



THE OFFICIAL NEWSMAGAZINE OF THE AMERICAN UROLOGICAL ASSOCIATION

– FOCUS ISSUE –

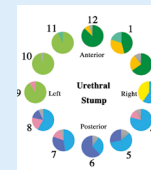
Prostate Cancer

EDITOR: Stacy T. Tanaka, MD, MS, FACS, *University of Alabama at Birmingham*
GUEST EDITORS: Alexander P. Cole, MD, *Brigham and Women's Hospital, Harvard Medical School*
Simpa S. Salami, MD, MPH, *University of Michigan and Rogel Cancer Center*
Mary E. Westerman, MD, *Louisiana State University Health Science Center - New Orleans*

Addressing the Intersection of Climate Change and Cancer: A Roadmap to Action for Urological Care Providers

Alexander P. Cole, MD
Hari S. Iyer, ScD, MPH

INSIDE THIS PROSTATE CANCER FOCUS ISSUE



Artificial Intelligence in Radical Prostatectomy



Breaking Boundaries in Robotic Surgery: Unveiling the Medtronic Hugo Robotic-assisted Surgery System



Challenges of Community Outreach With the Mass General Brigham Prostate Cancer Outreach Clinic

Prostate Cancer in Transgender Women: Raising Awareness in Our Most Marginalized Populations

Testosterone Replacement After Definitive Prostate Cancer Treatment: Where Do We Stand?

CLINICAL NEWS

The Role of Botulinum Toxin for the Pediatric Neurogenic Bladder: Who, When, and How Much Is Too Much?

Is Stentless Ureteroscopy Safe in the Dusting Era?

Delayed Orgasm From Lumbosacral Disc Disease: Role of the Urologist

Robot-assisted Bladder Augmentation: Is the Juice Worth the Squeeze?

NEWS FROM THE AUA

Institute for Leadership and Business Scientific Research: Can the Results Be Trusted?

Keeping the Momentum With Innovation Nexus

ON THE PERSONAL SIDE

An Interview With Dr. Milhouse
Mentorship Matters: The Impact of a Private Practice Urologist

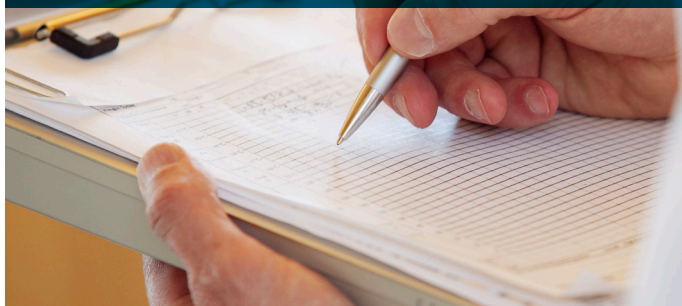
ON THE BUSINESS SIDE

The Privately Insured Vasectomy Rate Increased From 2014 to 2021: Will It Increase More?

The Fifty-cent Marketing Idea
Predictors of Financial Toxicity Among United States Prostate Cancer Survivors: A National Survey

Use of Open Payments Program Database to Study Financial Conflicts of Interest in Urology

Anna-Lisa V. Nguyen, BHSc
David-Dan Nguyen, MDCM, MPH
Christopher J. D. Wallis, MD, PhD



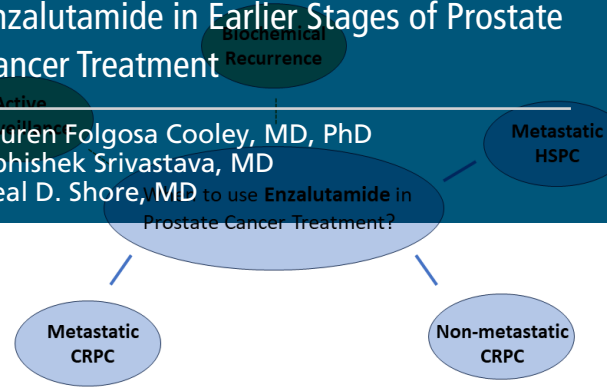
Racial Health Disparities in Prostate Cancer Care

Ernest A. Morton, MD, MBA, MS
Nicholas W. Eyrich, MD, MS
Randy A. Vince Jr, MD, MS
Ashanda R. Esdaille, MD



Enzalutamide in Earlier Stages of Prostate Cancer Treatment

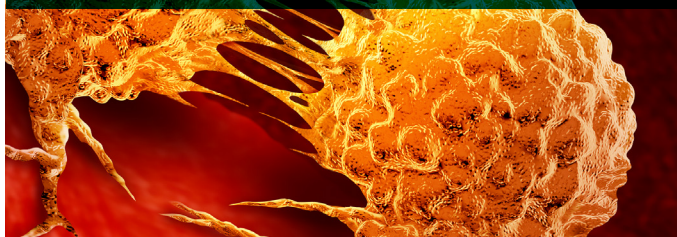
Lauren Folgosa Cooley, MD, PhD
Abhishek Srivastava, MD
Neal D. Shore, MD



Utilization of Enzalutamide in Prostate Cancer Treatment. Blue – Guidelines approved are in place. Orange – Trials evidence to suggest potential future utilization of enzalutamide in this sensitive prostate cancer. CRPC = Castrate-resistant prostate cancer.

Improving Equity in Prostate Cancer Outcomes Through Patient-reported Outcome Measures

Mara Koelker, MD
Jonathan Makanjuola, MD



AUANews^{Extra}

September 2023, Volume 2 | Issue 9

EDITOR IN CHIEF

Stacy T. Tanaka, MD, MS, FACS
University of Alabama at Birmingham

ASSOCIATE EDITORS

Endourology
Amy E. Krambeck, MD, Northwestern University School of Medicine

Genitourinary Reconstruction
Jeremy B. Myers, MD, University of Utah

Outcomes
David F. Penson, MD, MPH, Vanderbilt University Medical Center

Female Urology
David Rapp, MD, University of Virginia Health

Men's Health
Hossein Sadeghi-Nejad, MD, CM, FACS,
NYU Langone - Grossman School of Medicine

Pediatrics
Aseem R. Shukla, MD, Children's Hospital of Philadelphia

Oncology
Kelly L. Stratton, MD, University of Oklahoma

SECTION EDITORS

Practice Tips & Tricks
Neil Baum, MD, Tulane Medical School

Medicolegal Connection
Glenn W. Dopf, JD, LLM and Martin B. Adams, JD, DOPF, P.C.

Office & Surgical Technologies
Bodo Knudsen, MD, FRCSC, The Ohio State University,
Wexler Medical Center

Have You Read?
Craig Niederberger, MD, FACS, UIC College of Medicine
and UIC College of Engineering

Medical Ethics
Raj Pruthi, MD, MHA, FACS, The Janssen Pharmaceutical
Companies of Johnson & Johnson

From the History Committee: Taking a History
Ronald Rabinowitz, MD, University of Rochester
Medical Center

Radiology Corner
Ardeshir R. Rastinehad, DO, Smith Institute for Urology
at Northwell Health

Coding Tips & Tricks
Jonathan Rubenstein, MD, Chair, AUA Coding and
Reimbursement Committee

Medical Student Column
Yash B. Shah, BS, Thomas Jefferson University

SPANISH EDITION EDITOR

Alejandro Remigio Rodriguez, MD
Wake Forest University School of Medicine

PORTUGUESE EDITION EDITOR

Fernando J. Kim, MD, MBA, FACS
Denver Health Medical Center

EXECUTIVE EDITORS

Patricia Banks, Executive Vice President and Chief
Marketing and Development Officer

Jennifer Regala, Director of Publications

MANAGING EDITORS

Heather R. Good
Carmen Harris
Martha Keyes
Scott D. Morrow
Kathleen Warshawsky

AMERICAN UROLOGICAL ASSOCIATION

2023–2024 AUA Officers
President
Randall B. Meacham, MD
President-elect
Stephen Y. Nakada, MD, FACS, FRCU
Immediate Past President
Edward M. Messing, MD, FACS
Secretary
David F. Penson, MD, MPH
Treasurer
Thomas F. Stringer, MD, FACS

PUBLICATIONS DEPARTMENT

American Urological Association
publications@AUAnet.org

PRODUCTION

KnowledgeWorks Global Ltd.
2905 Byrdhill Road, Richmond, VA 23228

ADVERTISING SALES

The Walchli Tauber Group
(443) 512-8899
stephen.tauber@wt-group.com

PROSTATE CANCER

Addressing the Intersection of Climate Change and Cancer: A Roadmap to Action for Urological Care Providers

Alexander P. Cole, MD

Brigham and Women's Hospital, Harvard Medical School, Boston, Massachusetts
Center for Surgery and Public Health, Brigham and Women's Hospital, Harvard Medical School, Boston, Massachusetts

Hari S. Iyer, ScD, MPH

Rutgers Cancer Institute of New Jersey, New Brunswick
Rutgers Robert Wood Johnson Medical School, New Brunswick, New Jersey

It is difficult to overstate the impacts of anthropogenic climate change on natural ecosystems, including direct and indirect influences on human health.^{1,2} As members of a comparatively small surgical subspecialty, urologists may feel isolated and limited in their ability to confront the large-scale public health challenges posed by climate change. Nonetheless, there is growing evidence for links between climate change, environmental health, and numerous urological diseases.³⁻⁵ A recently convened working group at the National Cancer Institute discussed challenges and potential solutions to climate related impacts on cancer care and outcomes.⁶ We believe that the urological community must also adapt and identify ways our specialty can help meet these challenges.

Our objectives here are to (1) describe the links between planetary health (the health of humans and the natural systems that support our health), climate change, and cancer, (2) describe the challenges facing the provision of prostate cancer care in the era of anthropogenic climate change, and (3) outline steps to address and mitigate the major impending climate change-related challenges of urological cancer care.

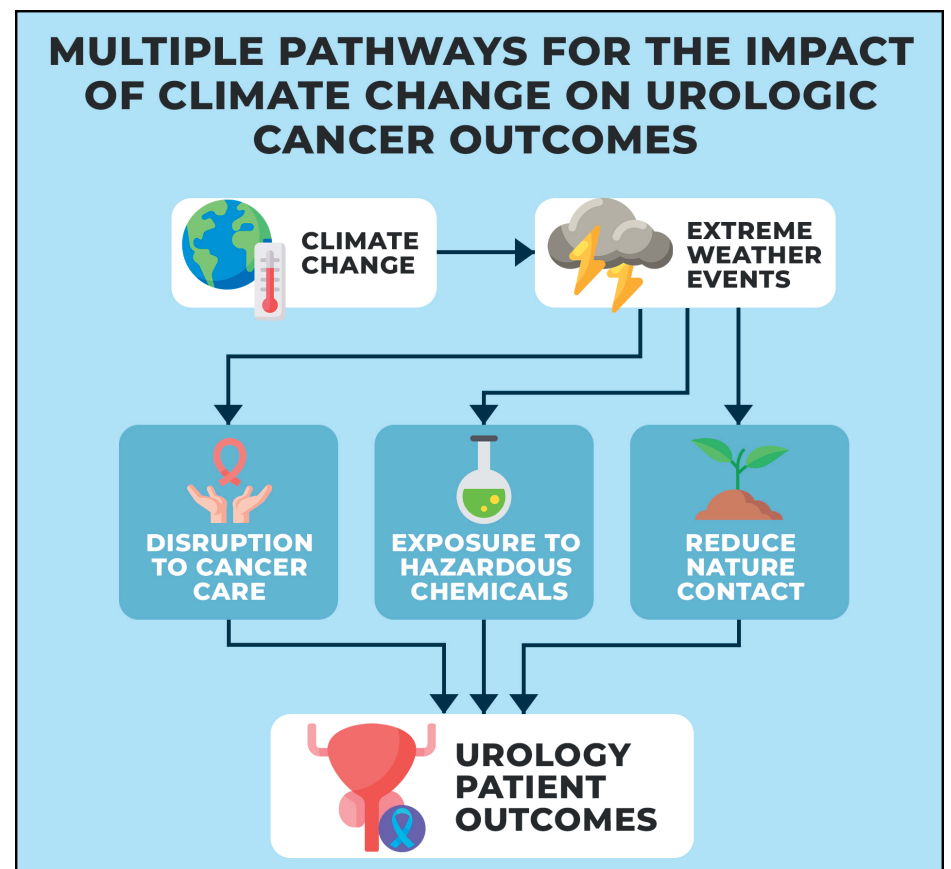


Figure. Hypothesized pathways linking climate change to urological patient outcomes.

