required GA. No patient required local anesthetics above the recommended limit. For MAC-LA surgeries, the average length of hospitalization was 1.1 nights, and the average postoperative Morphine Milligram Equivalent consumption was 20.9 mg, as opposed to 3.2 nights and 157 mg for GA surgeries respectively. Intraoperative and postoperative complications (8% and 11% respectively), were rare and minor.

Conclusion: Complex PRS can safely and effectively be performed under MAC-LA in a population with a high proportion of medical comorbidities and chronic pain.
Poster #NM175
GENDER-AFFIRMING VAGINECTOMY AND COLPOCLEISIS
Helen Y. Hougen, Daniel Dugi, Kamran Sajadi
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Presented By: Helen Y. Hougen, MD

Introduction: Total vaginectomy and colpocleisis (TVC) are performed as part of gender-affirming genital surgery in transgender men. The procedure can be performed by total excision or fulguration of the vaginal mucosa, followed by closure of the vaginal space. There are few data to indicate the superiority of either excision or fulguration. At our institution, TVC is performed concomitantly with a metoidioplasty or as part of a one- or two-stage phalloplasty by a female pelvic medicine and reconstructive surgery (FMPRS)-trained urologist.

Methods: TVC was performed by excising the vaginal mucosa from the introitus distally to the vaginal cuff proximally, with the exception of the distal anterior vaginal wall which is mobilized as a flap for use in urethral lengthening. The vaginal space is closed by serial purse-string sutures. A historical cohort of all patients undergoing TVC at our institution was performed evaluating operative time, estimated blood loss, procedural complications, and the learning curve of this procedure.

Results: Between September 2016 and September 2018, 30 TVC procedures were performed as part of 11 metoidioplasties and 19 phalloplasties. The average age of our cohort was 36.5 +/- 11.6 years, 28 (93%) had a hysterectomy, and all are on testosterone. Two underwent concomitant hysterectomy early in the series, before it became our policy to not combine these procedures. The operative time for TVCs was 158 +/- 46 minutes, with a significantly shorter times in later years (p= 0.015). The mean total vaginal length was 8 +/- 1.3cm and the mean genital hiatus diameter was 2 +/- 0.6cm. Operative time increased with longer vaginal length (p = 0.027). Two patients required transfusion. One patient had C difficile colitis. There were no visceral injuries or fistulous sequelae, and no mucoceles.

Conclusion: TVC takes approximately 2.5 hours after a learning curve period and a low complication rate. We notably did not observe fistulae between the urinary tract and the vaginal space noted in prior literature (Stojanovic et al. J Sex Med, 2017). Despite the longer operative time, TVC may have several advantages over simple mucosal fulguration, and is a niche for which FMPRS-trained surgeons are ideally suited.
Poster #NM176
MODIFIED PSOAS HITCH CAN REPLACE BOARI FLAP WITHOUT COMPROMISING VASCULARITY
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Wake Forest Baptist Medical Center, Winston-Salem, NC
Presented By: Whitney R. Smith, MD

Introduction: The Boari Flap has been in the urologist’s armamentarium for tension free reconstruction of mid and proximal ureteral defects for over 70 years. However, complications can occur because of compromised blood supply due to having incisions on 3 sides of the flap, and relying on the flap base as the only source of blood supply. Rates of ureteral stricture and anastomotic leak are as high as 10 to 20%. We present our technique of a modified Psoas hitch that does not compromise blood supply, and can be as effectively as a Boari Flap in bridging long ureteral defects.

Methods: We retrospectively reviewed all patients who underwent our modification of the Psoas hitch performed by a single surgeon from 2008 to 2018. Our modification includes creating a semi-oblique cystotomy on the lowest part of the anterior and contralateral aspect of the bladder after complete release of the anterior surface of bladder. The contralateral superior vesical pedicle is sacrificed if necessary. A series of short relaxing incisions at the different tethering levels in the pseudo flap segment are made until the bladder is able to reach the healthy ureter, and the ureter is anastomosed in a nonrefluxing or refluxing technique.

Results: Patient demographics and characteristics are summarized in Table 1. 15 patients underwent this modified technique. Mean follow up was 16.9 months. 4 (27%) patients had prior radiation, 3 (20%) underwent hyperthermic intraperitoneal chemotherapy (HIPEC) for peritoneal carcinomatosis at the same time of surgery, and 1 (7%) underwent repair of a transplant ureteral stricture. 8 cases involved intraoperative consults for which there was no preoperative planning. There was 1 with postoperative leak (7%), and no patients had obstructive hydronephrosis to suggest flap ischemia. The mean length of the flap was 9.3 cm (3 cm to 16 cm).

Conclusion: Our modification of the Psoas hitch is reliable and can be used to reconstruct long ureteral strictures as well as serve as a substitution for transplant ureters. It can be performed easily with a lower complication rates than traditional Boari Flap. This procedure is especially suitable in complex patients with high morbidity (such as prior radiation and peritoneal carcinomatosis) with decreased tissue vascularity.
Poster #NM177
OUTCOMES OF PREGNANCY FOLLOWING SURGERY FOR PELVIC ORGAN PROLAPSE: A SYSTEMATIC REVIEW
Ashley Caron¹, A. Lenore Ackerman, MD, PhD², Pooja Parameshwar³, Karyn Eilber, MD¹, Jennifer Anger, MD, MPH¹
¹Department of Urology, Cedars-Sinai Medical Center, Los Angeles, CA, ²Department of Urology, Cedars-Sinai Medical Center, Los Angeles, CA, ³Stanford University School of Medicine, Stanford, CA
Presented By: Ashley Caron, BS

Introduction: Surgical intervention to correct pelvic organ prolapse (POP) is typically recommended to women after they have completed childbearing. The propensity for conservative treatment stems from concern for prolapse recurrence if the woman has another pregnancy, although there is a paucity of literature on the topic. We reviewed available literature to evaluate the safety and durability of prolapse repair in women who later sustained a pregnancy.

Methods: A systematic review was organized following guidelines provided by the Meta-Analysis of Observed Studies in Epidemiology (MOOSE) group. A comprehensive review of PubMed®, EMBASE®, and Cochrane Review® databases was completed using peer reviewed articles published prior to September 2018. Terms for pregnancy were used in conjunction with various prolapse surgery terms to create the list of searchable phrases. 1,559 articles were identified using the search terms outlined above. After abstract review, article review yielded 50 original reports, with 26 pertaining to pelvic organ prolapse.

Results: The 26 articles included were comprised of 13 case reports and 13 case series, in total describing 195 pregnancies in 172 women. The most common procedure performed to correct pelvic organ prolapse is the suture hysteropexy, largely abandoned in literature after 2001. Two case studies reported uncomplicated full-term Cesarean birth following hysteropexy at 10 and 12 weeks gestation. Although Cesarean section is favored in more recent literature, vaginal deliveries have occurred after correction for POP with few reports of recurrence. Moreover, five perinatal complications were described, three of which were not attributable to prolapse surgery. The remaining two were pain following sacrohysteropexy likely due to tension on the repair and necessitated elective term Cesarean delivery. Eighteen women reported prolapse recurrence requiring subsequent surgery, although follow-up was short or absent in a majority of the literature.

Conclusion: Although literature on the topic is sparse, available data suggests that pregnancy following pelvic organ prolapse surgery is safe. While Cesarean birth is thought to be more protective against recurrence, the rate of recurrence following vaginal birth is similar. The reported rate of perinatal complications attributable to POP corrective surgery are low. Further prospective studies are needed to provide evidence-based recommendations for pelvic organ prolapse surgery prior to completion of childbearing.
Poster #NM178

KNOWLEDGE, ATTITUDE, BEHAVIORS AND BELIEFS REGARDING PELVIC FLOOR DISORDERS IN LATINA WOMEN

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¹University of Southern California, Department of Urology, Los Angeles, CA, ²University of Southern California, Department of Obstetrics and Gynecology, Los Angeles, CA, ³University of Southern California, Department of Preventive Medicine, Los Angeles, CA

Presented By: Claudia Sevilla, MD

Introduction: Latina women have a higher burden of pelvic floor disorders (PFDs) and seek care much later than white and black women. We hypothesize that lack of health literacy and beliefs common among Latinas may contribute to this disparity.

Methods: We developed a culturally-competent questionnaire to assess knowledge, attitudes, behaviors, and beliefs (KABB) about PFDs in Latina women that included novel measures to assess determinants of seeking care, awareness and symptoms of PFDs. Furthermore, we included the Acculturation Rating Scale for Mexican Americans-II (ARSMA-II), the Explicit Healthcare Stereotype Measure (HSTM), and the Everyday Discrimination Scale (EDS). Psychometric measures included the Perceived Stress Scale (PSS). Spanish and English-speaking Latina patients with and without PFDs answered questionnaires in both public and private Urogynecologic and Urology clinics. Descriptive statistics were performed on all measures.

Results: A total of 39 women aged 37-72 completed the questionnaire. The majority were Spanish-speakers (69.2%) and born outside the US (84.6%), and 79.5% had PFD symptoms of either pelvic organ prolapse (POP) and/or urinary incontinence (UI). UI, pelvic pain, and POP symptoms were principal reasons why women felt they should be seen by a physician (Table 1). All felt it was extremely important to seek care for PFD symptoms. Surgery, exercises and medicine were the top treatments thought to be used for treating PFDs. Some women felt that prayer and home remedies were also important for improvement of symptoms. In those who delayed seeking care, reasons included thinking nothing could be done and the assumption that it was a normal part of aging. The average acculturation score was consistent with “very Mexico/Latino oriented”. Women had a higher scoring on PSS compared to group norms of women (all races/ethnicities) and Hispanics (both genders). Scoring on the HSTM and EDS revealed that most women do not feel that their race/ethnicity negatively influences their health care or their daily lives.

Conclusion: Although Latina women in our study did not feel discriminated against in their everyday lives nor when seeking healthcare, the lack of knowledge about PFDs, cultural beliefs regarding PFDs and increased levels of perceived stress may contribute to their delay in seeking care and potential outcomes of treatment.
Poster #NM179
TRENDS AND SAFETY OF CONCURRENT SACROCOLPOPEXY AND RECTOPEXY
Claire S. Burton, MD1, Catherine Bresee, MS2, Coulby Souders, MD2, Alex Hanneman3, Karyn Eilber, MD2, Jennifer T. Anger, MD2
1University of California Los Angeles, 2Cedars Sinai Medical Center, 3University of South Dakota
Presented By: Claire S. Burton, MD

Introduction: Women with pelvic floor disorders may experience both vaginal and rectal prolapse, and several recent reports have proposed the use of concurrent sacrocolpopexy and rectopexy to reduce patient morbidity and improve patient outcomes. We evaluate the temporal trends of concurrent rectopexy and sacrocolpopexy and compare complication rates between individual and concurrent procedures using the National Inpatient Sample (NIS).

Methods: The NIS, maintained by the Healthcare Cost and Utilization Project (HCUP), contains approximately 20% of all hospital admissions in the United States from a stratified sample. We identified women who underwent either sacrocolpopexy (70.77, 70.78) or rectopexy (48.75, 48.76) by ICD-9 procedure codes between 2010-2014. Complications were identified using ICD-9 diagnosis codes.

Results: There were 160,714 women who underwent sacrocolpopexy, 24,493 who underwent rectopexy, and 2,354 who had concurrent sacrocolpopexy and rectopexy during the period of 2010-2014. Rates of sacrocolpopexy decreased from 43,213 in 2010 to 19,840 in 2014 (p<0.001). Rectopexy rates were unchanged during the overall period from 4,898 in 2010 to 4,985 in 2014 (p=0.64). There was no change in rates of concurrent procedures (p=0.41). Demographic data are presented in Table 1. Those with concurrent procedures were more likely to be younger (p<0.001), have longer length of stay (LOS) (p<0.001), and higher hospital charges (p<0.001) than sacrocolpopexy alone, but LOS and hospital charges were no different than rectopexy alone. Sacrocolpopexy alone had significantly lower complication rates when comparing any complication, digestive, respiratory, and bowel complications (p<0.001) vs. either rectopexy or concurrent procedures. No differences in wound, urinary, or cardiovascular complications were seen when comparing concurrent procedures versus either alone.

Conclusion: Women undergoing sacrocolpopexy experienced fewer complications than women undergoing rectopexy, but complication rates were not increased by performing concurrent sacrocolpopexy and rectopexy when compared to rectopexy alone. Select patients who desire both sacrocolpopexy and rectopexy may benefit from concurrent procedures without increasing complications, LOS, or hospital charges. The stable trend of concurrent sacrocolpopexy and rectopexy suggests that this combined approach has yet to be widely adopted.
Poster #NM180

IS PRIMARY ELECTIVE CESAREAN DELIVERY PROTECTIVE AGAINST PELVIC FLOOR DISORDERS?

Colby P. Souders, MD¹, Farnoosh Nik-Ahd², Ashley Caron¹, Karyn Eilber, MD¹, Jennifer Anger, MD¹

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Presented By: Colby P. Souders, MD

Introduction: Studies evaluating pelvic floor disorders associated with Cesarean section (CS) have varying results. These conflicting results may stem from confounding factors, namely grouping of elective and emergency CS data together, including multiparous and primiparous women in the same data set. We performed a systematic literature review to understand the pelvic floor outcomes for primiparous women who received a primary elective CS, emergency CS, or who delivered vaginally. Our hypothesis was that primary elective CS in primiparous women would be protective against pelvic floor disorders.

Methods: We used MOOSE Criteria and searched the PubMed and the Cochrane Review from 1993-2018. We searched for articles that analyzed data on delivery methods among primiparous women. The following outcomes were evaluated: urinary incontinence (UI), fecal incontinence (FI), and pelvic organ prolapse (POP).

Results: Twenty studies met inclusion criteria for our analysis: Fourteen evaluated urinary incontinence outcomes, eight evaluated fecal incontinence outcomes, and two evaluated pelvic organ prolapse. For UI, rates after elective Cesarean section (CS) ranged from 0-30.8%, emergency CS 0-50.0%, and vaginal birth (VB) 3.8-53.1%. Pooled analysis shows a prevalence of UI to be similar between elective CS and emergency CS (16%). Prevalence of UI in VB pooled analysis was approximately 30%. The odds ratio for developing UI after VB compared to any CS was 1.8 (95% CI 1.6-2.1; p-value Only two studies examined POP, both of which found a statistically significant protective effect of any type of CS in preventing POP.

Conclusion: Among primiparous women, CS may be protective against UI and FI. However, there is significant variability in the prevalence of UI and FI between the studies. There is a paucity of data regarding the effect of elective CS on POP among primiparous women.

Table 1. Urinary Incontinence After CS and VB

<table>
<thead>
<tr>
<th>Study</th>
<th>No. of Women</th>
<th>Type of Delivery</th>
<th>Urinary Incontinence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Barren, 2013</td>
<td>213</td>
<td>Elective CS</td>
<td>20% (95% CI 3.0-38.0)</td>
</tr>
<tr>
<td>Ghego, 2013</td>
<td>205 (95% CI 35.1-51.9)</td>
<td>Emergency CS</td>
<td>22% (95% CI 3.0-38.0)</td>
</tr>
<tr>
<td>Miller, 1998</td>
<td>360</td>
<td>VB</td>
<td>30% (95% CI 17.9-42.1)</td>
</tr>
<tr>
<td>Pavone, 2005</td>
<td>327</td>
<td>VB</td>
<td>30% (95% CI 17.9-42.1)</td>
</tr>
<tr>
<td>Sibai, 1995</td>
<td>998</td>
<td>VB</td>
<td>30% (95% CI 17.9-42.1)</td>
</tr>
<tr>
<td>Gruia, 2004</td>
<td>363</td>
<td>VB</td>
<td>50% (95% CI 39.4-60.6)</td>
</tr>
<tr>
<td>Fetch, 2004</td>
<td>218</td>
<td>VB</td>
<td>30% (95% CI 17.9-42.1)</td>
</tr>
<tr>
<td>Heard, 2004</td>
<td>202</td>
<td>VB</td>
<td>30% (95% CI 17.9-42.1)</td>
</tr>
<tr>
<td>Chalmers, 2003</td>
<td>213</td>
<td>VB</td>
<td>30% (95% CI 17.9-42.1)</td>
</tr>
<tr>
<td>Vercellini, 2005</td>
<td>205 (95% CI 35.1-51.9)</td>
<td>VB</td>
<td>30% (95% CI 17.9-42.1)</td>
</tr>
<tr>
<td>Athens, 2010</td>
<td>352</td>
<td>VB</td>
<td>30% (95% CI 17.9-42.1)</td>
</tr>
</tbody>
</table>

Note: VB = Vaginal Birth
Poster #NM181
LONG-TERM REOPERATION RATES ARE EQUIVALENT FOR PELVIC ORGAN PROLAPSE REPAIRS WITH BIOLOGIC AND SYNTHETIC GRAFTS IN A LARGE POPULATION BASED COHORT
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1Stanford University, Department of Urology, Stanford, CA, 2Santa Clara Valley Medical Center, Department of Urology, San Jose, CA, 3Stanford University, Department of Obstetrics and Gynecology, Stanford, CA
Presented By: Kai B. Dallas, MD

Introduction: The use of synthetic mesh to augment pelvic organ prolapse (POP) repairs has been declining due to growing concerns regarding long-term mesh specific complications. As a result, there is interest in suitable graft alternatives such as biologic materials, which possess the theoretical benefit of improved tissue remodeling with a decreased risk of persistent vaginal erosion. Limited data however exists comparing long term outcomes of biologic and synthetic grafts when used for POP repair.

Methods: Using the California Office of Statewide Health Planning and Development database, we identified all women who underwent index inpatient POP repair with either a synthetic or biologic graft between 2005-2011 in the state of California. ICD-9 and CPT codes were used to identify subsequent surgeries in these patients for either recurrent POP or a graft complication.

Results: A total of 14,192 women underwent POP repair with a biologic (14%) or synthetic graft (86%) during the study period. In the cohort, there was an overall associated repeat surgery rate of 5.6%. With a median follow-up of 2 years, women with biologic grafts had an increased risk of surgery for recurrent pelvic organ prolapse compared with synthetic mesh (3.6% vs. 2.5%, p=0.01). Conversely, women with synthetic grafts had a higher risk of repeat surgery for a graft complication (3.0% vs. 2.0%, p=0.02). There were no significant differences between the overall risk of repeat surgery in patients who received biologic versus synthetic grafts during the follow-up period (5.7% vs. 5.6%, p=0.79).

Conclusion: We demonstrate in a large population-based cohort that biologic grafts are associated with an increased risk of repeat surgery for a POP recurrence while synthetic mesh is associated with an increased risk of repeat surgery for a graft related complication. These competing risks result in an equivalent overall associated repeat surgery rate between the groups suggesting that neither synthetic nor biologic grafts should be excluded based on their risk profile.
Poster #NM182
POSTPARTUM WOMEN’S EXPERIENCE WITH PELVIC ORGAN PROLAPSE: INSIGHT REVEALED FROM REDDIT
Chris Du¹, Wai Lee², Amin Katherine², Kathleen C. Kobashi², Alvaro Lucioni², Una J. Lee²
¹SUNY Stonybrook, ²Virginia Mason
Presented By: Chris Du, BA

Introduction: Pelvic organ prolapse (POP) is a prevalent condition in postpartum women, yet often not discussed due to social stigma. Internet discussion forums are used to seek health information. Reddit is one such commonly used platform for anonymous discussion. The objective is to qualitatively analyze the perspectives of postpartum women on POP, as expressed on Reddit, to gain deeper insight into the patient perspective.

Methods: Reddit was chosen due to its popularity and user generated content. The Subreddit group “Beyondthebump,” a forum for postpartum mothers with >57,000 subscribers, was searched in 7/2018 for the term “prolapse” to collect all user-generated postings on POP. Other forms of prolapse (e.g. rectal prolapse) were excluded. Posts discussing POP were analyzed qualitatively by 2 independent researchers. The principles of grounded theory by Charmaz were applied, including line-by-line coding of extracted content utilizing key phrases and grouping together of similarly-coded phrases into preliminary themes. These themes were used to derive emergent concepts.

Results: 28 unique posts with 390 responses from 2014-2018 were analyzed. Qualitative analysis resulted in 3 preliminary themes (Table 1). (1) There was a knowledge gap regarding POP. Women were unaware POP could occur after pregnancy and delivery, and frustrated by lack of discussion around POP. (2) Women expressed a need for comprehensive immediate care, often achieved with pelvic floor physical therapy. (3) POP was associated with difficulty with daily life. Women suffered from pain, unsatisfactory sexual activity, depression, and hopelessness.

Three emergent concepts were derived (Table 2). (1) POP is a difficult, debilitating condition. Women suffer mentally and physically and have life routines disrupted. (2) Women are self-driven and actively sought help. (3) There was motivation to increase awareness of POP, specifically for postpartum women.

Conclusion: Postpartum women’s perspectives on POP focused on the difficulty of continuing life routines. Women were self-driven in seeking help, and motivated to promote awareness of POP. Physicians are often taught that POP is a non-painful, quality of life condition. However, these findings of postpartum women’s internet postings present POP as a more impactful, debilitating condition. Through deeper understanding of patient perspectives, physicians can better meet women’s needs and improve patient-centered care for POP.
Poster #NM183
TRANSVAGINAL REPAIR OF PELVIC ORGAN PROLAPSE AFTER CYSTECTOMY/ANTERIOR PELVIC EXONERATION
Iryna Crescenze, Paholo Barbolgio Romo, Priyanka Gupta, Daniel Morgan
University of Michigan
Presented By: Iryna Crescenze, MD

Introduction: Pelvic organ prolapse in women after cystectomy and/or anterior pelvic exenteration is a rare condition that is technically challenging to correct. Both vaginal and abdominal approach to operative repair has been described in the literature, however reports are small case series with limited outcome data. The objective of this study is to describe our surgical experience with this complex condition.

Methods: Patients undergoing pelvic organ prolapse repair after cystectomy or anterior pelvic exenteration from 1/1/2010 to 9/1/2018 at a single institution were identified through key word search of the electronic medical records. Clinical, demographic, and outcome data was extracted and analyzed. Only patients who had a cystectomy or anterior pelvic exenteration for urologic indications by a urologic surgeon were included. Patients undergoing the procedure for gynecologic malignancies were excluded.

Results: Over an 8-year period, 10 patients had transvaginal surgical repair of pelvic organ prolapse after cystectomy/anterior pelvic exenteration. The cohort was on average 68.7+/- 8.4 years old, 3 women had previous hysterectomies while the remainder had a hysterectomy at the time of cystectomy. The indication for cystectomy was bladder cancer in 9/10 patients and bladder outlet obstruction in 1/10. Ileal conduit urinary diversion was utilized in 9/10 patients and catheterizable continent diversion in 1 patient. Anterior vaginectomy was done in 6/10 patients. Median time to prolapse symptoms was 5.5 (0-42) months, time to surgical intervention was 13.5 (6-44), and the maximum point of prolapse ranged from 2-8 cm pass the hymen. Four patients had sacrospinous ligament suspension, 2 had suture based anterior repairs, 3 had augmented anterior enterocele repair with biologic material, and 1 had a colpoclesis. Concomitant posterior repairs were done in 7/10 patients. Three patients had complications – an enterotomy which was repaired during the case, readmission for pain control, and vaginal bleeding that was managed conservatively without a transfusion. At an average of 16.0+/- 16.7 months of follow up 3/10 patients had symptomatic recurrence and 1 had a repeat repair.

Conclusion: Transvaginal repair of pelvic organ prolapse after cystectomy/anterior pelvic exenteration is a feasible and effective treatment option with 70% long term success rates.
Poster #NM184

USING DIGITAL ETHNOGRAPHY TO UNDERSTAND THE BIOPSYCHOSOCIAL ILLNESS EXPERIENCE OF WOMEN SUFFERING FROM PELVIC ORGAN PROLAPSE

Gabriela Gonzalez1,2, Yuliya Zektser1,3,4, Carine Khalil, PhD3,4, Kristina Vaculik3,4, Corey Arnold, PhD5, Christopher V. Almario, MD, MSHPM3,4,6,7, Brennan M.R. Spiegel, MD, MSHS3,4,6,7, Jennifer T. Anger, MD, MPH2
1David Geffen School of Medicine, University of California, Los Angeles, CA, 2Department of Surgery, Division of Urology, Cedars-Sinai Medical Center, Los Angeles, CA, 3Division of Health Services Research, Cedars-Sinai Medical Center, Los Angeles, CA, 4Cedars-Sinai Center for Outcomes Research and Education, Los Angeles, CA, 5Medical Imaging Informatics, Department of Radiology, UCLA, Los Angeles, CA, 6Division of Informatics, Cedars-Sinai Medical Center, Los Angeles, CA, 7Division of Digestive and Liver Diseases, Cedars-Sinai Medical Center, Los Angeles, CA
Presented By: Gabriela Gonzalez, BS

Introduction: Although pelvic organ prolapse (POP) has a prevalence of 3-8%, feelings of shame and confusion have kept women from addressing their concerns with medical providers. Previous studies have focused on smaller focus groups and questionnaires to understand the patient experience. We sought to conduct a large-scale online community-based research analysis where patients share information anonymously, to characterize the decision-making, behavioral, psychological and illness experience of patients.

Methods: We collected 3,541 posts from 117 social media sites using a Java-based natural language processing platform utilizing keywords to automatically identify relevant posts from sites such as Facebook, Healthmagic, and Reddit. Additionally, we contracted with Treato – a social media data mining service that maintains an extensive database of patient content derived from e-forum health-related websites to provide us with posts from their database. 200 randomized posts were analyzed using a qualitative grounded theory methodology to identify preliminary themes. To substantiate our qualitative analysis, we applied a Latent Dirichlet Allocation (LDA) probabilistic topic modeling process to our dataset of 3,541 posts to allow for semantic theme discovery of the entire dataset.

Results: Our qualitative analysis generated four themes with various subthemes (Figure 1). The LDA topic modeling analysis identified overlapping themes and the discussion of specific sector defects (cystocele, rectocele, etc.), access to specialty care and alternative homeopathic therapies as three additional themes. The posts centered around women’s knowledge acquisition and symptoms to achieve either a surgical or non-surgical management resolution. Patients valued the practical advice from peers who had undergone similar surgeries. The online forums included both negative and positive perceptions regarding operation effectiveness and complications. Similar contradictory perceptions existed for non-surgical management, regardless of the level of evidence. Additionally, many behavioral recommendations were given that are not supported in the medical literature, such as having a “well-women posture” and avoidance of certain recreational outdoor activities. Other women felt they had not received appropriate counseling regarding birth trauma.

Conclusions: This ethnographic analysis of social media interactions demonstrated that women need additional information to reach a decision regarding surgical management and have knowledge concerns about the repair of various sector defects.
Poster #NM185
ROBOT-ASSISTED LAPAROSCOPIC SACROCOLPOPEXY WITH AUTOLOGOUS FASCIA LATA: TECHNIQUE AND INITIAL OUTCOMES
Victoria C.S. Scott1, Janine L. Oliver2, Michelle Van Kuiken1, Frank Lin1, Nika Vinson1, Shlomo Raz1, Ja-Hong Kim1
1Department of Urology, David Geffen School of Medicine at UCLA, Los Angeles, CA, 2Division of Urology, University of Colorado School of Medicine, Aurora, Colorado
Presented By: Michelle Van Kuiken, MD

Introduction: Pelvic reconstructive surgery is increasingly being performed with autologous grafts to avoid complications of synthetic mesh and improve the durability of repair. Harvesting autologous fascia lata (AFL) minimizes morbidity and provides a reliable source of robust connective tissue to improve surgical outcomes. To our knowledge, at present, minimally-invasive robotic sacrocolpopexy (RSC) with AFL has not been described. We present our technique and initial experience with performing RSC augmented with AFL.

Methods: A retrospective review was conducted examining the records of all patients who underwent RSC with AFL between January 2015 and November 2017. The operative technique included initial harvest of a 1 x 12 cm segment of fascia lata followed by RSC performed using the previously described method for use of autologous fascia in abdominal SC. Outcomes evaluated include recurrence of prolapse on physical exam, prolapse symptoms, urinary incontinence, patient satisfaction based on PGI and complications.

Results: Twelve patients were identified with a median age of 68 years (range 46-77 years) at the time of RSC with AFL. Eleven patients had a history of prior sling and/or vaginal mesh. Five patients had prior midurethral slings (MUS), two had transvaginal mesh (TVM), two had TVM and MUS, and two had RSC with mesh and MUS. The median operative time was 225 min (177-302 min). Median estimated blood loss was 150 cc (100-150). There were no intraoperative complications. Median length of hospital stay was 2 days (1-11). One patient had a prolonged hospital stay of 11 days due to ileus. After a median follow-up of 14.7 months (5.7 to 39 months), the median PGI-I response was 2 (range of 1-3, very much to a little better). No recurrent or persistent apical prolapse was observed. Three patients (25%) reported recurrence of sensation of a vaginal bulge, which were all due to anterior vaginal wall prolapse.

Conclusion: RSC can be performed with AFL and should be considered in patients with a history of mesh complications. Overall patient satisfaction was high and. While these short-term outcomes are encouraging, further studies will be needed to assess long-term durability of anatomic results.
Poster #NM186
OUTCOMES OF SACROCOLOPOPEXY WITH CONCURRENT COLORECTAL SURGERY FOR MULTICOMPARTMENT PROLAPSE REPAIR
Carrie A. Stewart, Hanson Zhao, Gonzales Gabriella, Christopher Gonzales-Alabastro, Karen Zaghiyan, Beth Moore, David Magner, A. Lenore Ackerman, Jennifer Anger, Karyn Eilber
Cedars-Sinai Medical Center
Presented By: Carrie A. Stewart, MD

**Introduction:** There is limited data regarding the safety and outcomes of combined sacrocolpopexy and rectopexy. We review our experience with sacrocolpopexy and concurrent colorectal surgery (CCRS).

**Methods:** We performed a retrospective review of 172 consecutive patients who underwent sacrocolpopexy by three FPMRS surgeons at a single institution. Of these, 20 were CCRS cases. Data reviewed included age, BMI, estimated blood loss (EBL), operative time, type of graft material, concomitant hysterectomy, concomitant sigmoid resection, conversion to open surgery, perioperative infection, and readmission.