Impacts of Climate Change on Urological Patient Outcomes

Climate-related changes have well-known impacts on natural ecosystems, which may increase exposure to environmental risk factors that influence urological cancer incidence (see Figure).⁷ Extreme weather events (eg, flooding, hurricanes) can inundate sites contaminated by pollutants with water, spreading carcinogenic chemicals into drinking water sources and agricultural sites.⁸⁻¹⁰ Endocrine-disrupting chemicals which are widely used in indus-

trial manufacturing, such as per- and polyfluoroalkyl substances, have been linked with several cancers, including prostate, testes, and kidney.¹¹

Higher prostate cancer incidence and worse outcomes have been observed in regions with lower overall environmental quality (eg, higher pollution exposure, social and racial disadvantage).^{12,13} Regarding heat and sun exposure, prostate cancer risk may be higher among those with frequent lifetime sunburns (OR 4.30, 95% CI 1.7-11.2) and higher general sun exposure in adulthood per week (OR 2.03, 95% CI 1.09-3.81).¹⁴

→ Continued on page 3

ADDRESSING THE INTERSECTION OF CLIMATE CHANGE AND CANCER

→ Continued from page 2

Emerging research suggests that access to green spaces (such as parks and tree cover) may influence health outcomes, including prostate and other cancers. Changes in biodiversity, habitat loss, and reductions in greenspace could lead to poorer survival in urological cancer patients. Men with lower access to greenspace may experience exacerbation of carcinogenic inflammatory pathways, higher prevalence of inflammation-related pathology in prostate tumors, and higher prostate cancer-specific mortality.¹⁵⁻¹⁷

Climate Change, Extreme Weather, and Impacts on the Health System

Climate-related natural disasters such as hurricanes, wildfires, and other extreme weather events will be far more common in the warming planet.¹⁸ Alongside direct health impacts of these events (eg, heat stroke, dehydration, drowning), extreme weather events can indirectly impact patient outcomes through disruptions to care delivery.¹⁹ Both Hurricane Katrina and Hurricane Sandy led to hospital closures, lack of staffing, medication shortages, and interruptions of coordinated cancer care.²⁰ Recent hurricanes in Puerto Rico caused shortages of IV fluids, which impacted clinical care thousands of miles away from the site of the hurricane.^{21,22} Rural health centers—often the sole option for their patients—are already facing high rates of closures and loss of the rural physician workforce.^{23,24} These same hospitals are already often under-resourced, and therefore may be particularly susceptible to climate-related disruptions which could accelerate small hospital closures.²⁵

What Can We Do as Clinicians and Researchers?

Tying urological oncology to planetary health co-benefits

Many health behavioral change recommendations also mitigate adverse impacts of climate change

on natural systems. Encouraging plant-based diets is one such strategy of particular relevance to urologists.^{5,26} Diets high in meat and low in fruits and vegetables are associated with greater risk of the top 3 urological malignancies including prostate, bladder, and renal cancer.²⁷⁻²⁹ Meat-heavy diets are a risk factor for stone disease; reducing dietary meat consumption could offer relief to those with recurrent urolithiasis.³⁰

On a global scale, livestock farming is a major contributor to greenhouse gases, which, in turn, drives more extreme weather and heat waves (with many of the downstream effects listed above). At the societal level, animal agriculture drives ecosystem-level changes, including loss of biodiversity and reductions in greenspace, which, as noted earlier, may increase risk of prostate cancer-related mortality.¹⁶ Animal agriculture also contributes to antibiotic resistance: of the over 30,000,000 pounds of antibiotics used in the United States, 80% are in livestock farming. Of these, most end up in soil and water where they encourage antibiotic resistance: a significant source of sepsis after prostate biopsies.³¹

Numerous companies (Impossible, Beyond) are bringing plant-based meat substitutes to market, and tasty, nutritious cuisines that offer health benefits are already available (for example, the world-renowned “Mediterranean Diet” is associated with greenhouse gas reductions that closely align with targets).³² Reducing environmental impact does not require 100% adoption of plant-based diets: researchers from the UK estimated that merely optimizing diets to comply with the WHO recommendations (including decreasing red meat consumption by 38% and increasing nonstarchy vegetables by 56.4% for men) would lead to a 17% reduction in greenhouse gas emissions from that country.³³

Reduce waste and advocate for a sustainable health delivery system

The US health system is the second most carbon-intensive industry in the United States.³⁴ Encouraging hospitals to reduce their energy

consumption will decrease fossil fuel usage while potentially benefiting patients and the health system as a whole. Strategies to increase efficiency by eliminating unnecessary testing, reducing costly and nonindicated services, reducing administrative burden, and efficiently sharing information all have the potential to streamline care while improving quality and sustainability.³⁵

Many physicians are respected community leaders. An example of this is physicians who are partners in group practices or who serve on hospital leadership boards. Leveraging trust from community members to advocate for policies that offer cancer and climate co-benefits is one way for physicians to shape values in this critical area.

Introducing sustainability protocols into health care delivery could address a perennial challenge: wasteful spending on health care in the United States. Our team has identified evidence for unwarranted variability and high costs in prostate cancer care.^{36,37} While much work in these areas has emphasized the benefits to the health system of reducing the costs of prostate cancer care, the very factors that contribute to high costs (administrative spending, variability in procedures, failures of care delivery, and low-value interventions) also contribute significant energy and carbon costs.

Building sustainable health care systems does not always require sacrifices in efficiency, and may more closely align with goals already held by physicians. In the clinical sphere, proposals that encourage faster operating room turnovers, increased use of virtual health visits, and reduction in administrative workload are likely to be popular with the physician work force and can reduce carbon emissions. For example, a recent analysis found that transitioning to telehealth visits could result in a significant 40- to 70-fold decrease in carbon emissions while increasing patient and provider satisfaction.³⁸

Build a climate-adaptive health system

Physician leaders must respond to growing climate change-im-

posed stresses to the health system. The Centers for Medicaid and Medicare Services currently requires that providers have an emergency preparedness plan.^{6,39} Unfortunately, these plans are not publicly available and although the body of literature is growing, limited data are available to understand disruptions in cancer care after natural disasters and how to respond to them.⁴⁰ A recent report of National Cancer Institute-designated cancer centers revealed that only 17 (24%) provided emergency preparedness information regarding climate-driven disasters on their public websites.⁴¹ Climate disasters may force patients and treatment to be moved to different locations, with disruptions lasting days or months. Additional recommendations include having a communication plan so that patients know who to contact following a disaster, sharing plans across state lines and across institutions, and providing a centralized system for cancer care in case of emergencies.

Conclusions and Future Directions

In closing, we argue for a urology-focused research agenda to clarify links between cancer and climate change (see Figure). The medical and scientific community can promote research into these key areas and support funding initiatives. Public health scientists have responded to major public health challenges from AIDS to smoking. We must remain confident that our commitment to our patients and communities, along with our expertise in caring for patients and understanding the causes of their illnesses, will allow us to generate the knowledge, policies, and adaptations needed to mitigate the harms of climate change.

We encourage the urological community to reflect on the changes we must make to our behaviors, clinical practices, and health system in the era of climate change and to identify strategies to meet these challenges for us and our patients. ■

→ Continued on page 4

ADDRESSING THE INTERSECTION OF CLIMATE CHANGE AND CANCER

→ Continued from page 3

- Epstein PR. Climate change and human health. *N Engl J Med*. 2005;353(14):1433-1436.
- World Health Organization. Regional Office for South-East Asia. (2008). Climate change and health. WHO Regional Office for South-East Asia. <https://apps.who.int/iris/handle/10665/126809>
- Loughlin KR. Global warming: the implications for urologic disease. *Can J Urol*. 2019;26(4):9806-9808.
- Brikowski TH, Lotan Y, Pearle MS. Climate-related increase in the prevalence of urolithiasis in the United States. *Proc Natl Acad Sci U S A*. 2008;105(28):9841-9846. doi:10.1073/pnas.0709652105
- Cole AP, Gupta N, Loeb S. The plant-based prescription: how dietary change can improve both urological and planetary health. *Eur Urol*. 2023;S0302-2838(23)02953-6.
- Nogueira LM, Crane TE, Ortiz AP, D'Angelo H, Neta G. Climate change and cancer. *Cancer Epidemiol Biomarkers Prev*. 2023;32(7):869-875.
- Myers SS. Planetary health: protecting human health on a rapidly changing planet. *Lancet*. 2017;390(10114):2860-2868.
- Ponting J, Kelly TJ, Verhoef A, Watts MJ, Sizmurt T. The impact of increased flooding occurrence on the mobility of potentially toxic elements in floodplain soil—a review. *Sci Total Environ*. 2021;754:142040.
- Tuminello S, Lieberman-Cribbin W, Kerath S, et al. Exposure to chemical and toxic elements following Hurricane Harvey. *Environ Epidemiol*. 2019;3:239-240.
- Erickson TB, Brooks J, Nilles EJ, Pham PN, Vinck P. Environmental health effects attributed to toxic and infectious agents following hurricanes, cyclones, flash floods and major hydrometeorological events. *J Toxicol Environ Health B Crit Rev*. 2019;22(5-6):157-171.
- Steenland K, Winquist A. PFAS and cancer, a scoping review of the epidemiologic evidence. *Environ Res*. 2021;194:110690.
- Vigneswaran HT, Jagai JS, Greenwald DT, et al. Association between environmental quality and prostate cancer stage at diagnosis. *Prostate Cancer Prostatic Dis*. 2021;24(4):1129-1136.
- Multigner L, Ndong JR, Giusti A, et al. Chlorocone exposure and risk of prostate cancer. *J Clin Oncol*. 2010;28(21):3457-3462.
- Chia SE, Wong KY, Cheng C, Lau W, Tan PH. Sun exposure and the risk of prostate cancer in the Singapore prostate cancer study: a case-control study. *Asian Pac J Cancer Prev*. 2012;13(7):3179-3185.
- Iyer HS, Hart JE, James P, et al. Impact of neighborhood socioeconomic status, income segregation, and greenness on blood biomarkers of inflammation. *Environ Int*. 2022;162:107164.
- Iyer HS, James P, Valeri L, et al. The association between neighborhood greenness and incidence of lethal prostate cancer: a prospective cohort study. *Environ Epidemiol*. 2020;4(2):e091.
- Iyer HS, Vaselkiv JB, Stopsack KH, et al. Influence of neighborhood social and natural environment on prostate tumor histology in a cohort of male health professionals. *Am J Epidemiol*. 2023;kwad112.
- Ebi KL, Vanos J, Baldwin JW, et al. Extreme weather and climate change: population health and health system implications. *Annu Rev Public Health*. 2021;42(1):293-315.
- Salas RN, Friend TH, Bernstein A, Jha AK. Adding a climate lens to health policy in the United States. *Health Affairs*. 2020;39(12):2063-2070.
- Susman E. Unforeseen challenges after hurricane devastation. *Lancet Oncol*. 2005;6(10):744-746.
- Sacks CA, Kesselheim AS, Fralick M. The shortage of normal saline in the wake of hurricane maria. *JAMA Intern Med*. 2018;178(7):885-886.
- Lynch KA, Merdjanoff AA. Impact of disasters on older adult cancer outcomes: a scoping review. *JCO Glob Oncol*. 2023;9:e2200374. doi:10.1200/GO.22.00374
- Germack HD, Kandrack R, Martsolf GR. When rural hospitals close, the physician workforce goes. *Health Affairs*. 2019;38(12):2086-2094.
- Planey AM, Planey DA, Wong S, McLafferty SL, Ko MJ. Structural factors and racial/ethnic inequities in travel times to acute care hospitals in the rural US South, 2007-2018. *Milbank Q*. 2023;101.1111/1468-0009.12655.
- Khushalani JS, Holmes M, Song S, et al. Impact of rural hospital closures on hospitalizations and associated outcomes for ambulatory and emergency care sensitive conditions. *J Rural Health*. 2023;39(1):79-87.
- Shah UA, Merlo G. Personal and planetary health—the connection with dietary choices. *JAMA*. 2023;329(21):1823-1824.
- Taylor J, Gupta N, Blanck J, Loeb S. A systematic review of plant-based diets and bladder cancer: a call for further research. *SIUJ*. 2022;3(4):240-244.
- Daniel CR, Park Y, Chow WH, Graubard BI, Hollenbeck AR, Sinha R. Intake of fiber and fiber-rich plant foods is associated with a lower risk of renal cell carcinoma in a large US cohort. *Am J Clin Nutr*. 2013;97(5):1036-1043.
- Gupta N, Patel HD, Taylor J, et al. Systematic review of the impact of a plant-based diet on prostate cancer incidence and outcomes. *Prostate Cancer Prostatic Dis*. 2022;25(3):444-452.
- Hess B, Mauron H, Ackermann D, Jaeger P. Effects of a 'common sense diet' on urinary composition and supersaturation in patients with idiopathic calcium urolithiasis. *Eur Urol*. 1999;36(2):136-143.
- Steenfels D, Slabbaert K, De Wever L, Vermeersch P, Van Poppel H, Verhaegen J. Fluoroquinolone-resistant *E. coli* in intestinal flora of patients undergoing transrectal ultrasound-guided prostate biopsy—should we reassess our practices for antibiotic prophylaxis?. *Clin Microbiol Infect*. 2012;18(6):575-581.
- Castaldi S, Dembska K, Antonelli M, Petersson T, Piccolo MG, Valentini R. The positive climate impact of the Mediterranean diet and current divergence of Mediterranean countries towards less climate sustainable food consumption patterns. *Sci Rep*. 2022;12(1):8847.
- Milner J, Green R, Dangour AD, et al. Health effects of adopting low greenhouse gas emission diets in the UK. *BMJ Open*. 2015;5(4):e007364-e007364.
- Eckelman MJ, Sherman J. Environmental impacts of the US health care system and effects on public health. *PLoS One*. 2016;11(6):e0157014.
- Setoguchi S, Leddin D, Metz G, Omary MB. Climate change, health, and health care systems: a global perspective. *Gastroenterology*. 2022;162(6):1549-1555.
- Cole AP, Chen X, Langbein BJ, et al. Geographic variability, time trends and association of preoperative magnetic resonance imaging with surgical outcomes for elderly United States men with prostate cancer: a Surveillance, Epidemiology, and End Results–Medicare analysis. *J Urol*. 2022;208(3):609-617.
- Cole AP, Leow JJ, Chang SL, et al. Surgeon and hospital level variation in the costs of robot-assisted radical prostatectomy. *J Urol*. 2016;196(4):1090-1095.
- Holmner Å, Ebi KL, Lazuardi L, Nilsson M. Carbon footprint of telemedicine solutions—unexplored opportunity for reducing carbon emissions in the health sector. *PLoS One*. 2014;9(9):e105040.
- Centers for Medicare & Medicaid Services (CMS), HHS. Medicare and Medicaid programs; emergency preparedness requirements for Medicare and Medicaid participating providers and suppliers. Final rule. *Fed Regist*. 2016;81(180):63859-64044.
- Ginex P, Dickman E, Elia MR, et al. Climate disasters and oncology care: a systematic review of effects on patients, healthcare professionals, and health systems. *Support Care Cancer*. 2023;31(7):403.
- Espinell Z, Shultz JM, Aubry VP, et al. Protecting vulnerable patient populations from climate hazards: the role of the nations' cancer centers. *J Natl Cancer Inst*. 2023;djad139.

PROSTATE CANCER

Use of Open Payments Program Database to Study Financial Conflicts of Interest in Urology

Anna-Lisa V. Nguyen, BHSc

Schulich School of Medicine and Dentistry, London, Ontario, Canada

David-Dan Nguyen, MDCM, MPH

University of Toronto, Ontario, Canada

Christopher J. D. Wallis, MD, PhD

University of Toronto, Ontario, Canada
Mount Sinai Hospital, Toronto, Ontario, Canada
University Health Network, Toronto, Ontario, Canada

Background

Interactions between health care professionals and the pharmaceutical and medical device industries are essential to advancing medical knowledge and fostering innovation to ultimately improve patient care. This is also true in urology.

Urologists often engage in research and clinical trials sponsored by pharmaceutical and medical device companies, which help generate important data, develop new therapies, and refine existing treatments.

However, financial relationships between physicians and industry stakeholders may also generate conflicts of interest. These may influence medical decision-making, prescription practices, and reporting of research. For example, recent research demonstrated a relationship between payments from benign prostatic hyperplasia surgery device manufacturers and

positive published positions on that company's device by key opinion leaders.¹ To maintain the integrity of the profession and ensure patient trust, it is crucial to address and manage these conflicts of interest effectively.

The focus of this article is to explore industry payments to urologists, shedding light on the available evidence and discussing future research and initiatives needed in this space.

Open Payments Database

It has nearly been 10 years since the Centers for Medicare & Med-

icaid Services released the Open Payment Program (OPP) database which contains payments made to physicians by manufacturers of federally covered devices, drugs, or medical supplies. Physicians' ownership or investment interests are also captured. The purpose of the program is to enhance transparency in the health care system. To date, it is arguably the most significant initiative of its kind and contains more than 78.8 million public records that total \$63.2 billion US (USD) in transactions.² In the last decade, much of the research on

→ Continued on page 5

USE OF OPEN PAYMENTS PROGRAM DATABASE TO STUDY FINANCIAL CONFLICTS OF INTEREST IN UROLOGY

→ Continued from page 4

industry payments to urologists has relied on OPP.

Industry Payments to Urologists: What do We Know?

Research using OPP reports from 2014 found that \$32.4 million USD was being paid to over 8,000 urologists annually. As a whole, urologists were ranked eighth highest in terms of median total value of payments per capita out of all specialties.³ Between 2014 and 2018, 75% of urologists received at least 1 reported industry payment. While most received less than \$1,000 USD annually, in aggregate, this represented over \$168 million over these 5 years.⁴

Future Research: Differential Allocation of Industry Payments

While general characterizations of industry payments have been the focus of the last decade, there is growing interest in characterizing subgroups of physicians with important influence on practice.^{4,7} OPP data have been used to describe industry payments in urology using variables such as subspecialty, academic involvement, editorial board involvement, and guideline authorship.^{4,6,8} While these prominent urologists' relationships can be beneficial in advancing therapies through industry collaboration, the patients' best interests and trust must be at the forefront.

Moreover, future research can seek to further characterize urologists receiving industry payments and comparing them to the average urologist. Such analyses may elucidate avenues for further targeted policy development or investigation of the influence of industry on urological practice. We recently presented data evaluating high-payment urologists (eg, received more than \$50,000 USD in general payments in a single year). We found that the overwhelming majority of recipients were male,

the most highly represented subspecialty was urologic oncology, and 60% held an academic appointment.⁵ These individuals represent 1% of all US urologists who received general personal payments from industry in 2021. Interestingly, the AUA census in 2022 allows us to further contextualize our work: while gender and subspecialty representation is relatively proportional, academic urologists are proportionally overrepresented among those receiving large industry payments.⁹ While this may not be surprising considering the academic roles of urologists practicing in university settings, it is important given the influential role these physicians have on the training of resident physicians, the published literature, and guidelines. Differences in distribution between AUA membership and urologists included in OPP data can help uncover additional patterns and inform future work in mitigating the potential negative outcomes of industry payments while maximizing the benefits.

Transparency

Ultimately, the intended purpose of OPP is to enhance transparency of industry payments to providers. Research using OPP should strive to achieve this by providing informative and actionable analyses of the data. For example, OPP research can inform greater regulation of industry payments to urologists in positions of academic or clinical leadership. Many countries and professional organizations have implemented regulations and guidelines that require the disclosure of financial relationships between health care professionals and industry stakeholders. Transparent reporting allows patients, researchers, and regulatory bodies to assess potential conflicts of interest and make informed decisions based on complete information. The National Comprehensive Cancer Network has set forth disclosure policies to protect the integrity of guideline development. Such examples of

“By striking a balance between collaboration and transparency, urologists can uphold the highest ethical standards while driving advancements in urological care for the benefit of patients worldwide.”

policies include deeming those who receive more than \$20,000 annually from a single external entity or \$50,000 annually from all entities ineligible for service or appointment for involvement within guideline working groups.¹⁰

Professional organizations play a vital role in ensuring transparency and ethical conduct. They can provide guidelines for interactions with industry, offer educational programs on conflicts of interest, and facilitate disclosure processes. Additionally, fostering a culture of disclosure and promoting the reporting of financial relationships can help reduce the stigma associated with such collaborations. OPP research can provide evidence and targets for these organizations.

Conclusion

Collaboration between urologists and industry stakeholders is crucial for advancing medical knowledge, improving patient care, and promoting innovation. However, it is equally important to address the ethical concerns and potential conflicts of interest that may arise from these relationships. Transparency and disclosure play a pivotal role in maintaining the trust of patients and the wider health care community. By striking a balance between collaboration and transparency, urologists can uphold the highest ethical stan-

dards while driving advancements in urological care for the benefit of patients worldwide.