**Results:** Of 172 sacrocolpopexy cases performed, 20 were CCRS cases. Average follow up for the CCRS group was 8 months (range 1-37). Eleven (55%) underwent rectopexy, six (30%) had rectopexy and sigmoid resection, and three had other CCRS: hemorrhoidectomy (1), Moskowitz procedure (1), and jejunal pouchpexy (1). Eight (40%) procedures were performed open, and the remainder were robotic-assisted. One robotic case was converted to open due to extensive adhesions. Five had concurrent hysterectomy. Apical suspension was performed with synthetic mesh in seven cases and biologic graft in 13 cases. There was no significant difference in operative time between sacrocolpopexy alone (206 minutes, range 145 to 485), versus with CCRS (240 minutes, range 133-510), p = 0.08. Average EBL for the colpopexy alone group versus the CCRS group was 57 ml (range 5-400) versus 72 ml (range 20-250), respectively. (p = 0.2). There were no readmissions for CCRS and no perioperative infections.

**Conclusion:** CCRS at the time of sacrocolpopexy adds no significant additional operative time and is not associated with increased EBL or infection compared to sacrocolpopexy alone. Furthermore, CCRS at time of sacrocolpopexy confers no additional risk to colpopexy alone and should be considered for the patient with multicompartment prolapse.
Poster #NM187
OUTCOMES AFTER IMPLEMENTATION OF GUIDELINES LIMITING OPIOIDS AFTER UROGYNECOLOGIC SURGERY
Shirly Solouki, MD1, Nitya Abraham, MD2
1Albert Einstein College of Medicine/Montefiore Medical Center Department of OB/GYN, 2Albert Einstein College of Medicine/Montefiore Medical Center Department of Urology
Presented By: Shirly Solouki, MD

Introduction: Opioid abuse and overdose is a growing epidemic in the United States. This is the second phase of a study on opioid prescription and usage following urogynecologic surgery. The aim is to examine pain control outcomes after implementing guidelines limiting opioids after urogynecologic surgery.

Methods: This is an ongoing prospective observational study of female patients undergoing urogynecologic surgery (prolapse or incontinence) from July to September 2018 by four surgeons. Two of the surgeons implemented new postoperative pain management guidelines limiting the number of opioid tablets prescribed (≤10) and advocating for standing acetaminophen and ibuprofen. Patients receiving ten or less opioid tablets were compared to patients receiving over ten opioid tablets. Patients were surveyed after surgery regarding postoperative opioid usage, refill requirements and satisfaction score. Demographic information was obtained from charts. T-test was used to compare continuous variables and chi-squared/Fisher’s exact test were used to compare categorical variables.

Results: Thirty-eight patients were eligible and contacted, of whom 34 patients responded. Twenty patients were part of the modified opioid group (≤10 tablets) and fourteen patients were part of the standard group (>10 tablets). No significant demographic differences were observed between both groups. The mean number of tablets prescribed was 6.3 (SD 4.5) in the modified group and 19.4 (SD 5.7) in the standard group (p<0.0001). The mean number of tablets used was 4.9 (SD 4.1) for the modified group and 12 (SD 8.5) for the standard group (p=0.003). The mean satisfaction score was 4.2 for both the modified group (SD 1.02) and the standard group (SD 0.99, p=0.82). 10% of patients requested refills in the modified group, compared to none in the standard group. 66% of patients in the modified group used 75% or more of their opioids, compared to 33% of patients in the standard group.

Conclusion: Satisfaction with postoperative pain management does not appear to be affected by decreasing opioids prescribed and advocating non-opioid alternatives. Although limiting opioids may result in more refill requests, overall opioid use is decreased and less tablets are left unconsumed decreasing the risk of misuse.
Poster #NM188
FACTORS CONTRIBUTING TO HEALTH DISPARITIES IN SPANISH-SPEAKING LATINA WOMEN WITH PELVIC FLOOR DISORDERS
Claudia Sevilla1, Christine Horton1,2, Katherine Volpe1,2, Lourdes Baezconde-Garbanati3, Jennifer Unger3, Mariana Stern1,3, Larissa Rodriguez1
1University of Southern California, Department of Urology, Los Angeles, CA, 2University of Southern California, Department of Obstetrics and Gynecology, Los Angeles, CA, 3University of Southern California, Department of Preventive Medicine, Los Angeles, CA
Presented By: Claudia Sevilla, MD

Introduction: Latina women bear a disproportionate burden of symptomatic pelvic floor disorders (PFDs) compared with other racial/ethnic groups. Disparities have been identified across the continuum of care; for diagnosis, treatment and surgical outcomes. The reasons underlying these disparities are not clearly understood. This study assessed the knowledge, attitude, behaviors and beliefs in Spanish-speaking Latina women with PFDs to begin to understand the reasons underlying these disparities.

Methods: Spanish-speaking women with pelvic organ prolapse (POP) and/or mixed urinary incontinence (MUI) were recruited from a public Urogynecology specialty clinic in Los Angeles. Two focus groups (n=18) were conducted by a Spanish-speaking moderator. Topics addressed knowledge and cultural beliefs about PFDs, concerns regarding symptoms, determinants of seeking care, self-perception and relationships with partners after being diagnosed with PFDs. The focus group transcripts were qualitatively analyzed using Grounded Theory methodology.

Results: Several themes emerged from our analysis, which were grouped into three categories: knowledge and beliefs, personal responses to symptom onset, and behavioral responses to symptom onset (Table 1). Regarding knowledge and beliefs, stereotypes regarding PFDs exist and cultural barriers inhibit Latina women from openly discussing their symptoms; however, these women voiced a strong desire for change at both the community and personal level to increase awareness about PFDs. Personal responses to symptom onset included an undesirable emotional response, barriers to seek help, and for some women a change in self-perception. The behavioral response to symptom onset ultimately impacted personal relationships, as well as resulted in delays in seeking care and varied treatment choices.

Conclusion: Spanish-speaking Latina women with PFDs are heavily influenced by their culture and lack of knowledge of the disease process which produces feelings of shame, fear and isolation. As a result, these patients avoid discussions regarding their symptoms, and ultimately delay care and treatment until their condition is very advanced. The Latina women in our focus groups were motivated and empowered to change stereotypes regarding the disease and agreed that more public awareness is needed, specifically in the Latino community, to help make the prevalence of PFDs known and to educate women that it is normal and healthy to talk about PFDs.
Poster #NM189
EFFECT OF PROLAPSE REDUCTION ON VOIDING PARAMETERS DURING URODYNAMIC EVALUATION OF WOMEN WITH PELVIC ORGAN PROLAPSE
Daniela Kaefer, MD, Elizabeth Ferry, MD, Natasha Ginzburg, MD
SUNY Upstate Medical University, Dept. of Urology
Presented By: Daniela Kaefer, MD

Introduction: The pelvic organ prolapse quantification system (POP Q) was first developed in 1996, and has become the most widely used staging system for pelvic organ prolapse in urogynecologic literature. Previous studies using the Baden-Walker Halfway System demonstrated increased obstructive voiding symptoms in women with higher degrees of prolapse, though this has not been assessed with POP Q definitions. We aimed to evaluate for evidence of obstruction on urodynamic testing (UDS) and improvement in voiding parameters with reduction.

Methods: A query was done of female patients who underwent UDS between January 1, 2015 and December 31, 2017 by two female urology providers. We identified patients seen for symptomatic pelvic organ prolapse based on provider documentation and POP Q score. Patients with neurogenic bladder, isolated posterior compartment prolapse, or with incomplete data were excluded. Data was obtained from retrospective chart review. Outlet obstruction was defined using the bladder outlet obstruction index (BOOI). Chi square analysis and two sided T test were used to compare groups with significance at p<0.05.

Results: Fifty nine women met criteria for inclusion, with 31 patients exhibiting stage 2 prolapse and 28 patients exhibiting stage 3 or 4 prolapse. Mean age was 63 for stage 2 group (Range 42-86) and 66 for stage 3-4 group (range 41-91), p=0.25. Average BMI was 29 in both groups. Proportion of patients with previous pelvic surgery, diagnosis of diabetes, and previous vaginal deliveries did not vary significantly. Post-void residual and maximum detrusor voiding pressure did not vary significantly in either non-reduced or reduced states (p=0.65, 0.84; p=0.81, 0.88). There was no significant difference in BOOI findings amongst POP Q prolapse stages. Only one patient, who had stage 2 prolapse, met criteria for obstruction on BOOI, and this did not change with reduction.

Conclusion: Detrusor voiding pressures and post void residuals were similar in patients with stage 2 prolapse when compared to patients with stage 3 and 4 prolapse. Higher stage of prolapse did not correlate with increased bladder outlet obstruction. There was no improvement in voiding parameters seen with reduction of prolapse. These findings challenge previously held notions regarding the effects of prolapse on bladder emptying.
Poster #NM190

DOES PELVIC SURGERY IMPACT THE EFFICACY OF PELVIC FLOOR PHYSICAL THERAPY FOR PELVIC PAIN?

Esther Han, DO1, Laura Nguyen, MD2, Jason Gilleran, MD1,3, Jamie Bartley, DO1,3, Lisa Odabachian, P.T.1, Kim Killinger, MSN, Kenneth Peters, MD1,3, Yi Ling Dai3, Judith Boura, MS4, Larry Sirls, MD1,3

1Beaumont Health, 2McMaster University, 3Oakland University William Beaumont School of Medicine, 4Ascension Macomb-Oakland Hospital

Presented By: Esther Han, DO

Introduction: Pelvic floor physical therapy (PFPT) is effective for myofascial pelvic pain. We look at whether a history of prior pelvic surgery affects patient outcomes.

Methods: We performed a retrospective review of patients referred for pelvic floor physical therapy (PFPT) due to pelvic pain between March 2015 through February 2016. Variables including the Numerical Rating Scale (NRS) for pain (both average (AVG) and worst day (WST) scores), the Pelvic Floor Distress Inventory questionnaire (PFDI) and the Pelvic Floor Impact Questionnaire (PFIQ) were collected at the first encounter and at the last encounter. Patients with a history of pelvic surgery (SGY) were compared to those who did not (N-SGY) using descriptive statistics and Wilcoxon rank sum tests.

Results: A total of 91 patients were included. 55% (50/91) of patients had prior pelvic surgery, most commonly hysterectomy (36/50). Other surgeries included salpingectomy, endometrial ablation, myomectomy, bladder suspension, ovarian cyst removal, anal fissure, oophorectomy, sacralcolpopexy and midurethral sling. The SGY group was older (mean 53 vs. 41, p=0.0002) and had undergone more deliveries (median 2 vs. 0, p=0.004). Median NRS scores for AVG and WST at first encounters were significantly higher for SGY than N-SGY; at last encounter, however, these scores were not significantly higher than N-SGY. Both groups had significant intragroup AVG and WST NRS score improvements from first to last encounters. (see Table). PFDI was significantly higher for SGY at first encounter (p=0.007) and last encounter (p=0.003) and within group analysis showed only N-SGY significantly improved (SGY: n=23, -19, p=0.24; N-SGY: n=22, -31, p < 0.0001). Baseline PFIQ scores were not different for SGY vs. N-SGY groups yet improvement within both groups was significant (first to last encounters SGY: n=24, -28, p=0.004; N-SGY: n=17, -28, p=0.004).

Conclusion: For patients who underwent PFPT for pelvic pain, significant improvement in NRS and PFIQ scores were seen regardless of whether or not they had a history of pelvic organ surgery. PFDI scores were significantly improved for the N-SGY group only after PFPT.

<table>
<thead>
<tr>
<th></th>
<th>SGY (N)</th>
<th>N-SGY (N)</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>First ENC AVG Pain score (median)</td>
<td>6 (44)</td>
<td>5 (35)</td>
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<tr>
<td>Last ENC AVG Pain score</td>
<td>4 (19)</td>
<td>2 (11)</td>
<td>0.17</td>
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<tr>
<td>Intragroup p-value</td>
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<td>0.012</td>
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<tr>
<td>First ENC WST pain</td>
<td>9 (42)</td>
<td>8 (33)</td>
<td>0.016</td>
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<tr>
<td>Last ENC WST pain</td>
<td>7 (18)</td>
<td>4 (11)</td>
<td>0.14</td>
</tr>
<tr>
<td>Intragroup p-value</td>
<td>0.012</td>
<td>0.002</td>
<td></td>
</tr>
</tbody>
</table>

Table. Median average (AVG) and worst day (WST) numerical rating scale (NRS) pain scores for surgery (SGY) and non-surgery (N-SGY) groups at first and last encounters (ENC).
Poster #NM191
DE NOVO DEFECATORY SYMPTOMS AND POSTERIOR COMPARTMENT PROLAPSE AS A COMPLICATION OF SACROCOLOPSEY
Hanson Zhao¹, Carrie A. Stewart¹, Gabriela Gonzalez², Christopher Gonzales-Alabastro², A. Lenore Ackerman¹, Karyn Eilber¹, Jennifer T. Anger¹
¹Cedars-Sinai Medical Center, Los Angeles CA, ²UCLA College of Medicine, Los Angeles CA
Presented By: Hanson Zhao, MD

Introduction: The association between pelvic organ prolapse and defecatory symptoms is neither well understood nor well described. The decision to perform a posterior repair during sacrocolpopexy is usually based on surgeon discretion. While sacrocolpopexy alone can improve posterior wall defects, it may also lead to an increase in defecatory symptoms and posterior wall prolapse in some patients. We describe our experience with de novo defecatory symptoms and new onset symptomatic rectocele after sacrocolpopexy.

Methods: We performed a retrospective review of 172 consecutive patients who underwent open or robotic sacrocolpopexy by three FPMRS surgeons at a single institution. We identified patients who developed de novo defecatory symptoms (ie obstruction, soiling, splinting) and/or a newly symptomatic rectocele postoperatively. We analyzed their characteristics, history of prior prolapse surgeries, changes between their pre and postoperative physical exam, history of prior prolapse surgeries, and need for reoperation.

Results: Average follow up was 13.7 months. A total of nineteen (12%) patients developed de novo defecatory symptoms after sacrocolpopexy, nine of whom did not have a documented rectocele after sacrocolpopexy. Twelve of the nineteen patients had a documented rectocele on preoperative exam, but only two patients underwent a concurrent posterior repair at the same time of sacrocolpopexy. These two patients also developed a recurrent rectocele. Four of the twelve patients with pre-operative recognition of a rectocele had a persistent rectocele after sacrocolpopexy. Four patients developed a de novo rectocele after isolated sacrocolpopexy.

Conclusion: Although there is literature supporting sacrocolpopexy as sufficient in addressing posterior defects, 12% of patients in our series developed new onset defecatory symptoms, and 5.2% (9) developed defecatory dysfunction without rectocele. Patients should be counseled regarding risk of developing de novo defecatory symptoms after sacrocolpopexy. This may be due to anatomic overcorrection of anterior vaginal support relative to posterior support, sigmoid manipulation, or distortion of vaginal anatomy due to suture placement at the promontory (which is arguably not anatomic). Further prospective studies should investigate the etiology of defecatory symptoms after sacrocolpopexy so that preventive techniques can be performed.
Poster #NM192  
A NATIONAL CONTEMPORARY ANALYSIS OF PERIOPERATIVE OUTCOMES FOR MINIMALLY-INVASIVE SACROCOLOPOPEXY VERSUS VAGINAL APICAL SUSPENSION  
Brian J. Linder, MD, MS1, Boris Gershman, MD2, Katherine Bews1, Amy Glasgow1, John Occhino, MD1  
1Mayo Clinic, 2Brown University  
Presented By: Brian J. Linder, MD, MS

Introduction: To evaluate the perioperative morbidity of vaginal vault prolapse surgery between minimally invasive sacrocolpopexy (MISC) and non-mesh apical vaginal surgeries using data from a contemporary nationwide cohort.