Initiatives such as the OPP database have significantly enhanced our ability to study potential financial conflicts of interest. While it has illuminated numerous aspects of conflict of interest in medicine, it should be viewed as a resource to inform bolder and more effective action to tackle industry-related conflicts of interest while maximizing the benefits of industry and urology partnerships. ■

Conflict of Interest Disclosures: Christopher J. D. Wallis: Consulting Fees: Janssen Oncology, Nanostics Inc, SES-EN Bio, Precision Point Specialty LLC; Honoraria/Travel: AbbVie, Astra Zeneca, Bayer, EMD Serono, Haymarket Media, Healing and Cancer Foundation, Knight Therapeutics, Science & Medicine Canada, TerSera Canada, Tolmar Pharmaceuticals Canada; Research Funding: Knight Therapeutics, Tolmar Pharmaceuticals, Bayer. All other Authors report no conflicts of interest.

Funding Source: No funding.

1. Singh A, Faris S, Agarwal P, et al. Association between industry payments and published position on use of devices for the treatment of lower urinary tract symptoms. *Urology*. 2022;159:87-92.
2. Centers for Medicare and Medicaid Services. *Open Payments Data Overview*. 2023. Accessed June 28, 2023. <https://www.cms.gov/openpayments/data>
3. Modi PK, Farber NJ, Zavaski ME, et al. Industry payments to urologists in 2014: an analysis of the open payments program. *Urol Pract*. 2017;4(4):342-348.
4. Clennon EK, Lam M, Manley A, et al. Patterns of industry payments to urologists from 2014-2018. *Urology*. 2020;140:44-50.
5. Nguyen D-D, Nguyen A-LV, Khondker A, et al. PD32-06 Industry relationships with urologists: characterizing the high-payment urologists. *J Urol*. 2023;209(Suppl 4):e909.
6. Carlisle A, Bowers A, Wayant C, et al. Financial conflicts of interest among authors of urology clinical practice guidelines. *Eur Urol*. 2018;74(3):348-354.
7. Perez TY, Chen MC, Chung PH, et al. Leaders in urologic education and their relationship to industry: an analysis of sunshine act open payments from 2014-2016. *Urology*. 2019;123:53-58.
8. Nguyen D-D, Murad L, Nguyen AX-L, et al. Industry payments to American editorial board members for major urology journals. *Eur Urol*. 2023;10.1016/j.eururo.2023.04.017
9. American Urological Association. *Census Results*. 2023. Accessed June 28, 2023. <https://www.auanet.org/research-and-data/aua-census/census-results>
10. National Comprehensive Cancer Network. *Disclosure Policies and Potential Conflicts of Interest*. 2023. Accessed June 27, 2023. <https://www.nccn.org/guidelines/guidelines-panels-and-disclosure/disclosure-policies-and-potential-conflicts-of-interest>

PROSTATE CANCER

Enzalutamide in Earlier Stages of Prostate Cancer Treatment

Lauren Folgosa Cooley, MD, PhD

Atlantic Urology Clinics, Myrtle Beach, South Carolina
Carolina Urologic Research Center, Myrtle Beach, South Carolina

Abhishek Srivastava, MD

Atlantic Urology Clinics, Myrtle Beach, South Carolina
Carolina Urologic Research Center, Myrtle Beach, South Carolina

Neal D. Shore, MD

Atlantic Urology Clinics, Myrtle Beach, South Carolina
Carolina Urologic Research Center, Myrtle Beach, South Carolina

Enzalutamide is an orally administered potent androgen-receptor signaling inhibitor that targets multiple steps in the androgen signaling pathway including ligand-receptor binding, nuclear translocation, DNA binding, and coactivator recruitment.¹ Enzalutamide was initially approved in 2012 for the treatment of castrate-resistant prostate cancer (CRPC) in patients who previously received docetaxel based on the AFFIRM trial, which demonstrated both a statistically significant radiographic progression-free survival and overall survival for patients receiving enzalutamide.¹ Its therapeutic approvals have subsequently migrated earlier in the treatment paradigm for patients with prostate cancer including metastatic CRPC without prior docetaxel (TERRAIN, PREVAIL), nonmetastat-

ic CRPC (STRIVE, PROSPER), and metastatic hormone-sensitive prostate cancer (ARCHES, ENZAMET).²⁻⁷ These successful trial results are reflected in our current guidelines for advanced prostate cancer treatment, which includes enzalutamide in combination with androgen deprivation therapy (ADT) as a standard of care for these men (see Figure).⁸

Recent trials are now investigating the current standards of care for men with earlier stage disease including patients with high-risk localized prostate cancer, on active surveillance (AS), or those with biochemical recurrence (BCR; see Figure). First, while AS delays the side effects and morbidity of local treatment, about 40% of men will discontinue AS within 5 years of diagnosis.⁹ There may be an opportunity for earlier introduction of systemic therapy in men diagnosed with localized prostate cancer who desire to prolong time on AS and delay prostate cancer progression. The phase 2 ENACT trial compared men on AS alone (113 men) to 1 year of enzalutamide monotherapy plus AS (114 men) with up to 2 years of follow-up.¹⁰ Importantly, enzalutamide reduced the risk of prostate cancer histopathological progression by 46% compared to AS alone (HR 0.54, 95% CI 0.33-0.89, $P = .02$). Secondary end points included time to PSA progression, odds of negative biopsy at 1 and 2 years, and volume of disease (cancer positive cores) at 1 and 2 years. Enzalutamide was well tolerated with most common adverse events being fatigue (62 [55.4%]) and gynecostasia (41 [36.6%]).¹⁰ While there are limitations to the ENACT trial such as PSA rebound after enzalutamide cessation, side effects, and cost associated with treatment, it is hypothesis generating as we try to elucidate ways to delay prostate cancer progression in men with earlier stage, low-grade disease and encourage greater adoption of AS protocols.

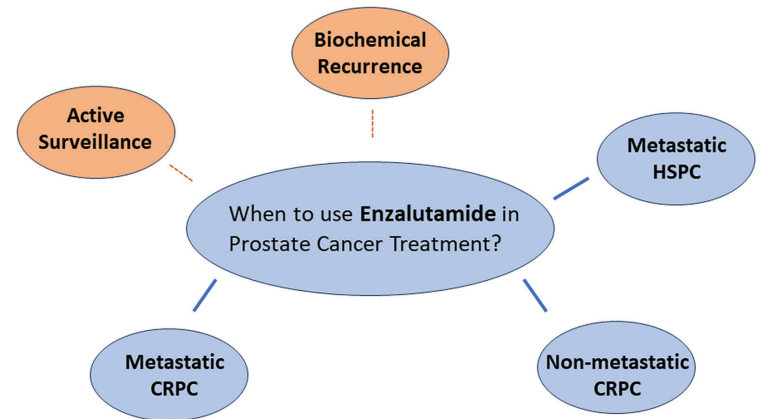


Figure. Utilization of enzalutamide in prostate cancer treatment. Blue shading indicates guidelines-approved areas for use of enzalutamide. Orange shading indicates trials evidence to suggest potential future utilization of enzalutamide in this space. CRPC indicates castrate-resistant prostate cancer; HSPC, hormone-sensitive prostate cancer.

Following definitive primary therapy (eg, surgery or radiotherapy) and prior to the development of detectable metastatic disease on conventional imaging, nearly one-third of men with prostate cancer will experience a PSA-only rise, termed BCR. Patients with BCR at highest risk for progression are those with PSA doubling time ≤ 9 -12 months, PSA ≥ 1 ng/mL following radical prostatectomy, PSA ≥ 2 ng/mL above nadir post-radiotherapy, Gleason 8 or more, adverse pathological features at time of radical prostatectomy, and/or shorter interval to biochemical failure. While their current options include observation, intermittent ADT, or salvage radiation, the soon-to-be published EMBARK trial, which was recently presented at AUA2023, explores enzalutamide as a novel option for men with BCR. Conducted over an 8-year period, EMBARK is a phase 3 global, multicenter study of 1,068 high-risk men with BCR who were randomized 1:1:1 to enzalutamide+ADT, placebo+ADT, or enzalutamide monotherapy. Compared to ADT+placebo, enzalutamide monotherapy and enzalutamide+ADT significantly reduced risk of metastasis and death by 36.9% (HR 0.63, 95% CI 0.46-0.87, $P = .005$) and 57.6% (HR

“While enzalutamide is currently 1 standard of care option for advanced prostate cancer treatment, the recent ENACT and EMBARK trials offer compelling data for understanding the role of enzalutamide earlier within the prostate cancer treatment paradigm.”

0.42, 95% CI 0.31-0.61, $P < .001$), respectively. This clinically meaningful treatment effect was consistent across their prespecified subgroups and remained significant regardless of prior hormonal therapy, prior prostatectomy, baseline PSA, PSA doubling time, and

“With regard to secondary end points, (1) time to first new neoplastic agent and (2) time to PSA progression, enzalutamide+ADT combination was superior in efficacy compared to ADT alone.”

ENZALUTAMIDE IN EARLIER STAGES OF PROSTATE CANCER TREATMENT

→ Continued from page 6

age. With regard to secondary end points, (1) time to first new neoplastic agent and (2) time to PSA progression, enzalutamide+ADT combination was superior in efficacy compared to ADT alone (new neoplastic agent: HR 0.36, 95% CI 0.26-0.49, $P < .001$; PSA progression: HR 0.07, 95% CI 0.03-0.14, $P < .001$). The side-effect profile of combination enzalutamide+ADT was consistent with the established safety profile for enzalutamide in other prostate cancer treatment settings.

While enzalutamide is currently 1 standard of care option for advanced prostate cancer treatment, the recent ENACT and EMBARK trials offer compelling data for understanding the role of enzalutamide earlier within the prostate cancer treatment paradigm. Additional questions remain to better understand which prostate cancer patients can optimally benefit from earlier utilization of enzalutamide. ■

1. Scher HI, Fizazi K, Saad F, et al. Increased survival with enzalutamide in prostate cancer after chemotherapy. *N Engl J Med*. 2012;367(13):1187-1197.

2. Shore ND, Chowdhury S, Villers A, et al. Efficacy and safety of enzalutamide versus bicalutamide for patients with metastatic prostate cancer (TERRAIN): a randomised, double-blind, phase 2 study. *Lancet Oncol*. 2016;17(2):153-163.
3. Beer TM, Armstrong AJ, Rathkopf DE, et al. Enzalutamide in metastatic prostate cancer before chemotherapy. *N Engl J Med*. 2014;371(5):424-433.
4. Penson DF, Armstrong AJ, Concepcion R, et al. Enzalutamide versus bicalutamide in castration-resistant prostate cancer: the STRIVE trial. *J Clin Oncol*. 2016;34(18):2098-2106.
5. Hussain M, Fizazi K, Saad F, et al. Enzalutamide in men with nonmetastatic, castration-resistant prostate cancer. *N Engl J Med*. 2018;378(26):2465-2474.
6. Armstrong AJ, Szmulewitz RZ, Petrylak DP, et al. ARCHES: a randomized, phase III study of androgen deprivation therapy with enzalutamide or placebo in men with metastatic hormone-

sensitive prostate cancer. *J Clin Oncol*. 2019;37(32):2974-2986.

7. Davis ID, Martin AJ, Stockler MR, et al. Enzalutamide with standard First-Line therapy in metastatic prostate cancer. *N Engl J Med*. 2019;381(2):121-131.
8. Lowrance W, Dreicer R, Jarrard DF, et al. Updates to advanced prostate cancer: AUA/SUO guideline (2023). *J Urol*. 2023;209(6):1082-1090.
9. Cooley LF, Emeka AA, Meyers TJ, et al. Factors associated with time to conversion from active surveillance to treatment for prostate cancer in a multi-institutional cohort. *J Urol*. 2021;206(5):1147-1156.
10. Shore ND, Renzulli J, Fleshner NE, et al. Enzalutamide monotherapy vs active surveillance in patients with low-risk or intermediate-risk localized prostate cancer: the ENACT randomized clinical trial. *JAMA Oncol*. 2022;8(8):1128-1136.

PROSTATE CANCER

Racial Health Disparities in Prostate Cancer Care

Ernest A. Morton, MD, MBA, MS

Emory University School of Medicine, Atlanta, Georgia

Nicholas W. Eyrich, MD, MS

Emory University School of Medicine, Atlanta, Georgia

Randy A. Vince Jr, MD, MS

University Hospitals Seidman Cancer Center, Case Western Reserve University, Cleveland, Ohio

Ashanda R. Esdaille, MD

Emory University School of Medicine, Atlanta, Georgia
Atlanta Veterans' Affairs Medical Center, Georgia

Introduction and Barriers to Equity

In the United States, on average, Black men with prostate cancer (PCa) have an earlier onset of disease, present with more advanced stages, and have worse cancer-specific survival than their White counterparts.¹ Understanding the causes of these disparities is the first step toward ameliorating them. However, these disparities are multifactorial: a combination of inadequate access to care, modifiable environmental risk factors and exposures, and acquired epigenetic alterations. Besides patient-level factors, systems issues such as inadequate recruitment of underrepresented minorities in clinical trials, dissimilar screening, staging, and management patterns continue to widen the gap between patients

and equitable health care.² The path toward equity is also hindered by mistrust in the medical system, lower rates of health literacy, social/cultural stigmas surrounding PCa, and a dearth of Black health care providers.³⁻⁵ While advancements have been made in studying inequities in PCa care, significant barriers remain, particularly pertaining to social determinants of health (SDOH). Herein, we comment on the association of SDOH in PCa patients and propose strategies to help counteract disparities in both clinical scenarios and biomedical study design.

SDOH

Discussing health care disparities without acknowledging race as a social construct and the impact of structural racism would be irresponsible.^{3,6} Because of racist policies, Black individuals have been subject to adverse social determinants which are directly correlated with health risks and outcomes. For example, redlining, a discriminatory federal policy, has led to higher exposure of air pollution and neighborhood deprivation in Black individuals—the demographic which leads the nation in rates of poor oncologic outcomes.⁷ With this frame of reference, socioeconomic factors

and tumor biology have previously been considered separate factors contributing to gaps in PCa care. However, what is least understood is the complex interaction between either factor. Our understanding of this interplay between SDOH and biology continues to burgeon—overall, carcinogenesis and, ultimately, aggressive disease can result from epigenetic alterations resulting from structural inequities. However, the incorporation of SDOH into the study of PCa disparities is limited.

A recent meta-analysis evaluating the association of SDOH with PCa-specific mortality (PCSM) and overall survival (OS) among Black and White PCa patients demonstrated a significant race-SDOH interaction for both PCSM ($P < .001$) and OS ($P = .03$). Notably, in studies with minimal accounting for SDOH variables, Black patients had significantly higher PCSM compared to their White counterparts ($P < .001$). Meanwhile, for those with greater accounting for SDOH, PCSM was significantly lower among Black patients compared with White patients ($P = .02$).⁸ Taken together, these findings support a significant interaction between race and SDOH with respect to PCSM and OS among PCa patients, thus highlighting the importance of incorporating SDOH.

Potential Strategies

Clinical approach

An essential goal of health care delivery should be to build a therapeutic alliance between the patient and provider. However, this goal will remain lofty and likely unachievable without recognition and acknowledgment of the historical and contemporary acts that build mistrust in the institution of medicine. Historically, Black patients have been victims of medical experimentation. Additionally, when examining contemporary factors, Black men are less likely to be offered or enrolled in clinical trials. When enrolled in clinical trials, data suggest they are less likely to receive the study drug, as seen in the retrospective review of several castrate-resistant PCa phase 3 trials.⁹

Thus, to build this therapeutic alliance, providers must recognize the track record that has led us to this point and take steps to address this problem. The major step to addressing this issue is a true shared decision-making process, which seems straightforward. However, the Agency for Healthcare Research and Quality suggests using

→ Continued on page 8

RACIAL HEALTH DISPARITIES IN PROSTATE CANCER CARE

→ Continued from page 7

the SHARE approach in shared decision-making. This approach includes: Seeking patient participation, Helping the patient explore and compare treatment options, Assessing the patient's values, Reaching a decision, and Evaluating that decision. To participate in a shared decision-making process, providers must have cultural competency, as patients' values may vary across cultures, and recognize and discuss barriers that include SDOH, both of which benefit our patients.^{10,11}

By revising the approach to patient interactions, providers can make substantial strides in addressing feelings of being unheard and medical mistrust. Adjusting our strategy and taking the time to understand patient hesitancy, providers will have an opportunity to discuss the dearth of representation in clinical trials, acknowledge historical acts, and ultimately emphasize the importance of representation in clinical trials, as these trials are the basis for developing treatment guidelines. Lastly, data suggest that communication, perceptions of care, and health outcomes are improved in race-concordant patient-provider relationships,^{12,13} further highlighting the importance

of diversification of the urological physician workforce.

Biomedical research and clinical trials

The underrepresentation of Black men in PCa clinical trials is well documented, resulting in limited generalizability.^{2,5} To improve generalizability and address inequities, the medical field must make concerted efforts to recruit and enroll these patients through allocating funds, diversification of researchers and coordinators, community partnerships, increasing health literacy, and addressing medical mistrust. Designating resources, specifically toward minority-serving institutions, and providing adequate funds to develop and maintain the necessary research infrastructure are essential.¹⁴

Medical mistrust has contributed to poorer health literacy and sub-optimal representation in research studies. This further hinders recruitment efforts, which are already ineffective at reaching minority patients. Building de novo trust from an academic center is challenging; therefore, patient outreach utilizing established, communal avenues can play a major role. Places of worship and religious leaders often signifi-

cantly influence the Black community and serve as a gathering place for numerous community events. Proposed interventions suggest collaboration with trusted community organizations and leaders to recruit and educate patients on clinical trials and the importance of research involvement.¹⁵ Trials focused on recruiting Black patients would benefit from having a minority-specific recruitment plan and working to establish communication channels with trusted, integrated organizations within the community.¹⁶

Race and SDOH are closely intertwined; this association should not be avoided in scientific design, reporting, or clinical practices, but rather be the lens through which we work to improve the standard of care, equity, and, ultimately, outcomes for our patients. ■

1. Siegel RL, Miller KD, Wagle NS, et al. Cancer statistics, 2023. *CA Cancer J Clin.* 2023;73(1):17-48.
2. Esdaille AR, Ibilibor C, Holmes A II, et al. Access and representation: a narrative review of the disparities in access to clinical trials and precision oncology in black men with prostate cancer. *Urology.* 2022;163:90-98.
3. Vince RAJ, Jamieson S, Mahal B, et al. Examining the racial disparities in prostate cancer. *Urology.* 2022;163:107-111.
4. Burnett AL, Nyame YA, Mitchell E. Disparities in prostate cancer. *J Natl Med Assoc.* 2023;115(2):S38-S45.
5. Lillard JWJ, Moses KA, Mahal BA, et al. Racial disparities in Black men with prostate cancer: a literature review. *Cancer.* 2022;128(21):3787-3795.

6. Vince RAJ, Eyrich NW, Mahal BA, et al. Reporting of racial health disparities research: are we making progress?. *J Clin Oncol.* 2022;40(1):8-11.
7. Ashing KT, Jones V, Bedell F, Phillips T, Erhunmwunsee L. Calling attention to the role of race-driven societal determinants of health on aggressive tumor biology: a focus on Black Americans. *JCO Oncol Pract.* 2022;18(1):15-22.
8. Vince RAJ, Jiang R, Bank M, et al. Evaluation of social determinants of health and prostate cancer outcomes among black and white patients: a systematic review and meta-analysis. *JAMA Netw Open.* 2023;6(1):e2250416.
9. Spratt DE, Osborne JR. Disparities in castration-resistant prostate cancer trials. *J Clin Oncol.* 2015;33(10):1101-1103.
10. Horvat L, Horey D, Romios P, et al. Cultural competence education for health professionals. *Cochrane Database Syst Rev.* 2014;(5):CD009405.
11. Yelton B, Rumthao JR, Sakhua M, et al. Assessment and documentation of social determinants of health among health care providers: qualitative study. *JMIR Form Res.* 2023;7:e47461.
12. Moore C, Coates E, Watson A, de Heer R, McLeod A, Prudhomme A. It's important to work with people that look like me": Black patients' preferences for patient-provider race concordance. *J Racial Ethn Health Disparities.* 2022;10.1007/s40615-022-01435-y.
13. Jetty A, Jabbarpour Y, Pollack J, Huerto R, Woo S, Petterson S. Patient-physician racial concordance associated with improved healthcare use and lower healthcare expenditures in minority populations. *J Racial and Ethnic Health Disparities.* 2022;9(1):68-81.
14. Ledesma Vicioso N, Lin D, Gomez DR, et al. Implementation strategies to increase clinical trial enrollment in a community-academic partnership and impact on Hispanic representation: an interrupted time series analysis. *JCO Oncol Pract.* 2022;18(5):e780-e785.
15. Kuri L, Setru S, Liu G, et al. Data-driven strategies for increasing patient diversity in Bristol Myers Squibb-sponsored US oncology clinical trials. *Clin Trials.* 2023;17407745231180506.
16. Penman-Aguilar A, Talih M, Huang D, et al. Measurement of health disparities, health inequities, and social determinants of health to support the advancement of health equity. *J Public Health Manag Pract.* 2016;22(Suppl 1):S33-S42.

PROSTATE CANCER

Improving Equity in Prostate Cancer Outcomes Through Patient-reported Outcome Measures

Mara Koelker, MD

Brigham and Women's Hospital, Harvard Medical School, Boston, Massachusetts
University Medical Center Hamburg-Eppendorf, Hamburg, Germany

Jonathan Makanjuola, MD

King Edward VII Memorial Hospital, Bermuda Hospitals Board, Bermuda

Racism and inequity are problems in the health system of the United States. With prostate cancer being a common disease affecting millions of men, physicians should engage in the current efforts to

improve equity across prostate cancer care. Disparities in prostate cancer outcomes persist, particularly among marginalized and underserved populations.¹ They can arise due to differences in access to health care, cultural background and health beliefs, socioeconomic factors, as well as systemic racism.^{2,3} This includes cultural, linguistic, or financial challenges that impact their prostate cancer experience.^{4,5} Additionally, demographic factors such as race and ethnicity, socio-

economic status, and the patient's geographical location play an important role in the existing inequity in prostate cancer care.⁶ Furthermore, as shown in prior studies, racial disparities potentially lead to delayed cancer diagnosis, treatment, and supportive care after, for example, surgery or radiation.⁷ As discussed by Cole et al recently, strategies to address these disparities should include patient-reported outcome measures (PROMs) to capture patients' experiences and

preferences in order to improve prostate cancer outcomes for all men.⁸ PROMs offer an inexpensive tool in enhancing patient-centered care and promoting equity. They capture patients' perceptions of their burden, functional status, symptoms, and overall quality of life.