Methods: The American College of Surgeons’ National Surgical Quality Improvement Program (NSQIP) database was used to identify women that underwent apical prolapse surgery via a vaginal approach or minimally-invasive sacrocolpopexy (MISC) from 2010-2016. Associations of surgical approach with 30-day complications, prolonged hospitalization, and reoperation were evaluated using logistic regression. Readmission within 30 days was calculated by the person-years method and Cox proportional hazard models.

Results: Overall, 6406 women underwent surgery, including 3867 (60%) via a vaginal approach and 2539 (40%) MISC. Patients undergoing MISC were younger (p<0.0001), less likely to have hypertension (p=0.04) or COPD (p=0.009), with lower ASA scores (p<0.0001), and higher preoperative hematocrit (p=0.009). The MISC cohort had a lower rate of minor complications (3.9% vs 5.5%; p=0.004), urinary tract infection (3.3% vs 4.8%; p=0.005), and prolonged hospitalization (5.3% vs 8%; p <0.0001), with a higher rate of respiratory (p=0.03) and nephrologic (p=0.006) complications. On multivariable analysis, there were no significant associations of MISC with the risk of 30-day complications (OR 1.55, 95%CI 0.94, 2.55; p=0.09), prolonged hospitalization (OR 0.95, 95%CI 0.76, 1.2; p=0.68), readmission (HR 1.02, 95%CI 0.73, 1.53; p=0.77), or reoperation (OR 0.95, 95%CI 0.57, 1.59; p=0.85).

Conclusion: MISC is associated with similar rates of 30-day complications, prolonged hospitalization, readmission, and reoperation compared to non-mesh vaginal surgeries for apical prolapse.
Poster #NM193
AETIOLOGY AFFECTS THE LONG TERM OUTCOME OF THE MITROFANOFF CHANNEL IN ADULTS.
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University College London Hospital, UCLH@Westmoreland Street. London W1G9PH
Presented By: Rachel Barratt, BMBS, BMedSci, MRCS

Introduction: Outcomes in adult Mitrofanoff patients are largely unknown. Revision rates of up to 50% have been reported in children and 85% in adults.

Methods: We performed a retrospective case note review of 176 consecutive adult patients (median age 42 years) having Mitrofanoff channel formation a median of 142 months (range 54-386) ago. We evaluated outcome in terms continued use, continence, stones, need for endoscopic and/or open revision. We correlated these outcomes with indication for Mitrofanoff formation. Statistical analysis was by Chi Squared analysis.

Results: The 176 patients a median of 51.5 months (range 2-293) follow-up (FU) available. Outcomes at last FU are listed in Table 1. P < 0.05

Conclusion: Mitrofanoff formation was successful (used by patient and continent) in 77% of adult patients at the expense of stone development in 19%, a 49% endoscopic and a 39% open revision rate. Stone development rate was highest in patients with congenital aetiology whilst revision rates were

<table>
<thead>
<tr>
<th>Indication</th>
<th>N</th>
<th>In Use</th>
<th>Dry</th>
<th>Stones</th>
<th>Endoscopic/Skin Revision</th>
<th>Open Revision</th>
</tr>
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<tbody>
<tr>
<td>Cancer</td>
<td>23</td>
<td>79%</td>
<td>75%</td>
<td>17%</td>
<td>39%</td>
<td>35%</td>
</tr>
<tr>
<td>Congenital</td>
<td>38</td>
<td>88%</td>
<td>88%</td>
<td>26%</td>
<td>42%</td>
<td>18%</td>
</tr>
<tr>
<td>Complex Incontinence</td>
<td>39</td>
<td>72%</td>
<td>68%</td>
<td>15%</td>
<td>64%*</td>
<td>64%*</td>
</tr>
<tr>
<td>Neurogenic</td>
<td>57</td>
<td>67%*</td>
<td>70%*</td>
<td>18%</td>
<td>40%</td>
<td>51%</td>
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<tr>
<td>Bladder Pain Syndrome</td>
<td>19</td>
<td>74%</td>
<td>79%</td>
<td>16%</td>
<td>47%</td>
<td>32%</td>
</tr>
<tr>
<td>All</td>
<td>176</td>
<td>77%</td>
<td>79%</td>
<td>19%</td>
<td>49%</td>
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Poster #NM194
ROBOT-ASSISTED BLADDER NECK ARTIFICIAL URINARY SPHINCTER IMPLANTATION IN MALE PATIENTS WITH NEUROGENIC STRESS URINARY INCONTINENCE: A MULTICENTER STUDY
Benoit Peyronnet, MD¹, Florence Encatassamy, MD², Juliette Hascoet, MD¹, Thomas Prudhomme, MD³, Andrea Manunta, MD¹, Loïc Lenormand, MD², Xavier Gamé, MD PhD³, Marie-Aimée Perrouin-Verbe, MD⁵
¹University of Rennes, ²University of Nantes, ³University of Toulouse
Presented By: Benoit Peyronnet, MD

Introduction: The aim of the present study was to report the perioperative and short term functional outcomes of robot-assisted artificial urinary sphincter (AUS) implantation in male patients with neurogenic stress urinary incontinence (SUI).

Methods: All male patients who underwent robot-assisted bladder neck AUS implantation for neurogenic SUI at 3 centers between 2010 and 2018 were included in a retrospective study. Over the study period, the robot-assisted approach was the only surgical approach used at these three centers for bladder neck AUS implantation and all AUS implanted in neurogenic male patients were implanted at the bladder neck (no bulbar urethra implantation in this population). Among the 6 surgeons involved, 3 had very little experience with robotic surgery at the beginning of the study period (<50 cases).

Results: Thirteen patients were included: 4 with spina bifida, 6 with spinal cord injury, two with cauda equina syndrome and one with perineal hypospadias. The median age was 39 years. Because of major abdominal adherence, one conversion to bulbar urethra AUS implantation was needed (excluded of functional outcomes analysis). Owing to poor tolerance to pneumoperitoneum, one conversion to the open approach was required (8%). Two patients underwent a concomitant robotic bladder augmentation at the time of bladder neck AUS implantation. There was one intraoperative bladder neck injury (8%). The median length of stay was 8 days. After a median follow-up of 8 months, two revisions were needed (cuff downsizing due to bladder neck atrophy, 16%) and four explantations were required (30.8%). Indication for AUS explantations were erosion in three cases and early device infection in a patient with concomitant robotic bladder augmentation. The mean time to explantation was 101 days. Nine patients had still the AUS device in situ at last follow-up (75%) and 89% of these patients were continent (0 to 1 pad/day).

Conclusion: The present series confirm the excellent functional outcomes of robot-assisted bladder neck AUS implantation in male patients with neurogenic SUI. However, our findings differ from the only preliminary series published to date (Yates, BJU 2013) regarding the surgical morbidity and device outcomes. Further studies are needed to determine the possible benefits of robotic bladder neck AUS in males.
Poster #NM195  
OUTCOMES IN PATIENTS WITH IDIOPATHIC OVERACTIVE BLADDER UNDERGOING AUGMENTATION CYSTOPLASTY IN THE ERA OF ONABOTULINUMTOXIN-A AND INTERSTIM  
Akshay Sood, MD, Ben Eilender, BS, Phil Wong, MD, PhD, Humphrey Atiemo, MD  
Vattikuti Urology Institute, Henry Ford Hospital, Detroit, MI  
Presented By: Akshay Sood, MD

Introduction: Idiopathic overactive bladder (iOAB) refractory to conventional first-, second- and third-line therapies is a challenging condition to manage. In this study, we report on contemporary outcomes in patients with refractory iOAB undergoing augmentation cystoplasty.

Methods: Medical charts of patients undergoing augmentation cystoplasty for iOAB during the years 2012-2018 were retrospectively reviewed (n=8). All patients were followed for at least 6 months with a median of 12 months. Baseline characteristics including patient demographics, preoperative fluorourodynamic parameters, and first-, second- and third-line iOAB treatments were recorded. Outcomes studied included perioperative outcomes and AUASS (American Urological Association Symptom Score) and ISI (Incontinence Symptom Index) scores. Wilcoxon signed-rank test was used to assess temporal significance; a two-sided p-value

Results: The median age of the cohort was 54.5 years. All patients were females. The median preoperative bladder compliance was 39.8 cm H2O and the median preoperative bladder capacity was 134.5 cc. All patients had failed at least 2 drug regimens and had tried-and-failed either treatment with Botox (37.5%) or InterStim (87.5%). The median operative time was 6 hours and 10 minutes; the median blood loss was 150 cc (Table 1). Postoperatively, 2 patients (25%) were voiding spontaneously while others were performing intermittent self-catheterization. There were significant improvements in patient's AUASS and AUASS-QoL scores following surgery (Figure 1a; p=0.032 for each); the ISI and ISI-QoL scores also demonstrated similar temporal trends, however, did not attain statistical significance (Figure 1b; p=0.074 and p=0.057, respectively); the median follow-up was 391 days (IQR: 348 to 494 days).

Conclusion: In the current era of Onabotulinumtoxin-A and InterStim as third-line treatments for iOAB patients, augmentation cystoplasty should be considered a fourth-line treatment for the most refractory of patients and is associated with statistically improved symptoms scores.
Poster #NM196
PREVALENCE OF PELVIC ORGAN PROLAPSE IN MINNESOTA WOMEN USING A VALIDATED EPIDEMIOLOGIC SURVEY: A CROSS-SECTIONAL STUDY
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Presented By: Makinna Oestreich, BA

Introduction: Pelvic floor disorders (PFDs) including pelvic organ prolapse (POP) are believed to occur in a substantial number of women. However, previous estimates of PFD prevalence have ranged from 1% to 50%, partly due to lack of a valid screening tool. The objective of this study was to administer the Epidemiology of Prolapse and Incontinence Questionnaire (EPIQ), a validated instrument, to determine the prevalence of POP in women attending the Minnesota State Fair.

Methods: IRB approval for the study was obtained. Women ≥18 years old attending the 2018 Minnesota State Fair filled out a web-based version of the EPIQ. Data collection occurred at the University of Minnesota Driven to Discover building over 6 half-day sessions. Participants used iPads to self-report data onto a secure system, Research Electronic Data Capture (REDCap). The demographic data of age, height, and weight was analyzed with descriptive statistics. To determine associations between variables and outcomes, chi-square or Fisher’s exact tests were used.

Results: Of the 1,568 participants, 1,270 (88%) were younger women age 18-64 years and 173 (12%) were older women ≥65 years. A total of 84 (5.4%) participants reported POP: 62 (4.9%) younger women and 14 (8.2%) older women. There was not a significant association between the age groups and POP. Women who reported childbirth had higher rates of POP than nulliparous women, p<0.01. POP occurred in 55 (10.1%) women with a history of vaginal delivery, considerably more than the 4 (3.8%) with cesarean section, or 2 (3.2%) with both types of childbirth. Overall, 22 (1.4%) women had surgery related to POP. Surgery was associated with age and reported in 6 (3.5%) older and 11 (0.9%) younger women, p=0.01. Smoking status was not associated with an increased prevalence of POP in the participants.

Conclusion: The prevalence of pelvic organ prolapse in women in Minnesota was slightly higher when reported on the validated EPIQ than on previous studies, however the rates of surgery seem much lower. As expected, POP was associated with a history of childbirth, especially vaginal delivery. Further studies are needed to assess why the rates of surgery appear to be so low in this cohort.
Poster #NM197
OUTCOMES OF NATIVE TISSUE SACROSPINOUS LIGAMENT FIXATION WITH UNILATERAL DESCHAMP NEEDLE SUTURE LIGATURE
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Presented By: Vini Chopra, MD

Introduction: The prevalence of pelvic organ prolapse (POP) is 3-6% based on symptoms and up to 50% when based on examination. Risk factors for POP include vaginal birth, obesity, smoking and fetal macrosomia. Randall and Nichols described sacrospinous ligament fixation (SSLF) in 1971 which was found to have a 63% success rate at 2-years by the OPTIMAL trial. This study describes our institutional outcomes of SSLF using the Deschamps needle passer.

Methods: IRB approval was obtained for a retrospective chart review of patients who underwent unilateral SSLF using the Deschamp needle passer. Primary and secondary outcomes measured change in pelvic organ quantification stage and urinary symptom scores (AUASS, ISI, PFDDI-20), respectively. Failure defined as occurrence of prolapse related reoperation. Our cohort consisted of patients who underwent SSLF using Deschamps, performed by a single surgeon from 2012-2017; excluding patients who underwent SSLF with another device. Paired t-test and Wilcoxon rank-sum test were used for normal distribution and non-normal distribution, respectively. P-value < 0.05 was considered statistically significant.

Results: Thirty-four patients met the inclusion criteria. Mean age of the population was 65.11 years (+/- 8.8 years). Of the sample size, 62% White, 32% Black, 3% American Indian, 3% declined. The mean parity was 2.97 (+/- 1.34). The median follow-up time was 10 months (-/+/ 9 months). The median preoperative POP-Q stage was 3 (+/- 0.52) and median postoperative POP-Q stage was 0 (+/- 1.09) [p<0.001]. Median preoperative AUASS score was 15 and median postoperative AUASS score was 10 [p<0.001]. No patient required prolapse related reoperation. Analysis of the PFDDI-20 revealed statistical improvement in the POPDI-6 [p = 0.006] with no difference in the CRAD-8 or the UDI-6 scores.

Conclusion: Within short-term follow up, the Deschamps needle passer for SSLF was associated with a high success rate, improved prolapse related symptom scores and POP-Q stages. Although SSLF technique was not specifically described in the OPTIMAL trial, the Deschamps needle passer appears to have a high success rate. The Extended OPTIMAL trial concluded a surgical failure rate of 61.5% and 70.3% with USLF and SSLF at 5-years with no statistically significant improvement between symptom scores. Long term follow-up of this cohort will determine if similar outcomes are noted.
Poster #NM198
RISK OF PROLAPSE RECURRENCE AFTER NATIVE TISSUE ANTERIOR VAGINAL WALL SUSPENSION FOLLOWING ANTERIOR COLPORRHAPHY WITH LONG-TERM FOLLOWUP
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¹UT Southwestern, ²University of Maryland
Presented By: Deborah Hess, MD, MS

Introduction: Anterior colporrhaphy (AC) is the most commonly performed pelvic organ prolapse (POP) repair for the anterior compartment with rates of recurrence as high as 25-40%. There are limited options to manage anterior compartment recurrence with native tissue repair. We studied the role of an Anterior Vaginal Wall Suspension (AVWS) procedure in women with symptomatic anterior compartment prolapse recurrence after AC.

Methods: A prospectively maintained, institutional review board approved database of non-neurogenic women with symptomatic stage 2 or greater anterior prolapse who underwent prior AC with subsequent failure, defined as symptomatic stage 2 anterior compartment prolapse, and were treated by vaginal repair with AVWS was reviewed. Minimum follow up was one year. Failure following AVWS was defined as stage 2 or greater prolapse recurrence on examination or reoperation for symptomatic anterior POP. Outcome measures included validated questionnaires (Urogenital Distress Inventory-short form, quality of life), physical examination with POP-Q points, surgery for POP in other compartments or for secondary stress urinary incontinence, and AVWS procedure complications.

Results: Between 1996 and 2017, 58 of 587 women met study criteria with mean age 67 years and mean follow-up of 5.5 ± 4.3 years. Intraoperative complication rate was 5%, and 30-day complication rate was 9%, all Clavien I. The median recurrence-free survival was 6.8 years. Prolapse recurrence rate in the anterior compartment was 22%, with a re-operation rate for anterior POP recurrence at 14%. These patients were treated with mesh sacrocolpopexy (n=7) and redo-AC (n=1). Rates of secondary compartment prolapse were 16% apical and 12% posterior.

Conclusion: AVWS, a vaginal technique with minimal morbidity, offers an alternative native tissue repair in the management of recurrent anterior compartment prolapse, especially in women not willing to consider a mesh replacement. Long-term follow-up is necessary to detect secondary compartment prolapses.
Introduction: After Pelvic Organ Prolapse (POP) Surgery, it is not uncommon to identify descent of any compartment at hymen in asymptomatic patients. Identifying which patients will develop progression or symptoms could be relevant for counseling and planning prevention strategies. Describe the natural history of these patients analyzing anatomical progression below the hymen (Ba or Bp or C points at +1 or more) and/or bulge symptom development. The secondary aim is to identify risk factors for progression or symptoms of POP.

Methods: A retrospective analysis (2008-2017) from a prospectively collected database. Postoperatively, the follow up includes Pelvic Organ Prolapse Quantification System (POP-Q) every 6 months. Inclusion criteria: 1) Any POP surgery, 2) Ba or Bp at hymen (0) or C descent > ½ TVL, 3) Absence of symptoms at first POP-Q. 4) Have at least 1 POP-Q after the asymptomatic recurrence identified with a difference of 6 months. The primary outcome was a composite POP progression (bulge sensation or Ba, Bp or C at +1 or more). Logistic regression analysis was performed for the composite outcome.

Results: 163 had asymptomatic POP recurrence. The mean age was 58±9. 122(77.2%) were postmenopausal. Parity 3±2. 53(32.5%) had at least 1 forceps. Average follow up was 35.2 ±21 months. Index POP surgeries: Sacrocolpopexy 49(30.1%), Colpocleisis 1(0.6%), Colporrhaphy Repair 117(71.8%) Vaginal Apical Suspension 75(46%). Concomitant surgeries: Hysterectomy 108(66.3%). Sling (TVT or TOT) on 91(55.8%). During follow up, 79(48%) patients persisted asymptomatic. 84(52%) met the criteria for the composite outcome. 45(53%) became symptomatic, 72(44.2%) had POP progression below the hymen. 7(8.3%) were reoperated. Anatomical recurrence at any point of POP-Q was developed at 23±17 months and prolapse symptoms appeared at 29±19. In logistic regression analysis, the only significant variable to predict the composite outcome was older age with an OR 1.047 CI 95% 1.010-1.085 (56 vs. 60 years).

Conclusion: In this study 52% of patients had a possible clinically significant progression or symptom development. This information could be relevant to counsel patients with asymptomatic recurrence. Recurrence may be associated with older age, which could be a higher risk subgroup. These results should be interpreted with caution due to the retrospective nature of the study.
Poster #NM200
EVALUATION OF TRANSVAGINAL UTEROSACRAL LIGAMENT HYSTEROPEXY VS. UTEROSACRAL LIGAMENT SUSPENSION WITH Hysterectomy: A RETROSPECTIVE COMPARISON STUDY WITH TWO YEAR OUTCOMES
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Presented By: Samantha M. Raffee, MD

Introduction: Pelvic organ prolapse affects many women with an 12.6% lifetime risk of requiring surgical intervention. There has been growing interest in the efficacy of uterine preservation for uterovaginal prolapse. Many studies to date have evaluated sacrospinous hysteropexy and sacral hysteropexy as surgical options for uterine preservation techniques for the correction of uterovaginal prolapse. There is paucity in the data regarding uterosacral ligament hysteropexy (USLH). The objective of this study was to evaluate the two year outcomes of uterosacral ligament hysteropexy in comparison to uterosacral ligament suspension with hysterectomy in terms of operative data, anatomical efficacy and patient satisfaction.

Methods: A retrospective chart review was performed on patients that underwent a high uterosacral hysteropexy or uterosacral ligament suspension with hysterectomy between 2013 and 2016 by a single provider. Patient demographics, baseline and follow-up POP-Q exam, operative data and patient satisfaction scores were evaluated with descriptive statistics.

Results: The USLH group included 14 patients and the hysterectomy group included 13 patients. Please see Table 1 for patient demographic information. Mean estimated blood loss was 75.4 cc for the USLH and 209.6 cc for the hysterectomy group (p = 0.001). 64% of the USLH group followed up at 21.6 months or later while only 46.2% of the hysterectomy group followed up at more than 22.3 months. At this follow-up point, 8/9 in the USLH group had stage 2 or less prolapse and 6/6 had stage 2 or less prolapse in the hysterectomy group. Reoperation was required in 2/14 in the USLH group with these patients having preoperative stage 3 and 4 prolapse. The mean Pelvic Floor Distress Inventory 20 (PFDI-20) questionnaire scores showed no statistical significance between the patients that followed up at this time interval.

Conclusion: Transvaginal uterosacral ligament hysteropexy appears to provide comparable results to uterosacral ligament suspension with hysterectomy. Though this study was limited by its small sample size and limited patient follow-up, there is evidence that results are durable at 2 years for those that do not have high grade preoperative prolapse.
Poster #NM201
PRE-OPERATIVE RISK FACTORS LEADING TO POSTOPERATIVE FAILED VOIDING TRIAL AFTER ROBOTIC SACROCOLPOPEXY (RSC)
Dayron Rodriguez, Deborah Hess, Emily Huang, Maude Carmel
UT Southwestern
Presented By: Dayron Rodriguez, MD, MPH

Introduction: Abdominal sacrocolpopexy is considered the gold-standard for pelvic organ prolapse (POP) repair. Postoperative urinary retention has been reported in 13–30% of patients that undergo POP repair. The purpose of our study was to determine the rate of failed voiding trial (VT) after robotic sacrocolpopexy (RSC) and to identify potential pre-operative risk factors for post-operative retention following RSC POP repair.

Methods: Following IRB approval, a single-surgeon POP database of patients who underwent RSC between 2013 and 2018 was reviewed. All patients underwent a retrograde fill VT on the day of discharge, typically postoperative day 1. Patient demographics, preoperative and post-operative physical examination including POP-Q staging, urodynamics and surgical details including concomitant stress urinary incontinence (SUI) procedures were reviewed and compared between patients who passed and failed their post-operative VT (post void residuals (PVR) >100cc on 2 different attempts to void).

Results: A total of 79 women with a mean age of 63.7 years underwent RSC. The distribution by prolapse stage was as follows: stage II 35.4%, stage III 53.2% and stage IV 11.4%. Half of the women had a history of prior failed POP repair. Postoperative failed VT occurred in 11 (13.9%) patients; 4 of these women had a history of incomplete emptying (based on pre-operative PVR >100cc). Of the 30 women who had a concomitant SUI procedure, 23% (7/30) failed their VT. Neither age, BMI, diabetes, smoking, parity, stage of prolapse, surgical duration nor length of stay were predictive of failed VT; however a concomitant SUI procedure and history of pre-operative incomplete emptying were predictive (HR 3.942, p = 0.05; HR 18.699, p = 0.006).

Conclusion: The rate of post-operative urinary retention in this single surgeon robotic sacrocolpopexy series was 13.9%. Undergoing a concomitant SUI procedure and having a history of incomplete emptying were independent predictors of post-operative failed VT. Patients with a history of incomplete emptying or those undergoing SUI procedure at the time of RSC should be appropriately counseled about the elevated risks of discharge with a catheter.
Poster #NM202
TRANSOBLIQUE PLACEMENT OF URINARY DIVERGENS WITH IPSILATERAL VERTICAL RECTUS ABDOMINIS MYOCUTANEOUS FLAP AT TIME OF PELVIC EXENTERATION
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Presented By: Ajaydeep Sidhu, MD

Introduction: Pelvic exenteration frequently requires complex reconstruction for perineal closure, often necessitating the use of vertical rectus abdominis myocutaneous (VRAM) flaps. In the setting of concurrent colostomy, if an ileal conduit (IC) is needed, the stoma is often placed ipsilateral to the VRAM flap. An IC is the preferred method of urinary diversion in patients who have had pelvic radiation and are at risk for complications from an orthotopic diversion or lack enough length of large/small intestine to create a continent cutaneous diversion. Typically, an IC is placed through the rectus muscle to decrease the risk of parastomal hernia. In the setting of an ipsilateral VRAM, however, the IC is secured through the oblique muscles. The stoma is ultimately medialized at the time of the abdominal wall closure.

Methods: After institutional review board approval, we reviewed all cases where a urinary diversion was performed during pelvic exenteration and a VRAM flap was used for perineal closure between January 1, 2003 and October 1, 2018. Out of these, we identified patients that underwent an IC through the oblique muscles.

Results: Out of greater than 300 cases of VRAM flap with urinary diversion, we identified 6 cases where an IC was placed through the oblique muscles. The median age at the time of surgery was 54.5 years. 50% of patients were male. At a median of 5.5 months follow-up, there were no reported urinary diversion-related complications, and importantly no parastomal hernias.

Conclusion: Transoblique muscle ileal conduit placement is a useful and safe modification for securing the urinary diversion to the abdominal wall when the rectus muscle is harvested for perineal closure.
Poster #NM203
PROSPECTIVE COST ANALYSIS OF 3 VAGINAL ANTI-INCONTINENCE PROCEDURES AT A TERTIARY CARE CENTER
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Presented By: Daniel Wong

Introduction: Stress urinary incontinence (SUI) places an increasingly large burden on healthcare costs, therefore it is imperative that we critically evaluate the costs of surgical management. Our goal is to evaluate and compare the cost of 3 commonly performed vaginal procedures for SUI at one tertiary care institution.

Methods: The costs of autologous fascial sling (AFS), synthetic mid-urethral sling (MUS), and anterior vaginal wall suspension (AVWS), with no associated procedure, were analyzed from a prospective long-term database. Original costing data was obtained from a tertiary care institution for operating room, medical and surgical supplies, pharmacy, anesthesia supplies, and room and bed. Included were complete cost data provided by our institution from Medicare (2013) and payers with private insurance. Medicare based surgeon fee was included in the total. Non-parametric Kruskal-Wallis test was used to assess differences in cost between surgical procedures.

Results: For the year 2013, the AVWS, AFS and MUS had total median costs of $4,513, $5,721, $3,311 respectively. Total cost and all sub-costs except for pharmacy costs were significantly different for each procedure. AVWS and MUS placement differed from each other regarding the cost of anesthesia, which was higher for AVWS. Also, when compared with AVWS, MUS had a significantly lower total cost due to operating time and hospital stay (p < 0.0001). Compared to AFS, AVWS had significantly lower total costs due to decreased costs associated with operating time, hospital stay and surgical supplies.

Conclusion: Initial costs of vaginal SUI procedures at our institution fared favorably compared to cost of retropubic approaches to correct SUI as reported in contemporary U.S. literature (1). This information will serve as our baseline for reporting overall costs, incorporating the management of complications/reoperation in the 5 years following these 3 SUI procedures.

Reference:

Table 1. Kruskal-Wallis Test for Comparison of Cost by Procedure

<table>
<thead>
<tr>
<th>Procedure</th>
<th>AVWS (n = 34)</th>
<th>Fascial Sling (n = 11)</th>
<th>Synthetic Sling (n = 16)</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anesthesia</td>
<td>442.88</td>
<td>517.86</td>
<td>119.10</td>
<td>&lt;0.0001*</td>
</tr>
<tr>
<td>Medical and Surgical Supplies</td>
<td>9.16</td>
<td>64.96</td>
<td>7.49</td>
<td>0.0026</td>
</tr>
<tr>
<td>Operating Room</td>
<td>2299.94</td>
<td>3563.96</td>
<td>2305.12</td>
<td>0.0002*</td>
</tr>
<tr>
<td>Pharmacy</td>
<td>239.86</td>
<td>263.31</td>
<td>157.04</td>
<td>0.0620</td>
</tr>
<tr>
<td>Respiratory</td>
<td>56.16</td>
<td>72.43</td>
<td>0.00</td>
<td>&lt;0.0001*</td>
</tr>
<tr>
<td>Room and Bed</td>
<td>573.13</td>
<td>785.64</td>
<td>0.00</td>
<td>&lt;0.0001*</td>
</tr>
<tr>
<td>Total</td>
<td>4513.21</td>
<td>5720.54</td>
<td>3310.87</td>
<td>&lt;0.0001*</td>
</tr>
</tbody>
</table>

*AVS versus Fascial Sling, p < 0.05
'SVVS versus Synthetic Sling, p < 0.05
Poster #NM204
THE USE OF MIRABEGRON IN PATIENTS WITH PARKINSON’S DISEASE AND STORAGE LOWER URINARY TRACT SYMPTOMS: A SINGLE-CENTER SERIES
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Presented By: Benoit Peyronnet, MD

Introduction: To assess the safety and efficacy of mirabegron for the treatment of urinary storage symptoms in patients with Parkinson’s disease (PD).

Methods: All PD patients who were treated with mirabegron 50 mg once daily for storage lower urinary tract symptoms (LUTS) between 2012 and 2017 were included in a retrospective study. The primary endpoint was clinical success defined as any subjective improvement in storage LUTS self-assessed by the patients six weeks after mirabegron initiation. Univariate logistic regression and cox proportional hazards models were used to seek for predictive factors of success and persistence with mirabegron respectively.

Results: Out of 50 patients included, mostly patients having failed anticholinergics (56%), 25 reported their storage LUTS had improved (50%), 23 were unchanged (46%) and 2 had worsened (4%) respectively. Five patients had a complete resolution of their urgency incontinence (11.4%). The number of pads per day decreased significantly after six weeks of mirabegron intake from 1.5 to 0.9 on average (p=0.01) and so did the number of nocturia episodes (from 3 to 2.6/night; p=0.02). Only two adverse events were observed during mirabegron treatment (4%), both of them grade 1 according to the FDA classification: one dizziness and one diaphoresis. After a median follow-up of 19 months, 27 patients had discontinued mirabegron (54%). The median time to discontinuation was 17 months with estimated persistence rate of 51.5%, 44.6% and 36.4% at 1, 2 and 3 years respectively (figure 1). No predictive factor of success was found in univariate analysis. The only statistically significant predictive factor of longer persistence with mirabegron was male gender (HR=4.94; p=0.002).

Conclusion: Mirabegron appeared to have a reasonable safety profile and to be an effective treatment for bladder storage symptoms in many patients with PD.
CLINICAL SCIENCE ABSTRACTS

Poster #NM205

LONG-TERM OUTCOMES OF ARTIFICIAL URINARY SPHINCTER IN FEMALE PATIENTS WITH SPINA BIFIDA

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1University of Rennes, 2University of Nantes, 3University of Bordeaux

Presented By: Benoit Peyronnet, MD

Introduction: Stress urinary incontinence (SUI) is relatively common in women with spina bifida but data on its surgical management are scarce. Artificial urinary sphincter (AUS) implantation is one of the surgical option in women with SUI. The aim of the present study was to report the long-term functional outcomes of artificial urinary sphincter (AUS) implantation in female patients with spinal dysraphism and SUI related to intrinsic sphincter insufficiency (ISD).