In order to promote equity, PROM use should be considered in different settings. PROMs provide

→ Continued on page 9

IMPROVING EQUITY IN PROSTATE CANCER OUTCOMES THROUGH PATIENT-REPORTED OUTCOME MEASURES

→ Continued from page 8

valuable information about patients' impairment prior to treatment, quality of life, and possibly treatment preferences. When considering these outcomes, health care providers can individualize treatment plans and use PROMs as decision aids.⁹ Through this patient-centered approach disparities could be reduced in an early treatment stage. Additionally, PROMs allow for real-time identification of side effects and, in the next step, management of treatment-related symptoms and toxicities. In our own institutional analysis at Brigham and Women's Hospital in Boston presented at AUA2023, we showed that non-Hispanic Black men had significantly lower quality-of-life scores at 3 and 6 months after their radical prostatectomy ($P < .01$) compared to their White counterparts.¹⁰ This difference was mostly driven by sexual and urinary function, even though surgery was performed by the same high-volume surgeons. In the long-term results, 12 and 24 months postsurgery, these differences were mitigated. Therefore, timely identification of side effects is especially important in populations that may face

additional barriers to health care access. Additionally, PROMs could lead to a shared decision-making process between patients and their physicians, which is essential for equitable care. Collaborative approaches strengthen patient empowerment and reduce disparities in treatment decision-making.

Nevertheless, achieving equity in prostate cancer outcomes requires a multilevel approach that addresses the underlying disparities and ensures patient-centered care. To maximize the impact of PROMs, health care systems need to expand their utilization. Efforts should be made to ensure equitable access to patient-reported outcome (PRO) assessments for all patients, including those from marginalized communities. Further, physicians and researchers need to be trained in cultural sensitivity to interpret the results.

Large-scale analysis of PRO data can help identify patterns and trends in prostate cancer outcomes among different populations, shedding light on potential disparities. This knowledge can lead to targeted and individualized interventions and policy changes aimed

at reducing inequities and improving overall prostate cancer care. This includes considering patient perspectives in clinical trials and decision-making processes. By incorporating these approaches, the development of new treatments and interventions can better align with their needs, preferences, and priorities.

Integrating PROMs into clinical practice allows health care providers to individualize treatments, assess side effects, and engage in a shared decision-making approach, all of which contribute to more patient-centered care. However, to fully leverage the benefits of PROs, there is a need for standardized assessment tools, analysis, and most importantly equitable access to patient-reported assessments. Collaborative efforts are essential in implementing these programs and addressing disparities in prostate cancer outcomes. By embracing PROMs in the existing structures, health care systems can make significant steps toward achieving equity in prostate cancer care and outcomes, ultimately improving the lives of men affected by prostate cancer. ■

1. Cole AP, Herzog P, Iyer HS, et al. Racial differences in the treatment and outcomes for prostate cancer in Massachusetts. *Cancer*. 2021;127(15):2714-2723.
2. Riviere P, Luterstein E, Kumar A, et al. Survival of African American and non-Hispanic White men with prostate cancer in an equal-access health care system. *Cancer*. 2020;126(8):1683-1690.
3. DeWitt-Foy ME, Gam K, Modlin C, et al. Race, decisional regret and prostate cancer beliefs: identifying targets to reduce racial disparities in prostate cancer. *J Urol*. 2021;205(2):426-433.
4. Kilbridge KL, Fraser G, Krahn M, et al. Lack of comprehension of common prostate cancer terms in an underserved population. *J Clin Oncol*. 2009;27(12):2015-2021.
5. Imber BS, Varghese M, Ehdaie B, et al. Financial toxicity associated with treatment of localized prostate cancer. *Nat Rev Urol*. 2020;17(1):28-40.
6. Fletcher SA, Marchese M, Cole AP, et al. Geographic distribution of racial differences in prostate cancer mortality. *JAMA Netw Open*. 2020;3(3):e201839.
7. Krimphove MJ, Cole AP, Fletcher SA, et al. Evaluation of the contribution of demographics, access to health care, treatment, and tumor characteristics to racial differences in survival of advanced prostate cancer. *Prostate Cancer Prostatic Dis*. 2019;22(1):125-136.
8. Cole AP, Koelker M, Makanjuola J, et al. Can PROMs improve racial equity in outcomes after prostatectomy?. *Nat Rev Urol*. 2023;20(3):125-126.
9. Adsul P, Wray R, Spradling K, et al. Systematic review of decision aids for newly diagnosed patients with prostate cancer making treatment decisions. *J Urol*. 2015;194(5):1247-1252.
10. Koelker M, Labban M, Frego N, et al. MP80-17 Racial differences in patient-reported outcomes among men treated with radical prostatectomy for prostate cancer. *J Urol*. 2023;209(Suppl 4):e1159.

PROSTATE CANCER

Artificial Intelligence in Radical Prostatectomy

Ranveer Vasdev, MD
Mayo Clinic, Rochester, Minnesota

Abhinav Khanna, MD
Mayo Clinic, Rochester, Minnesota

Machine learning has gained significant popularity in recent years, but this technology is not new to urology. In 1997, Kattan and colleagues explored the use of artificial neural networks for prostate cancer survival prediction.¹ Since then, disruptive technologies and advancements in computational processing power have enabled the expansion of machine learning techniques into previously unat-

tainable realms. Contemporary applications of artificial intelligence (AI) tools are widespread and include prostate cancer imaging, pathology interpretation, and even robotic surgery.

Among the ripest targets for the use of AI in prostate cancer is to aid in prostate cancer diagnosis on MRI. Prostate anatomy is often segmented as part of radiologists' routine clinical workflow to enable MR-fusion prostate biopsy. This practice has facilitated the rapid development of large and high-quality data sets with minimal manual data labelling, which can often be

“Among the ripest targets for the use of AI in prostate cancer is to aid in prostate cancer diagnosis on MRI.”

labor intensive and in some cases prohibitive. Further, correlative pathologic data are often available from both prostate biopsy as well as subsequent prostatectomy, providing AI models with a clear and ro-

bust “ground truth” upon which to train. Several groups have explored the use of AI to interpret prostate MRI imaging with quite promising results.² Similarly, AI has shown promise in interpretation of prostate biopsy histopathology. Paige Prostate, a commercial AI software for automated interpretation of prostate biopsy pathology, was the first AI-powered pathology interpretation algorithm to receive Food and Drug Administration approval.³

In recent years, applications of AI in prostate cancer have moved

→ Continued on page 10

ARTIFICIAL INTELLIGENCE IN RADICAL PROSTATECTOMY

→ Continued from page 9

beyond imaging and pathology, and into surgical interventions including robotic-assisted radical prostatectomy (RARP). In their 2018 study, Hung and colleagues demonstrated that automated technical performance metrics of surgeons were correlated to hospital length of stay following RARP.⁴ This landmark study provided proof-of-concept that intraoperative events were empirically evaluable and meaningfully associated with patient outcomes. Hung et al subsequently demonstrated a correlation between surgical performance metrics with surgeon skill level (see Figure),⁵ recovery of urinary continence,⁶ and erectile function⁷ following RARP. Similarly, Schuler and colleagues demonstrated that a series of performance metrics including surgical gestures, robotic instrument kinematics, and tissue force were predictive of individual surgeon expertise in RARP.⁸

AI also has promising applications in robotic surgery beyond surgical skills assessment. Our group recently developed a novel AI-powered computer vision platform for fully automated detection of key surgical steps in RARP.⁹

This AI tool is capable of accurately identifying sequential steps of RARP, such as space of Retzius dissection, anterior and posterior bladder neck dissection, seminal vesicle/posterior dissection, vesicourethral anastomosis, etc. This work is distinct from prior efforts to apply AI to robotic surgery in 2 key areas: (1) AI step detection is based purely on video footage alone without inputs from the surgical platform or instruments, and (2) our AI model moves beyond microgestures and instead assesses entire phases and steps of surgery, taking global anatomic and temporospatial relationships into consideration to provide meaningful predictions of surgical phase.

The potential applications of a robust AI step detection tool for RARP are myriad. Not only does comprehensive step detection lay the foundation for future efforts to continue correlating intraoperative events with postoperative outcomes, but step detection also serves as the engine to drive innovative AI applications in surgical training and education, quality and safety benchmarking, medical documentation, and operating room logistics. As a proof-of-concept

“Building upon the numerous exciting advancements in AI for prostate cancer over the last several years, the future holds tremendous potential for transformative innovations in robotic surgery.”

using our RARP step detection algorithm, we recently developed a novel AI-based tool for generating operative reports for RARP based purely on full-length surgical video footage alone.¹⁰ Notably, AI-generated operative reports in RARP achieved similar accuracy to actual operative reports written by surgeons, thus demonstrating the feasibility of AI-driven technology in robotic surgery to potentially improve surgical workflows, reduce documentation burden, and enhance report accuracy.

Building upon the numerous exciting advancements in AI for prostate cancer over the last several years, the future holds tremendous potential for transformative innovations in robotic surgery. This includes real-time surgeon feedback and intraoperative decision support, which have the potential to revolutionize the experience of robotic surgery for surgeons and drive improvements in outcomes for patients. However, as with all new technologies, AI in prostate cancer care must be developed and implemented with poise and balance. Specific challenges that our field must address include bias inherent within training data sets, explainability of “black-box” AI models, external validity to diverse practice settings, and always maintaining a “human in-the-loop” to prevent erosion of the surgeon-patient relationship that is fundamental to the practice of medicine. ■

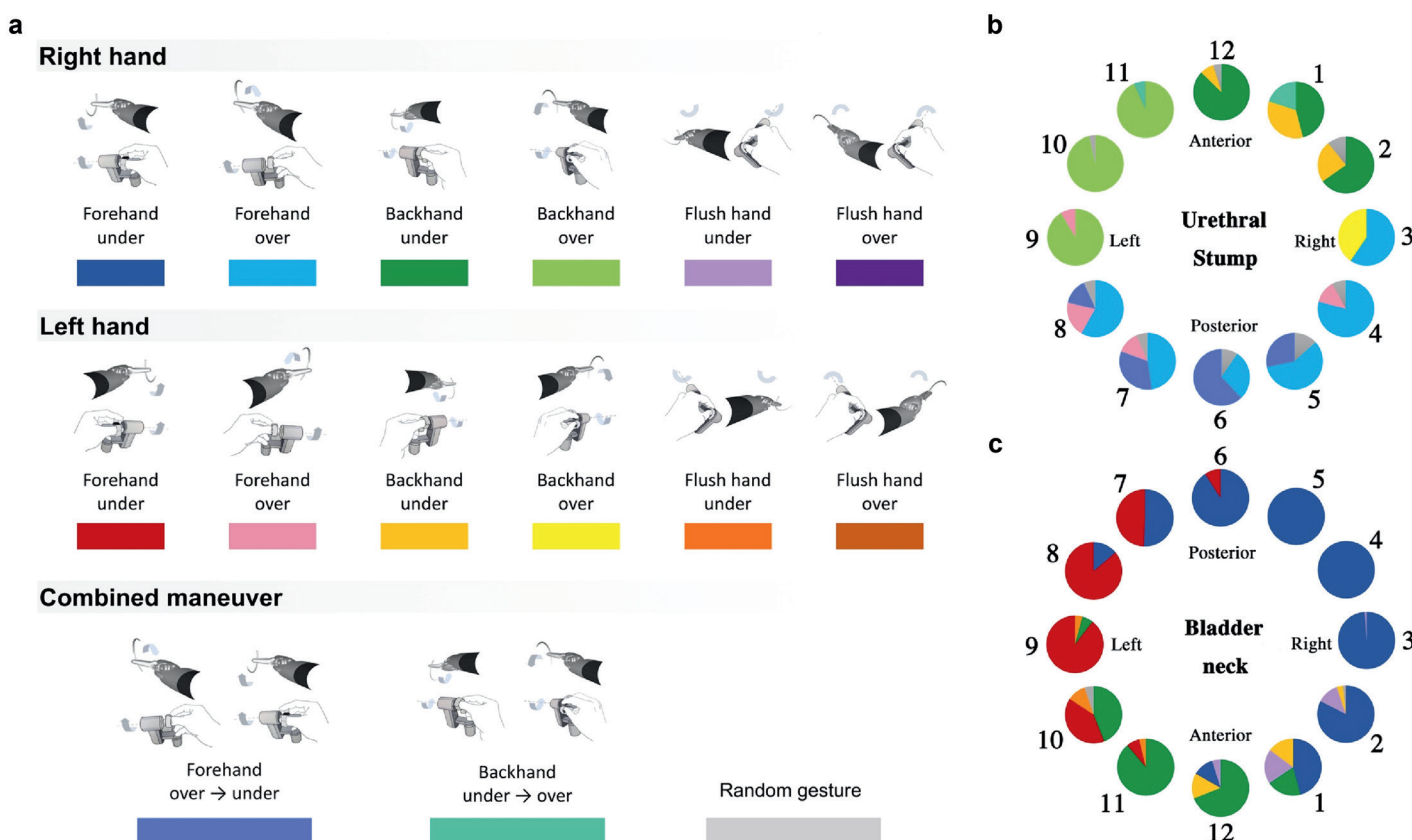


Figure. Summary of surgical gestures during performance of vesicourethral anastomosis in robotic-assisted radical prostatectomy; gestures differentiate novice from expert surgeons and are associated with greater suturing efficiency and lower tissue trauma. Reprinted with permission from Chen et al, *J Urol.* 2018;200(4):895-902.⁵

- Kattan MW, Ishida H, Scardino PT, et al. Applying a neural network to prostate cancer survival data. In: Lavrač N, Keravnou ET, Zupan B, eds. *Intelligent Data Analysis in Medicine and Pharmacology.* Springer, 1997;295-306.
- Turkbey B, Haider MA. Artificial intelligence for automated cancer detection on prostate MRI: opportunities and ongoing challenges, from the AJR special series on AI applications. *AJR Am J Roentgenol.* 2022;219(2):188-194.
- Food and Drug Administration. *FDA Authorizes Software That Can Help Identify Prostate Cancer.* 2021. Accessed June 1, 2023. <https://www.fda.gov/news-events/press-announcements/fda-authorizes-software-can-help-identify-prostate-cancer>
- Hung AJ, Chen J, Che Z, et al. Utilizing machine learning and automated performance metrics to evaluate robot-assisted radical prostatectomy performance and predict outcomes. *J Endourol.* 2018;32(5):438-444.
- Chen J, Oh PJ, Cheng N, et al. Use of automated performance metrics to measure surgeon performance during robotic vesicourethral anastomosis and methodical development of a training tutorial. *J Urol.* 2018;200(4):895-902.
- Trinh L, Mingo S, Vanstrum EB, et al. Survival analysis using surgeon skill metrics and patient factors to predict urinary continence recovery after robot-assisted radical prostatectomy. *Eur Urol Focus.* 2022;8(2):623-630.
- Ma R, Ramaswamy A, Xu J, et al. Surgical gestures as a method to quantify surgical performance and predict patient outcomes. *NPJ Digit Med.* 2022;5(1):187.
- Schuler N, Shepard L, Saxton A, et al. Predicting surgical experience after robotic nerve-sparing radical prostatectomy simulation using a machine learning-based multimodal analysis of objective performance metrics. *Urol Pract.* 2023;10(5):447-455.
- Khanna A, Antolin A, Zohar M, et al. MP26-07 Artificial intelligence-enabled automated identification of key steps in robotic-assisted radical prostatectomy. *J Urol.* 2023;209(Suppl 4):e354.
- Khanna A, Antolin A, Zohar M, et al. PD27-07 Automated operative reports for robotic radical prostatectomy using an artificial intelligence platform. *J Urol.* 2023;209(Suppl 4):e744.

PROSTATE CANCER

Breaking Boundaries in Robotic Surgery: Unveiling the Medtronic Hugo Robotic-assisted Surgery System

Gabriele Sorce, MD

Onze-Lieve-Vrouwziekenhuis, Aalst, Belgium
ORSI Academy, Ghent, Belgium
IRCCS San Raffaele Scientific Institute, Milan, Italy

Alexandre Mottrie, MD

Onze-Lieve-Vrouwziekenhuis, Aalst, Belgium
ORSI Academy, Ghent, Belgium

Technology is evolving rapidly, and its impact on robotic surgery, particularly in the field of urology, cannot be ignored. Intuitive Surgical's da Vinci system deserves recognition for dominating the market and providing a reliable robotic platform over the past 2 decades. However, the expiration of key patents in 2019 marked the beginning of a new era for robotic master-slave systems. This highly competitive market has witnessed the emergence of multiple robotic platforms in recent years, which hold the potential to drive faster innovation, develop high-quality products, reduce costs, and ultimately increase the availability of robotic systems worldwide, benefiting a larger number of patients. One of these breakthroughs is the Medtronic Hugo RAS (Robotic-assisted Surgery) System, which obtained CE mark approval for urology and gynecology in Europe in late 2021.

The Hugo RAS System offers key distinctive features when compared to conventional da Vinci consoles. It employs pistol-type controls to maneuver the surgical robotic instruments, which are independently located in 4 separate carts. The trocars have diameters of 11 mm and 8 mm for the endoscope and instruments, respectively. The system's open console design incorporates 3D high-definition vision, requiring dedicated goggles but offering several advantages. The direct contact between the surgeon and the operating room team allows for real-time and easier communication, enhancing teamwork during procedures. Moreover, the Hugo RAS System facilitates teaching and training, providing an unobstructed view of the surgical field that allows trainers and trainees to observe and learn surgical techniques effortlessly. The intuitive control interface and customizable

settings further support the training process, enabling new surgeons to efficiently acquire the necessary skills. For instance, wrist rotation can be electronically enhanced via a multiplier (up to 2). This allows for a rotation range of 520°, potentially facilitating surgical movements, particularly during suturing. Lastly, we mention Touch Surgery, a cloud-based video-capture solution that provides anonymized records with artificial intelligence-automatic surgical phase recognition.

Although the system has a larger footprint compared to other platforms, its modularity stands out as a possible major advantage. Each robotic arm cart possesses 6 joints, offering flexibility for different surgical configurations through independent docking. This modularity potentially improves mobility of the robotic arms, making the Hugo RAS System ideal for performing multi-quadrant surgeries. Nonetheless, given these arguments, to better understand and optimize system capabilities, it is crucial to emphasize the significance of comprehensive initial technical training by relying on appropriate facilities. This training should involve all the surgical team (surgeon, bed assistant, and scrub nurse) and concentrate on providing a detailed overview of the fundamental aspects of the procedure, as well as the appropriate tilt and docking angles to avoid collision due to the lack of automatic targeting inherited by the multimodular fashion. In preparation for the first-in-human case,¹ our group dedicated dry lab training sessions and therefore tested the feasibility and optimal setting in preclinical cadaveric scenarios of robot-assisted radical prostatectomy (RARP) and robot-assisted partial nephrectomy,^{2,3} without experiencing technical issues or the necessity to modify any step of our surgical techniques.⁴

Our extensive experience with the Hugo RAS System has resulted in the largest published series of RARP to date, characterized by safe and complication-free procedures. Bravi et al have provided valuable

“This highly competitive market has witnessed the emergence of multiple robotic platforms in recent years, which hold the potential to drive faster innovation, develop high-quality products, reduce costs, and ultimately increase the availability of robotic systems worldwide, benefiting a larger number of patients.”

insights by reporting perioperative and 3-month continence outcomes from an initial cohort of 112 patients who underwent RARP using the Hugo RAS System.⁵ Similarly, Paciotti et al have contributed to our understanding by presenting 3-month continence and potency rates of 62 patients who underwent bilateral nerve-sparing RARP with the Hugo RAS System, employing our Aalst technique.⁴ While the evidence supporting the use of the Hugo RAS System in RARP is robust, its application in other oncologic procedures, such as robot-assisted radical cystectomy and robot-assisted partial nephrectomy, remains anecdotal.^{6,7} Notably, Gallioli et al reported a single case of laparoscopic conversion due to continuous collision between the robotic arms⁷; however, the limited sample size of the series (n=10) hinders drawing meaningful conclusions.

Finally and interestingly, few positive reports exist also regarding nononcologic procedures, where concerns surrounding cost-effectiveness have often restricted the widespread adoption of robotic approaches in such cases.⁸⁻¹⁰

Taken together, the Hugo RAS System demonstrates promising potential as a viable alternative in today's competitive market of robotic platforms. However, to solidify these preliminary findings, we eagerly anticipate large-scale clinical studies that can confirm the system's efficacy and ideally compare its performance to established references in the field, such as Intuitive Surgical's da Vinci system. The culmination of such research will undoubtedly shape the future of robotic surgery and further enhance patient care. ■

1. Bravi CA, Paciotti M, Sarchi L, et al. Robot-assisted radical prostatectomy with the novel Hugo robotic system: initial experience and optimal surgical set-up at a tertiary referral robotic center. *Eur Urol*. 2022;82(2):233-237.
2. Sarchi L, Mottaran A, Bravi CA, et al. Robot-assisted radical prostatectomy feasibility and setting with the Hugo™ robot-assisted surgery system. *BJU Int*. 2022;130(5):671-675.
3. Bravi CA, Sarchi L, Mottaran A, et al. Feasibility and optimal setting of robot-assisted partial nephrectomy with the novel “Hugo” robotic system: a pre-clinical study. *Urol Video J*. 2022;15:100164.
4. Paciotti M, Bravi CA, Mottaran A, et al. Nerve-sparing robot-assisted radical prostatectomy with the HUGO™ robot-assisted surgery system using the “Aalst technique.” *BJU Int*. 2023;132(2):227-230.
5. Bravi CA, Paciotti M, Balestrazzi E, et al. Outcomes of robot-assisted radical prostatectomy with the Hugo RAS surgical system: initial experience at a high-volume robotic center. *Eur Urol Focus*. 2023;10.1016/j.euf.2023.01.008.
6. Rocco B, Sighinolfi MC, Sarchi L, et al. First case of robot-assisted radical cystectomy and intracorporeal neobladder reconstruction with the Hugo RAS system: step-by-step surgical setup and technique. *J Robot Surg*. 2023;10.1007/s11701-023-01629-4.
7. Gallioli A, Uleri A, Gaya JM, et al. Initial experience of robot-assisted partial nephrectomy with Hugo™ RAS system: implications for surgical setting. *World J Urol*. 2023;41(4):1085-1091.
8. Elorrieta V, Villena J, Kompatzki Á, et al. ROBOT assisted laparoscopic surgeries for nononcological urologic disease: initial experience with Hugo RAS system. *Urology*. 2023;174:118-125.
9. Mottaran A, Bravi CA, Sarchi L, et al. Robot-assisted sacropexy with the novel HUGO robot-assisted surgery system: initial experience and surgical setup at a tertiary referral robotic center. *J Endourol*. 2023;37(1):35-41.
10. Mottaran A, Paciotti M, Bravi CA, et al. Robot-assisted simple prostatectomy with the novel HUGO™ RAS system: feasibility, setting, and perioperative outcomes. *Minerva Urol Nephrol*. 2023;75(2):235-239.