Methods: The charts of all spina bifida female patients with SUI due to ISD who underwent AUS implantation between 1982 and 2014 were retrospectively reviewed. Reoperation was defined as either revision or explantation of the AUS device. Reoperation-free survival of the AUS device was estimated using the Kaplan–Meier method. Continence status as per patients’ subjective assessment was categorized as follows: complete continence (no pads), improved continence, unchanged SUI or worsened SUI.

Results: Seventeen patients were included. The median age at first implantation was 18 years (range 11-63) and 94.1% of patients were self-catheterizing. The median follow-up was 14 years (range 5-34 years). AUS was implanted through an open approach in 16 patients (94.1%) and through a laparoscopic approach in 1 patient (5.9%). At last follow-up, 76% of patients (13/17) had undergone at least one reoperation. Six AUS explantations were needed (35.3%), and eight AUS revisions (47.1%). Median time to first reoperation was 10 years. None of the patients who underwent device explantation had a new AUS implanted. However interestingly 3 of these 6 patients remained fully continent. In intent to treat analysis, 14 of the 17 patients were fully continent at last follow-up (82.3%).

Conclusion: AUS in female patients with spina bifida is associated with satisfactory long-term functional outcomes but at the cost of a high reoperation rate. In the present series, after a median follow-up of 14 years, 82.3% of patients were fully continent but 76% of patients had undergone at least one reoperation (explantation or revision). Median time to first reoperation was 10 years.
Poster #NM206
GENDER AND URINARY SYMPTOMS IN PATIENTS WITH MULTIPLE SCLEROSIS
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Presented By: Bradley Garden, MD

Introduction: Urinary symptoms in patients with multiple sclerosis (MS) are common yet variable, affecting between 52%-97% of patients. The location and volume of central nervous system plaque affecting the micturition pathway may determine symptom type and severity, however other factors may also explain why patients with MS have variable urinary symptoms. The aim of this study is to evaluate how gender may affect urinary symptoms in MS.

Methods: We performed a prospective cross-sectional study of individuals with MS being evaluated in an outpatient neurology office. Participants were asked to complete the AUA-Symptom Score, Medical Epidemiological, and Social Aspects of Aging, and questionnaire based voiding diary. Chart review was performed to determine MS diagnosis, current disease modifying medications, and current medical treatments for voiding symptoms. The Mann-Whitney U test was used to assess difference between the voiding symptoms of male and female subjects.

Results: There were 200 participants in the study, 54 were male. Men were significantly more likely to have a complaint of weak urine stream (p = 0.007). Women were significantly more likely to have complaint of incontinence with: weak cough (p < 0.001), strong cough (p < 0.001), sneezing (p

Conclusion: Urinary symptoms are different in men compared to women who have MS. Non-neurogenic pathologies such as benign prostatic hyperplasia and sphincter deficiency may explain some of the symptom variation seen in MS.
APPROPRIATE SCREENING FOR UROLOGIC COMPLICATIONS AFTER SPINAL CORD INJURY IN A NON-DESIGNATED SCI CENTER VETERANS AFFAIRS HOSPITAL
Alyssa Greiman, Rohail Kazi, Cox Lindsey
Medical University of South Carolina
Presented By: Alyssa Greiman, MD

Introduction: Surveillance for common urologic complications after spinal cord injury (SCI) is not consistent, without consensus among clinical practice guidelines. The Paralyzed Veterans of America has issued a clinical practice guideline with recommendations including a yearly urologist visit, a serum creatinine, and a renal ultrasound. These recommendations are the least intensive urologic follow-up of the various other clinical practice guidelines for SCI. We present adherence to these screening guidelines at a non-designated SCI center as a bellwether for urologic care after SCI.

Methods: We identified all patients with documented SCI seen at the Ralph H. Johnson VA Medical Center between January 2014 and December 2015 and evaluated whether patients received an urologist visit, serum creatinine measurement and upper tract imaging during the study period.

Results: 99 patients were identified with SCI [Demographics in Table 1]. 49% of patients had a complete urologic surveillance. Those patients with a complete evaluation did not live closer to the care facility (p=0.40) or the designated SCI center in Augusta (p = 0.13). There was no difference in age (p=0.18), race (p=0.64), SCI level (p=0.16) ASIA impairment (p=0.39), ambulatory status (p=0.27), comorbidities (p=0.83) or bladder management (p=0.14). Those with a complete evaluation were more likely to have had a urology visit (p<0.0001), to have had cystoscopy (p=0.001), cytology (p=0.03), and urodynamics (p<0.0001). There was no difference in hospitalization for urinary tract infections in those who had a complete evaluation and those who did not (18.4%, p=0.09).

Conclusion: Surveillance for common urologic complication after spinal cord injury per the Paralyzed Veterans of America clinical practice guideline including a yearly urologist visit, serum creatinine and upper tract imaging was performed in 49% of Veterans with SCI seen at a single non-designated SCI center Veterans Affairs Hospital. There were no identifiable predictive factors to aid in determining who is most likely to receive a complete evaluation.
Poster #NM208
VALSALVA VOIDING VS. CLEAN INTERMITTENT CATHETERIZATION IN ADULT SPINA BIFIDA PATIENTS WITH NEUROGENIC ACONTRACTILE DETRUSOR: A CASE CONTROL STUDY
Mehdi El-Akri1, Charlène Brochard, MD1, Juliette Hascoet, MD1, Magali Jezequel, Ms1, Quentin Alimi, MD1, Zine-Eddine Khene, MD1, Claire Richard, Ms1, Jacques Kerdraon, MD1, Xavier Gamé, MD, PhD2, Andrea Manunta, MD1, Laurent Siproudhis, MD, PhD1, Benoit Peyronnet, MD1
1University of Rennes, 2University of Toulouse
Presented By: Benoit Peyronnet, MD

Introduction: To assess the relative risks of pelvic organ prolapse (POP) and urinary complications in adult spina bifida patients with neurogenic acontractile detrusor voiding with Valsalva vs. those using clean-intermittent catheterization (CIC).

Methods: We conducted a retrospective analysis including all spina bifida patients with neurogenic acontractile detrusor with a minimum follow-up of 12 months. Patients were then divided in two groups according to their bladder management: voiding with Valsalva vs. CIC. The primary endpoint was any de novo or worsened rectal and/or pelvic organ prolapse (POP) diagnosed during follow-up. The secondary outcome was urinary complications defined as febrile urinary tract infections (UTI) and/or urolithiasis and/or renal failure.

Results: 55 patients (50.9% were males) met the inclusion/exclusion criteria: 28 voiding with Valsalva and 27 performing CIC. At baseline, the rates of vaginal prolapse (44.4% vs. 50%; p=0.99), and rectal prolapse/intussusception (25.9% vs. 21.4%; p=0.76) were similar in both groups. After a median follow-up of 80.6 months and 65.6 months respectively (p=0.29), the rate of de novo or worsened rectal prolapse/intussusception was higher in the Valsalva voiding group than in the CIC group (32.1% vs. 3.7%; p=0.01; table 1). De novo or worsened vaginal prolapses were also more common in the Valsalva voiding group, but it did not reach statistical significance (33.3% vs. 11.1%; p=0.29).

Conclusion: Valsalva voiding might be harmful in adult spina bifida patients with neurogenic acontractile detrusor as it may increase the risk of rectal prolapse/intussusception. Overall, the prevalence of POP and rectal prolapse was high in both groups.

<table>
<thead>
<tr>
<th>Table 1: de novo pelvic organ prolapse and urinary complications</th>
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<tr>
<td>Valsalva voiding</td>
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<tr>
<td>Median follow-up (months)</td>
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<tr>
<td>Change in eGFR (ml/min)</td>
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<tr>
<td>Urinary complications</td>
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<tr>
<td>Upper urinary tract stones</td>
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<tr>
<td>Patients with ≥ 1 de novo vaginal prolapse (women only)</td>
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<tr>
<td>Rectocoele</td>
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<tr>
<td>Uterine prolapse</td>
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<tr>
<td>Baden-Walker grade ≥2</td>
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<tr>
<td>De novo rectal Prolapse</td>
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<tr>
<td>External rectal prolapse</td>
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NA: not applicable
*: most patients had several compartments prolapse which explain the mismatch
Poster #NM209
NATURAL HISTORY OF UPPER TRACT CALCULI IN SPINAL CORD INJURY
Giulia Lane, MD1, Rachel Mann2, Iryna Crescenze1, John Stoffel1, William Roberts1, J Quentin Clemens1, Diana O'Dell1, Anne Cameron1
1University of Michigan, 2University of Minnesota
Presented By: Giulia Lane, MD

Introduction: Patients with spinal cord injury (SCI) are at increased risk of developing renal and ureteral (upper tract) calculi. Guidelines for management of neurogenic bladder recommend regular renal ultrasound, however there is a paucity of evidence to direct management of incidentally discovered stones. This study describes the management of upper tract calculi among patients with SCI with attention to factors influencing surgical management versus observation.

Methods: In this descriptive, retrospective, cohort study patients with SCI and upper tract calculi were identified from an institutional neurogenic bladder database. Details pertinent to stone episodes (defined as clinical encounter for finding of new calculi) were gathered and evaluated from the medical record.

Results: There were 37 patients with SCI with upper tract stones who were a median of 26 years (IQR 17,44) at time of their SCI. Most managed their bladders with intermittent catheterization (n=19). Among these 37 patients there were 53 stone episodes with 127 individual stones identified. Ultimately 16 (43%) patients required at least one surgical intervention. Median follow-up time was 48 months (IQR 22, 75).

Of the 53 individual stone episodes, 36 were initially managed with observation whereas the remaining 17 proceeded to early/immediate surgical intervention. Of the 36 observed stone episodes, 7 (19%) ultimately underwent surgical intervention after a period of observation while 13 (36%) passed spontaneously and 16 (45%) remained on observation. Stone passage was not correlated to stone size (p=0.42), laterality (p=0.15) or location (p=0.45). Of the 26 episodes (49%) that required surgical intervention, pain was the most common primary indication for surgery (n=11/53, 46%). The median time from diagnosis to intervention was 3.5 months (IQR 1,19) and the most commonly performed surgery was ureteroscopy (n=16). Staged procedures were necessary in 25% (n=6). There was a correlation between increased number of stone episodes and requiring a surgical intervention (p=0.01).

Conclusion: In this SCI cohort with nephrolithiasis the majority of patients were asymptomatic and initially managed with observation, with only a small percentage of those deemed safe for conservative management eventually requiring surgery. Of all patients, less than half required surgery for nephrolithiasis and the only predictor of surgical intervention was the number of stone episodes’ patients experienced.
INTRODUCTION: Multiple sclerosis (MS) is a demyelinating neurologic condition affecting approximately 2 million people worldwide. Lower urinary tract dysfunction is common with 50-90% having voiding symptoms. If lower urinary tract symptoms are recognized and a urological referral is made, little is known regarding the outcomes of these patients within a urology practice. The objective of this study was to evaluate the MS population of a single provider to gain a better understanding of patient characteristics, urodynamic findings, treatment outcomes and follow-up patterns.

METHODS: A retrospective chart review was performed on all patients with a diagnosis of multiple sclerosis in the practice of a single provider at Vattikuti Urology Institute from January 2013 to December 2017. Patient demographics, urodynamic study (UDS) data, management outcomes and patient reported questionnaire responses were recorded and analyzed with descriptive statistics.

RESULTS: A total of 147 patients were initially included with a diagnosis of MS. Please see Table 1 for patient characteristics. After removing patients lost to follow-up, 47.6% of the original population was considered active. Among those that did undergo UDS (120), 24% had a diagnosis of detrusor sphincter dyssynergia, 60% had neurogenic detrusor overactivity (NDO) and 33% had poor detrusor function. Some element of the overactive bladder symptom complex was the presenting chief complaint of 107/147 patients. Among the active patients with NDO, 48.7% received botox. For the active NDO patients that did receive botox, statistical significance was found in the change of all urinary quality of life (QOL) questionnaires (AUA-SS, AUA QOL, Michigan Incontinence Symptom Index) that were used between pre and post treatment. There was no statistically significant change in QOL scores for the active NDO population that had not received botox.

CONCLUSION: Significant barriers exist for patients with MS. Given the improvement in quality of life that can be achieved with appropriate treatment and the significant number of patients that are lost to follow-up, it is important to provide patients with education regarding the effects of MS on their urinary system at their initial visit. A treatment pathway, patient navigator and multidisciplinary approach could be helpful to improve patient outcomes.
Poster #NM211
NEUROGENIC DYSFUNCTION IN ADULTS WITH CEREBRAL PALSY: A 10 YEAR EXPERIENCE
Ruthie Su1, Gray L. Roberge2, Wade Bushman2
1University of Wisconsin, 2University of Wisconsin, Department of Urology, Madison, WI
Presented By: Gray L. Roberge, MD

Introduction: Cerebral palsy (CP) describes a group of congenital movement disorders that may or may not be associated with cognitive impairment. A proactive approach to urologic issues in this population is often challenged by the mobility-impaired, non-verbal and/or institutionalized status of many of these patients. We present a cohort analysis of CP patients cared for in our university clinic over a 10 year period to better define these challenges and identify opportunities for improved urologic care.

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). Severity of CP was assessed based on wheelchair dependence, ability to communicate and institutionalization. Urinary symptoms, urodynamic findings, treatment, and mode of voiding were extracted from chart review.

Results: Eighty-four patients with CP had an average length of follow-up of 6.1 years. Forty-eight (57%) were male. Forty-one (49%) were non-ambulatory and non-verbal; 40% lived in assisted living. The average initial age for urologic evaluation was 40 years old. Eleven patients died at an average age of 57 years old. The most common reasons for urologic consultation were urge/frequency (49%), recurrent UTI (43%), retention or infrequent voiding (42%), and voiding difficulty (33%). Urodynamics were performed in 77%. At last follow-up, 56% were voiding, 19% relied on CIC, and 18% had an indwelling catheter. Sixteen patients (20%) transitioned from voiding to intermittent/indwelling catheter usually for refractory urinary retention. Five patients were able to void after initially relying on intermittent/indwelling catheterization.

Conclusion: Patients with CP are a heterogeneous group who share functional disability and social situations that present unique challenges in urologic care. Despite rigorous diagnostic investigations and trials of medical and minimally invasive therapies, a subgroup of adults with CP will require instrumentation.
Poster #NM212
FEASIBILITY AND PERIOPERATIVE OUTCOMES OF ROBOT-ASSISTED AUGMENTATION CYSTOPLASTY IN ADULT PATIENTS WITH NEUROGENIC BLADDER: A PRELIMINARY SINGLE-CENTER EXPERIENCE
Benoit Peyronnet, MD, Juliette Hascoet, MD, Louis-Paul Berthelot, Jacques Kerdraon, MD, Caroline Voiry, MD, Karim Bensalah, MD PhD, Grégory Verhoest, MD, PhD, Quentin Alimi, MD PhD
University of Rennes
Presented By: Benoit Peyronnet, MD

Introduction: Augmentation cystoplasty is the standard treatment of neurogenic detrusor overactivity refractory to anticholinergics and intradetrusor injections of botulinum toxin. However, it is associated with a high perioperative morbidity. If some pediatric series have reported the outcomes of robotic augmentation cystoplasty, the only data available to date in adult neurogenic patients comes from open series. The aim of the present series was to report the preliminary data of a single center experience assessing the feasibility and perioperative outcomes of robot-assisted augmentation cystoplasty in adult patients with neurogenic bladder.

Methods: All patients with refractory neurogenic detrusor overactivity who underwent a robot-assisted augmentation cystoplasty from October 2015 to October 2018 were included in a retrospective study. Only « isolated » bladder augmentations were performed through a robotic approach (in case of associated catheterizable channel/Mitrofanoff, the procedure was performed through an open approach). The patients’ characteristics and perioperative outcomes were recorded. The urinary diversion was performed extracorporeally.

Results: Five patients were included over the study period. There were two spina bifida patients and three spinal cord injured (one female and four males). The median age was 32 years (20-43). The operative time was 400 minutes (315-630) and the median length of hospital stay was 5 days (4-15). One conversion to open approach was needed due to a leakage detected at the anastomosis between augmentation cystoplasty and bladder neck at the end of the procedure (25%). No intraoperative complication was observed. Three patients experienced postoperative complications (60%): two minor (bleeding from the epigastric artery in contact with the abdominal drain, Clavien 2; one wound abscess, Clavien 2) and one major (sepsis requiring explantation of an artificial urinary sphincter implanted at the bladder neck concomittantly, Clavien 3B). The median length of hospital stay was 4.5 days (4-15) and the median estimated blood loss was 45 ml.

Conclusion: Robotic augmentation cystoplasty in adult neurogenic patients appeared technically feasible. In this preliminary experience only one major complication (20%) not related to bladder augmentation. Further studies are needed to determine the role of the robotic approach in adult patients with indications of augmentation cystoplasty for neurogenic bladder.
Poster #NM213
INITIATION OF INTERMITTENT CATHETERIZATION IS ASSOCIATED WITH INCREASED RISK OF URINARY TRACT INFECTION IN MULTIPLE SCLEROSIS PATIENTS WITH ELEVATED POST-VOID RESIDUAL
Lauren E. Corona1, Nadia R. Sion2, Elizabeth Dray3, Anne P. Cameron1, J. Quentin Clemens1, Yongmei Qin1, John T. Stoffel1

1University of Michigan, Department of Urology, 2Central Michigan University, College of Medicine, 3Greenville Health Systems, Department of Urology
Presented By: Lauren E. Corona, MD

Introduction: Multiple sclerosis (MS) patients can be significantly impacted by both urinary retention and lower urinary tract symptoms (LUTS). There is little consensus on when clean intermittent catheterization (CIC) should be initiated and its impact on symptoms and quality of life (QOL). We investigated whether starting CIC for MS patients with LUTS and elevated post-void residual (PVR) would improve urinary QOL and prevalence of urinary tract infections (UTI).

Methods: We retrospectively reviewed records of MS patients with PVR > 100 ml who presented to a neuro-urology clinic for evaluation. Patients were categorized by subsequent choice of treatment: CIC versus an alternative treatment (medication, percutaneous tibial nerve stimulation (PTNS), intravesical Botox, or suprapubic tube placement). Primary outcome was change in incidence of UTI symptoms over a 1-year follow-up (defined as a positive culture or subjective symptoms treated with antibiotics). Data on change in urinary QOL (based on Michigan Incontinence Symptom Index (M-ISI), American Urological Association Symptom Score (AUASS), or progress note documentation), emergency room visits, and adherence to therapy choice were also collected and compared.

Results: Between 2014 and 2017, 41 MS patients met inclusion criteria. LUTS were high with average AUASS of 20.3 and M-ISI of 15.5. Nineteen patients started CIC, while 22 patients were prescribed alternative treatment (18 new medications, 2 PTNS, 1 Botox, and 1 SPT). The CIC group had slightly higher PVR (287 v 177 ml, p=0.0005) at baseline. The groups were similar in urinary symptom scores, age, gender distribution, medication use, and history of UTI. At follow-up, the CIC group had less improvement in urinary symptoms (26% improvement from baseline v 64%, p=0.02) and had a 4 times greater odds of developing a UTI (OR 4.3, p = 0.04). The CIC group was also more likely over the following year to be treated for UTI symptoms (74% v 41%, p=0.035), to start an additional treatment for LUTS (63% v 27%, p=0.02), and to visit the ED (63% v 27%, p=0.02).

Conclusion: In this group of MS patients with LUTS and elevated PVR, initiation of CIC was associated with increased risk of UTI and less improvement in urinary symptoms over the subsequent year compared to alternative treatments.
Poster #NM214
ILEOVESICOSTOMY OUTCOMES IN PATIENTS WITH NEUROGENIC BLADDER DYSFUNCTION
Lauren Beeder1, Jie Cai2, David Ginsberg3
1Keck School of Medicine of University of Southern California, Los Angeles, CA, 2University of Southern California, Los Angeles, CA, 3Department of Urology, University of Southern California, Los Angeles, CA
Presented By: Lauren Beeder, BS

Introduction: Ileovesicostomy is an option for patients with neurogenic bladder (NGB) who are unable or unwilling to perform clean intermittent catheterization (CIC). There is limited data on long-term outcomes following this procedure. The purpose of this study was to evaluate the utility of ileovesicostomy in patients with NGB and to identify outcomes, complications and potential predictors of such complications.

Methods: We conducted a chart review of patients who underwent ileovesicostomy for NGB from 1996 to 2012 at Rancho Los Amigos National Rehabilitation Center. We examined demographics as well as pre-, intra- and post-operative data to identify outcomes and risk factors for complications. Chi-squared test and Fisher’s exact test were used to determine associations.

Results: Twelve patients (mean age 41.7 years, 66.67% male, 33.33% female) were identified with a mean length of follow-up of 85.6 months. Etiology of their NGB was: cervical SCI (3/12, 25%); thoracic SCI (5/12, 41.67%) lumbar SCI; (1/12, 8.33%); spina bifida (3/12, 25.0%). The mean time from injury to surgery was 15.9 years (range 1.5 – 41.0). Early complications were identified in two patients. Recurrent urinary tract infections (>/= 2 total) occurred in 8/12 (66.7%) patients. Long-term complications developed in five patients: vesicovaginal fistula (1); stoma bleeding (1); pyelonephritis (1); stone formation (3). All patients have maintained their renal function (mean change in creatinine 0.035 mg/dL) and no evidence of new-onset hydronephrosis. 11/12 (91.67%) patients have urethral continence and all patients are able to spontaneously empty. One patient (8.33%) requires the use of CIC per stoma twice daily. No patients require indwelling catheterization. Increased BMI (p = 0.0582), increased time from injury to surgery (p= 0.0613) ane use of longer ileal segment (p = 0.0679) trended as possible risk factors for long-term complications. One patient (8.33%) underwent cystectomy with conduit.

Conclusion: Ileovesicostomy is a valuable approach to the management of neurogenic bladder in adults unwilling or unable to perform CIC. Long-term complications are minimal, patients continue to adequately empty their bladders and renal function is maintained. Our results suggest that patients with a lower BMI and a more recent onset of symptoms may have less complications.
Poster #NM215
LESSONS LEARNED FROM THE LONGEST REPORTED STUDIES ON OPEN STRESS URINARY INCONTINENCE PROCEDURES IN WOMEN.
Amy Kuprasertkul, BS, Philippe Zimmern, MD
Department of Urology, UT Southwestern Medical Center
Presented By: Amy Kuprasertkul, BS

Introduction: Several open surgeries can correct stress urinary incontinence (SUI). We reviewed and compared those few with very long-term results (≥10 years).

Methods: A comprehensive Ovid and PubMed search was conducted for articles containing long-term data over 10 years for the most commonly established open procedures to correct SUI. The methods of follow-up, lost to follow-up (LTF) rates, cure rates, and complications were compared.

Results: SUI procedures reviewed included: tension free vaginal tape (TVT), transobturator (TOT) sling, retropubic suspensions (Burch, MMK), autologous fascial sling, and Stamey needle suspension. The mean follow-up of all 15 studies was 12.6 years (range: 10-17 years) with sample sizes ranging from 26 to 650 patients. Methods of follow-up included clinic visits (n = 9), telephone interviews (n = 8), or mailed questionnaires (n = 5). Mean LTF rate was 26% (range: 12-49%). Mean objective and subjective cure rate with varying success definitions was 87% (range 82-91%) and 68% (range: 33-94%). The most common complications included de novo urgency (range: 2-70%), repeat SUI/prolapse surgeries (range: 2-37%), mesh/suture exposure (range: 1-9%), voiding problems (range: 2-36%), and pain (range: 2-14%). The longest study for each procedure is presented in the table.

Conclusion: All very long-term data for SUI surgeries share considerable LTF, infrequent examination data, mostly questionnaire-based information, and variable success rates from varying success definitions. Standardization of all these key outcome measures is urgently needed.
THE ROLE OF ANESTHESIA IN URINARY RETENTION FOLLOWING MID URETHRAL SLING
Eric Katz, Kareem Alazem, Kristian Stensland, Lara MacLachlan
Institute of Urology, Lahey Hospital Medical Center, Burlington, MA, USA
Presented By: Eric Katz, BA, MD

Introduction: Postoperative urinary retention is a known complication of mid urethral sling placement for stress urinary incontinence, occurring in 3-39% of cases. The use of certain perioperative medications that are administered by anesthesia may influence the risk of this complication. Antiemetics are commonly used to manage perioperative nausea, some of which also have anticholinergic properties. Additionally, muscle relaxants used for paralysis could impair detrusor function. The aim of this study was to investigate the association of perioperative medications administered by anesthesia with urinary retention after mid urethral sling.

Methods: This was a retrospective cohort study of all women undergoing mid urethral sling placement for stress urinary incontinence by a single fellowship-trained urologic surgeon at one institution between March 2015 and June 2018, under approval by the Institutional Review Board. Recorded data consisted of preoperative demographics and clinical data including voiding function, surgical data, intraoperative anesthesia and perioperative medications, and postoperative voiding function. Both retropubic and transobturator approaches were included. Exclusion criteria included incomplete surgical or perioperative data. All patients underwent an active retrograde void trial in the recovery area on the day of surgery. Retention rates were compared with Fisher’s Exact test.

Results: 82 patients were included, 17 (21%) of whom failed postoperative void trial. A total of 25 patients received transdermal scopolamine and 40% of those patients receiving scopolamine failed the postoperative void trial (p=0.048). There was no statistically significant association between other antiemetics (Ondansetron, Promethazine) and urinary retention. Rate of retention was also higher in patients undergoing retropubic vs. transobturator approach (36% vs. 9%; p=0.005). Administration of a muscle relaxant for anesthesia (rocuronium or vecuronium) was also associated with urinary retention (28% vs. 13% with muscle relaxant vs. no paralysis, respectively), though this association was not statistically significant (p=0.099).

Conclusion: Administration of transdermal scopolamine is associated with increased risk of urinary retention after mid urethral sling. Retropubic approach and muscle relaxation may also correlate with higher rate of retention. Further studies are needed to elucidate these relationships.
Poster #NM217
DYSPAREUNIA IN FEMALE ADULT ENTERTAINERS CAN BE A CAUSE OF FEMALE SEXUAL DYSFUNCTION
Daniel Furlong¹, Justin Dubin¹, Aubrey Greer¹, Maria Becerra¹, Cadence Valentine², Ian O'Brien², Eric Leue², Lisa Paz², Ashley Winter², Ranjith Ramasamy¹
¹Department of Urology, University of Miami Miller School of Medicine, Miami, FL, USA, ²The Free Speech Coalition, Canoga Park, CA, USA, ³Department of Urology, Kaiser Permanente, Portland, OR, USA
Presented By: Daniel Furlong, MD, MBA

Introduction: Appreciating the psychosocial behaviors of sexual activity amongst a sexually active population such as adult female entertainers could help in understanding factors contributing to female sexual dysfunction (FSD) such as dyspareunia. The aim of this study is to evaluate the prevalence of dyspareunia in female adult entertainers and understand whether it contributes to FSD in this population.

Methods: A 53-question survey was distributed to female adult entertainers through collaboration with the Free Speech Coalition (FSC), the North American Trade Association of the Adult Industry, and sent to those within the Performer Availability Screening Services (PASS) database who met criteria of having biological vaginas and experience as adult entertainers. Female sexual function was evaluated using the Female Sexual Function Index (FSFI) survey with FSD defined by FSFI score

Results: Of the 147 respondents, 96 subjects met inclusion criteria. Median age was 32 (range 20-66), average FSFI score was 28.7±5.6; 17.7% (17/96) suffered from dyspareunia, 24.0% (23/96) had scores indicative of FSD, and of those with FSD, 56.5% (13/23) suffered from dyspareunia. Women with dyspareunia demonstrated lower FSFI scores (21.5±4.8 vs 30.3±4.2, p<0.01), less frequent lubrication 3.2±1.3 vs 4.5±0.9, p<0.01), less sexually satisfying events at both home (2.9±1.7 vs 4.2±1.2, p<0.01) and work (2.2±1.6 vs 3.3±1.4, p=0.024). There was no significant difference regarding preference for type of sexual intercourse. Those with FSD and dyspareunia did not show any significant difference in FSFI score, lubrication frequency, satisfying sexual events, or preference for type of sexual intercourse when compared to those with FSD without dyspareunia. Finally, there was no significant difference for those with FSD and dyspareunia regarding their age or the number of sexual events that they experience.

Conclusion: Among female adult entertainers, there appears to be a strong association between dyspareunia and FSD. Despite their occupation, female adult entertainers have similar rates of dyspareunia compared to the general population.¹ Therefore, females presenting with FSD should be evaluated for dyspareunia.

Poster #NM218
TRENDS IN GENDER REPRESENTATION OF AUTHORSHIP AT THE ANNUAL SUFU MEETING
Caitlin Lim, DO, Sarah Christianson, DO, Rebecca Spinaris, BS, Joshua Cohn, MD, Justin Friedlander, MD
Albert Einstein Medical Center
Presented By: Caitlin Lim, DO, MS

Introduction: Gender disparity in the medical field, especially in surgical sub-specialties such as urology, have been a noted topic of discussion at present. While the female cohort of residents and practicing urologists has undoubtedly increased, there has been a persistent gender disparity amongst the academic representation in the field. The area of Female Pelvic Medicine and Reconstructive Surgery (FPMRS) has presumably held a stronger female presence than other areas of the specialty. Our aim is to evaluate the gender representation of abstract authorship and project presentation at the annual Society of Urodynamics, Female Pelvic Medicine and Urogenital Reconstruction (SUFU) meeting.

Methods: Abstract, video, and poster presentation data was retrospectively reviewed from the SUFU annual winter meetings from the years of 2015-2018. Primary authors and/or presenters were identified by gender via query of publicly available social media accounts, institutional and program websites. Any abstracts where gender was unable to be identified were excluded. Abstracts that had been voluntarily withdrawn were also excluded. Chi-square test examined the relationship between project author, gender, and year of presentation.

Results: A total of 1,034 projects, including poster, video, and podium presentations were analyzed over the study period. Four hundred and eighty-two projects included a female first author (47%), and 552 projects (53%) listed a male first author. Female first authorship ranged from 43% to 50%, and male from 50% to 57% (Figure 1). Only one meeting year (2016) showed a statistically significant difference between female-to-male authorship (p = 0.02). There was no statistically significant relationship between the meeting year and first author gender (p = 0.06).

Figure 1. Distribution of female-to-male authorship

Conclusion: As opposed to general urology and other urologic subspecialties, the academic presence of female presenters and primary authors as compared to their male counterpart at the SUFU annual meetings is near equivalent. In addition, the number of females appears to increase over the study period. More comprehensive studies may elucidate specific associations pertaining to research focus and/or academic positions.
Poster #NM219
SURGICAL INTERVENTIONS FOR THE COMPLICATIONS FROM SYNTHETIC MESH AFTER MIDURETHRAL SLING SURGERY
Ji-Yeon Han¹, Sung Tae Cho²
¹Pusan National University Yangsan Hospital, ²Hallym University School of Medicine
Presented By: Ji-Yeon Han, MD, PHD

**Introduction:** Female stress urinary incontinence (SUI) is highly prevalent, and synthetic midurethral sling procedure is the most common type of anti-incontinence surgery. After the synthetic midurethral sling procedure, however, recognized complications include urinary storage and voiding symptoms, urethral, bladder and vaginal extrusion. The purpose of this study was to describe the evaluation and management of complications from synthetic mesh after surgery for SUI.

**Methods:** From March 2012 to April 2018, we retrospectively reviewed and analyzed the medical records of all patients who were referred to a tertiary referral centre for lower urinary tract symptoms and were diagnosed and underwent surgical intervention to manage the mesh-related complications after mid-urethral sling surgery.

**Results:** A total 34 patients were diagnosed to mesh-related complications after midurethral sling surgery and underwent surgical managements. The complaints at evaluation were vaginal bloody spotting (n=15, 44.1%), recurrent cystitis (n=12, 35.3%), groin pain (n=2, 5.9%), voiding dysfunction (n=2, 5.9%), recurrence of SUI (n=2, 5.9%) and urgency or urgency incontinence (n=1, 2.9%). The mean time from midurethral sling surgery to first examination at a tertiary referral site was 5.7 ± 3.7 years (range, 0.08-15 years). All of the patients in this study, 21 patients (61.8%) had mesh perforations into the vagina, 5 patients (14.7%) into the urethra and 4 patients (11.8%) into the bladder. The most surgical intervention for treatment of their complication was the complete removal of the mesh by vaginal approach (n=31, 91.2%) (Figure 1). After surgical intervention, the symptoms related mesh perforations and infection were complete cured (n=30, 88.2%). However, groin pain and voiding dysfunction were persist after mesh removal (n=2, 5.9%). After the removal of mesh, 3 patients (8.8%) had recurred SUI and underwent redo midurethral sling surgery.

**Conclusion:** These results suggest that mesh-related complications that are referred to tertiary centre are various and severe enough to require surgical intervention. This information is helpful in decision-making for surgical procedures to manage mesh complications.
**Poster #NM220**

RISK FACTORS FOR POOR ADHERENCE TO ANTICHOLINERGICS THERAPY IN CHILEAN PATIENTS WITH OVERACTIVE BLADDER (OAB): ANALYSIS OF A LARGE DATASET FROM A PROSPECTIVELY COLLECTED DATABASE

Marcelo Mass-Lindenbaum¹, Gabriela Alarcón², Javier Pizarro-Berdichevsky³

¹Universidad de los Andes, ²División de Obstetricia y Ginecología, Pontificia Universidad Católica de Chile,
³Urogynecology Unit Sótero del Río Hospital. División de Obstetricia y Ginecología, Pontificia Universidad Católica de Chile

Presented By: Javier Pizarro-Berdichevsky, MD

**Introduction:** Anticholinergics abandonment has been described as high as 82% at 12 months since prescription. Abandonment has been associated with side effects(SE), lack of effectiveness, cost among others. Our first option is immediate release oxybutynin, which has been associated with the highest rate of SE. Its prescribed in a low dosage(5 mg/BID). The dosage could be increased to improve results. There is a paucity in the literature of anticholinergics use in the Chilean population, specially risk factor analysis for abandonment. The aim of this study is to describe OAB patient's characteristics using anticholinergics, abandonment rate, causes for abandonment and if possible, risk factors related to abandonment.

**Methods:** A retrospective analysis from 2008-2017 was performed. Inclusion criterion was use of any anticholinergic drug in OAB patients. The primary endpoint was adherence. SE, cause for abandonment and pelvic floor comorbidities are also described. Demographic variables were analyzed and also Sandvik score(ISI), dosage received and cause of abandonment. Data of office-based cystometry(OBC) was analyzed when available. A logistic regression analysis was also performed for abandonment including variables with p values.

**Results:** 912 patients met the inclusion criterion. Demographic variables are in table 1. 168(18.4%) patients abandoned the therapy. 16(9.5%) of them reported dry mouth, 1(0.6%) constipation, 7(4.2%), other xerostomy and 17(10.1%) other symptoms. Lack of effectiveness was the most common cause of abandonment with 69 patients (43.4%) followed by adverse effects with 52(32.7%), cost was not a cause of abandonment. 75(71.4%) patients abandoned while using a low dose of oxybutynin. After a logistic regression analysis, the variables that persisted significant were “any adverse effect” (OR 39.6;95% CI;3.9-401) and specifically dry mouth (OR 10;CI 95%;3.1-32).

**Conclusion:** The abandonment rate was 18.4%, which is lower than previously described. This could be explained by a different population, or by an incomplete registry, a known defect of retrospective studies. The principal factor of abandonment was lack of effectiveness. SE were also strongly correlated to abandonment, implying a 39-fold risk to quit. Our results could be used to advise patients, from the very beginning of the OAB treatment pathway, that other treatment line options are available due to the common SE of this drug family.

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<th>COMORBIDITIES</th>
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<td>Diabetes</td>
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<td>Cardiovascular disease</td>
<td>15 (1.6%)</td>
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<tr>
<td>Pelvic organ prolapse</td>
<td>505 (55.4%)</td>
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<tr>
<td>Previous hysterectomy</td>
<td>468 (50.8%)</td>
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<td>Depression</td>
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<td>Detrusor Instability</td>
<td>257 (28.17%)</td>
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<tr>
<td>Post-menopausal</td>
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Poster #NM221
TVT EXACT® V/S KIM® SYSTEM SLINGS, COMPARISON OF THE EFFICACY IN THE TREATMENT OF FEMALE URINARY STRESS INCONTINENCE.
Fabiola Schlageter¹, Gabriela Alarcón¹, Marcelo Mass-Lindenbaum², Javier Pizarro-Berdichevsky¹
¹Division de Obstetricia y Ginecologia, Hospital Sótero del Río, Pontificia Universidad Católica de Chile, ²Universidad de los Andes, Chile
Presented By: Javier Pizarro-Berdichevsky, MD

Introduction: There are many slings to treat stress urinary incontinence (SUI). Our historical MUS was TVT exact®. We considered KIM® an equivalent alternative, reducing costs. We shifted to that MUS in 2016. The aim was to compare the efficacy between these two MUS in primary SUI.

Method: Retrospective analysis (2010-2018) of primary KIM® and TVT Exact® procedures from our database. Demographics and follow up variables were analyzed. The composite surgical failure was defined as subjective complaint of SUI, leakage during exam follow up and reoperation. Complication variables (Lower urinary tract symptoms, obstructive voiding dysfunction, extrusion, pain and recurrent urinary tract infection) were analyzed. Data is presented as mean +/- SD, median (IQR) or n (%). A logistic regression analysis was used.

Results: 767 patients underwent MUS (2010-2018). 226 were included. 166 underwent TVT exact® and 61 KIM®. The median age was 55±9.7, parity 3(IQR 2-4), 151(66.5%) were postmenopausal. IMC>35 40(19.7%). 101(44.7%) patients had a concomitant prolapse surgery, 4 had reoperation of SUI (1.8%). 10 sling sections, all in the TVT exact® group (6.1%). The median FU was 9.7(IQR 6.2-20-1) months. The FU for TVT exact® was 13.5(IQR 6.6-26) vs KIM® 7.3(IQR 6.2-9.6). The primary outcome for TVT exact® and KIM® had no significant differences (13.9 vs 16.4% respectively). Symptomatic recurrence was 13.9% and 14.8%, leakage at exam 6.7% vs 6.6% and reoperation for SUI 1.8% vs 1.6% respectively. 57(34.5%) in TVT exact® and 13(21.3%) in KIM® had complications. After a logistic regression analysis the only significant variable as risk factor for the composite outcome was BMI > 35 with an OR 2.6(CI 95% 1.079-6). Months of FU and type of MUS were not predictors of failure.

Conclusion: There were no significant differences between the two groups in the primary composite outcome. To have BMI>35 folds the risk 2.6 times(OR 2.6 [CI 95% 1.079-6]) for surgical failure. TVT exact® had more complications than KIM®. We believe that the lower percentage of complications in KIM® group could be related to changes in surgical and clinical practice though time in our group.

Poster #NM222 - WITHDRAWN
Poster #NM223
URETHRAL BULKING IN THE IMMEDIATE POST-OPERATIVE PERIOD FOR THE TREATMENT OF STRESS URINARY INCONTINENCE AFTER PELVIC ORGAN PROLAPSE REPAIR
Rachael D. Sussman, Benoit Peyronnet, MD, Ricardo Palmerola, Christina Escobar, Victor Nitti
New York University
Presented By: Rachael D. Sussman, MD

Introduction: Surgical correction of pelvic organ prolapse (POP) can unmask occult stress incontinence (OSUI). While pre-operative evaluation is often used to assess for OSUI and determine the need for simultaneous anti-incontinence procedures, OSUI can still develop even with a negative preoperative assessment. Urethral bulking injections can be done in the office and may provide an immediate low-risk solution to what patients may perceive as a negative outcome. We sought to report the safety and efficacy of urethral bulking use in the immediate post-operative period.

Methods: Retrospective review of all patients undergoing urethral bulking injection within 6 months of POP repair without concomitant anti-incontinence procedure.

Results: Six patients underwent POP repair followed by urethral bulking injection within 6 months of surgery. All patients had a pre-operative evaluation for OSUI. All patients had a pre-operative cough stress test done with and without prolapse reduction and 3 of 6 patients had preoperative urodynamics performed with prolapse reduction; in all cases OSUI was not demonstrated. Two patients reported urgency urinary incontinence preop; 1 underwent urodynamics demonstrating detrusor overactivity without incontinence, the other had a pre-operative pessary trial and did not report any leakage with activity. All patients reported SUI post operatively and underwent urethral bulking with calcium hydroxyapatite performed a median of 42 days from the time of surgery (range 21-101 days). One patient had difficulty urinating requiring 1 day of catheterization; there were no other reported complications. Both patients with urgency incontinence had persistent symptoms post-bulking, 1 improved with a beta-3 agonist and the other deferred treatment. Five of 6 patients returned for follow-up after injection; 4/5 had immediate improvement in SUI. The one patient with persistent SUI underwent a second urethral bulking injection 14 days after the first, and SUI improved. At long term follow (median of 33 months, range 4-51 months), 4 denied any SUI and 1 had minimal SUI that was not bothersome enough to warrant treatment.

Conclusion: The use of urethral bulking in the immediate post operative period appears to be safe and efficacious and may present an immediate solution for post prolapse repair SUI, which patients may otherwise perceive as a negative surgical outcome.
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3/2/2019  8:00 a.m.

GILL, BRADLEY
2/28/2019  6:10 p.m.  AB #16
3/1/2019  8:15 a.m.  AB #NM68

GILLERAN, JASON
2/28/2019  4:00 p.m.

GINSBERG, DAVID
3/1/2019  10:45 a.m.
3/1/2019  3:00 p.m.

GIUSTO, LAURA
3/1/2019  8:15 a.m.  AB #NM97

GOLDMAN, HOWARD
2/28/2019  7:35 a.m.
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| **RODRIGUEZ, DAYRON** |
| 2/28/2019 5:00 p.m. AB #M12 |
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| **ROGER, ELIZABETH** |
| 2/28/2019 6:20 p.m. AB #17 |

| **ROGULA, BASIA** |
| 3/1/2019 4:00 p.m. AB #M33 |

| **ROLDÁN-ALZATE, ALEJANDRO** |
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| **ROLSTON, RENEE** |
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| **ROSENBLUM, NIRIT** |
| 2/28/2019 9:00 a.m. |

| **ROVNER, ERIC** |
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<td>TAKACS, ELIZABETH</td>
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<td>VAN KERREBROECK, PHILIP</td>
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<td>VERSTEGEN, ANNE</td>
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<td>INDEX OF PRESENTERS</td>
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<td><strong>VIGIL, HUMBERTO</strong> 3/2/2019  8:10 a.m.  AB #34</td>
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<td><strong>VIVIANO, CHARLES</strong> 3/2/2019  9:30 a.m.</td>
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</table>
| **VOLLSTEDT, ANNAH** 3/1/2019  4:00 p.m.  AB #NM149  
3/2/2019  8:00 a.m.  AB #M35  |
| **VURTURE, GREGORY** 2/28/2019  1:00 p.m.  AB #NM11  
3/1/2019  8:15 a.m.  AB #M21  |
| **WALLACE, SHANNON** 2/26/2019  5:20 p.m.  AB #BS3  |
| **WANG, CONNIE** 2/27/2019  4:45 p.m.  AB #BS27  |
| **WEIN, ALAN** 2/28/2019  11:20 a.m.  
2/28/2019  2:20 p.m.  
3/1/2019  3:00 p.m.  |
| **WEINFURT, KEVIN** 2/27/2019  1:45 p.m.  |
| **WEISS, JEFFREY** 3/1/2019  11:35 a.m.  |
| **WELK, BLAYNE** 3/1/2019  3:50 p.m.  
2/28/2019  1:00 p.m.  AB #1  
2/28/2019  1:00 p.m.  AB #M5  
2/28/2019  5:00 p.m.  AB #NM41  |
| **WERNEBURG, GLENN** 3/1/2019  4:00 p.m.  AB #NM110  |
| **WHILES, BRISTOL** 3/1/2019  4:00 p.m.  AB #NM159  |
| **WHITE, AMANDA** 3/1/2019  8:15 a.m.  AB #M20  |
| **WHITESIDE, JAMES** 3/2/2019  10:30 a.m.  |
| **WHITMORE, KRISTENE** 2/28/2019  3:30 p.m.  |
| **WILLIAMS, BEVERLY** 2/28/2019  1:00 p.m.  AB #NM2  |
| **WILLIAMS, STEPHANIE** 2/28/2019  5:00 p.m.  AB #NM61  |
| **WILSON, TRACEY** 2/28/2019  9:00 a.m.  |
| **WINTERS, J. CHRISTIAN** 2/28/2019  11:20 a.m.  |
| **WONG, DANIEL** 3/1/2019  8:15 a.m.  AB #NM203  |
| **XIN, WENKUAN** 2/26/2019  2:00 p.m.  |
| **YU, WEIQUN** 2/27/2019  12:03 p.m.  AB #9  |
| **ZAHNER, PATRICIA** 2/28/2019  5:00 p.m.  AB #NM53  |
| **ZDERIC, STEPHEN** 2/27/2019  11:33 a.m.  AB #4  |
| **ZHANG, EMILY** 3/1/2019  4:20 p.m.  AB #29  |
| **ZHANG, JJ** 3/1/2019  7:00 a.m.  Video #1  |
| **ZHANG, YINGCHUN** 2/26/2019  5:20 p.m.  
3/1/2019  10:30 a.m.  
2/28/2019  5:00 p.m.  AB #NM34  |
| **ZHAO, HANSON** 3/2/2019  8:00 a.m.  AB #NM167  
3/2/2019  8:00 a.m.  AB #NM191  |