PROSTATE CANCER

Challenges of Community Outreach With the Mass General Brigham Prostate Cancer Outreach Clinic

Katherine Merport, BA

*Brigham and Women's Hospital, Harvard Medical School, Boston, Massachusetts
Massachusetts General Hospital, Harvard Medical School, Boston*

Genevieve Benoit, MPH

Massachusetts General Hospital, Harvard Medical School, Boston

Muhieddine Labban, MD

Brigham and Women's Hospital, Harvard Medical School, Boston, Massachusetts

Adam S. Feldman, MD, MPH

Massachusetts General Hospital, Harvard Medical School, Boston

Quoc-Dien Trinh, MD, MBA

Brigham and Women's Hospital, Harvard Medical School, Boston, Massachusetts

The Prostate Cancer Outreach Clinic (PCOC) was launched in March 2022, a mere 2 years after the emergence of COVID-19, and rather timely in the setting of health care redesign.¹ As part of a pilot program funded by the Mass General Brigham United Against Racism initiative, the PCOC was operationalized with the goals of increasing access to high-quality prostate cancer screening and to champion prostate cancer aware-

“As part of a pilot program funded by the Mass General Brigham United Against Racism initiative, the PCOC was operationalized with the goals of increasing access to high-quality prostate cancer screening and to champion prostate cancer awareness in the greater Boston area.”

ness in the greater Boston area.² To date, the PCOC has received close to 350 referrals and has treated more than half of these patients. Fifty percent of the patient population is composed of racial and ethnic minorities, thus decreasing disparities in prostate cancer outcomes across Massachusetts.

The clinic also aims to provide education on the prostate cancer care continuum for both clinicians and patients. This has been achieved through attending community outreach events. Having tabled at over 20 events in 18 months (see Figure), as well as presenting at community health centers and primary care clinics, the PCOC team has rendered much success in connecting with various communities and driving its mission, and conversely faced challenges given the target populations and landscape.

Structural Barriers

The complexity and expansive nature of our modern health care system often lends itself to structural barriers. To date, the team has identified 2 significant structural barriers that have become a primary focus: transportation and insurance.

A growing body of literature suggests that travel and transportation pose major hurdles to the receipt of prostate cancer care, especially for Black men.^{3,4} As prostate cancer care often requires many visits, whether for active surveillance or definitive treatment, transportation barriers create racial and ethnic disparities in prostate cancer outcomes, as well as a hesitancy for certain groups to obtain prostate cancer screening and care.^{3,4} To that end, the PCOC team has been awarded a grant by the Department of Defense to pilot a ride-share program for our patient population, which will provide free transportation for our patients while allowing

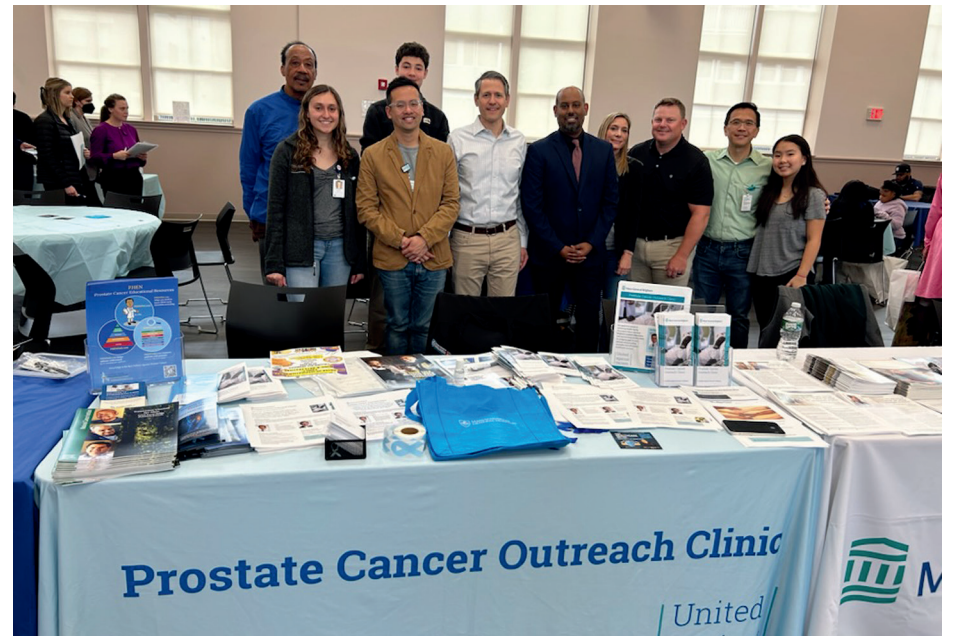


Figure. Members of the Prostate Cancer Outreach Clinic team, along with Mass General Brigham colleagues and volunteers, teamed up with Janssen Oncology and Java with Jimmy for the Joseph R. Betancourt Health Fair in Roxbury, Massachusetts.

“As prostate cancer care often requires many visits, whether for active surveillance or definitive treatment, transportation barriers create racial and ethnic disparities in prostate cancer outcomes, as well as a hesitancy for certain groups to obtain prostate cancer screening and care.”

the clinical team to focus on providing care for these men.

In addition to geospatial barriers, the PCOC team has encountered difficulties with insurance. While Massachusetts boasts

near-universal insurance coverage for its residents, we have found that many of the insurance plans offered to the patients we hope to serve often do not cover services provided by some of the major academic institutions in the Boston area.⁵ Our team works hard to troubleshoot insurance barriers and streamline the prior-authorization process, but denials and network contracts are not always within our control. While our team has fruitful referral pathways with outside organizations, restrictive insurance contract practices pose challenges to truly equitable care access.

Funding and Personnel

PCOC operates on a set budget primarily sourced from grants. This allocation supports the employment of a community health worker and a part-time program coordinator. As it stands, the faculty and clinical support staff contribute their expertise without direct compensation from PCOC. Diversifying the team and enhancing

CHALLENGES OF COMMUNITY OUTREACH WITH THE MASS GENERAL BRIGHAM PROSTATE CANCER OUTREACH CLINIC

→ Continued from page 12

stakeholder engagement has been somewhat constrained due to institutional governance policies. As the clinic experiences an increase in service demands and extends its community network, the limited staff and financial resources pose challenges to efficiently scale its service offerings. Furthermore, the continuity of funding on an annual basis is not absolute; articulating the need for sustained investment in community outreach is becoming an intricate task, as the fruition of significant results is typically long term.

Engaging Men in Care

Many attendees at community events are women. Some women are accompanied by male partners, though most attend with their children or other female friends or relatives. Focused almost exclusively on men's health, we often receive less attention from health fair attendees. However, the women who do approach our table will often say that the men in their lives are unwilling to talk about their health, much less about something as sensitive as prostate cancer.

Creating a space that attracts men and encourages them to speak openly about their health is challenging. Including both Black and

Latinx male volunteers, particularly those who have personal experience with prostate cancer, has been helpful to our team. We have found that our patients who connect with these volunteers are more likely to pursue prostate cancer screening and treatment, as they relate to volunteers of similar racial and ethnic backgrounds.

Moving forward, we hope to devise alternative strategies to engage men in their care. We also hope to connect with more groups who champion men's health issues and to become one of those groups as well.

Gaining Community Trust

Many health care systems struggle with a stigma due to historic discrimination against minority populations; furthermore, the US has subjected marginalized groups to unethical practices and unjust access to high-quality care. This, in turn, creates a gross distrust in the health care system, leading to downstream challenges such as building rapport with the community members we aim to serve. One remedy we have identified is actively spending time in the community. Although this effort serves as an opportunity to bridge the gap, our services are still complicated by institutional barriers, leading to

“It is our mission to continue to serve as many patients as possible by expanding outreach to many more individuals in need of prostate cancer care.”

reaffirmation of the community's beliefs that large academic health systems are not interested in helping, or simply cannot help, marginalized groups. To mitigate this, we have established connections with grassroots organizations that are deeply embedded in the community and can help serve patients. Unfortunately, some individuals are still hesitant to accept our services and trust in our mission as a positive force in health care.

As the PCOC enters its second year, the team is eager to evaluate progress by assessing current state challenges, build on our foundation of knowledge, and strategize next steps. It is our mission to continue to serve as many patients as possible by expanding outreach to many more individuals in need

of prostate cancer care. We are grateful for the opportunities that have been awarded to our team, and we are excited to see what comes next. ■

Support: None.

Conflict of Interest Disclosures: QDT reports personal fees from Astellas, Bayer, and Janssen outside the submitted work and research funding from the American Cancer Society, and Pfizer Global Medical Grants. ASF reports personal fees from Olympus America and Urogen Pharma, outside the submitted work; stock ownership in Vessi Medical and Scientent, outside the submitted work; research funding from Convergent Genomics outside the submitted work.

1. Benoit G, Labban M, Merport K, Trinh QD. DIVERSITY: the Mass General Brigham Prostate Cancer Outreach Clinic: tackling disparities by providing more equitable access to care. *AUA News*. 2022;27(12):40-41.
2. Mass General Brigham. *United Against Racism*. Accessed June 30, 2023. <https://www.massgeneralbrigham.org/who-we-are/united-against-racism>
3. Probst JC, Laditka SB, Wang JY, Johnson AO. Effects of residence and race on burden of travel for care: cross sectional analysis of the 2001 US National Household Travel Survey. *BMC Health Serv Res*. 2007;7(1):40.
4. Wolfe MK, McDonald NC, Holmes GM. Transportation barriers to healthcare in the United States: findings from the national health interview survey, 1997-2017. *Am J Public Health*. 2020;110(6):815-822.
5. An Act Providing Access to Affordable, Quality, Accountable Health Care, Chapter 58, Acts 2006, The 193rd General Court of the Commonwealth of Massachusetts. April 12, 2006. Accessed June 30, 2023. <https://malegislature.gov/Laws/SessionLaws/Acts/2006/Chapter58>

PROSTATE CANCER

Prostate Cancer in Transgender Women: Raising Awareness in Our Most Marginalized Populations

Farnoosh Nik-Ahd, MD

University of California, San Francisco

Jennifer T. Anger, MD, MPH

University of California, San Diego

Christi Butler, MD

University of California, San Francisco

Maurice M. Garcia, MD, MAS

Cedars-Sinai Medical Center, Los Angeles, California

Peter R. Carroll, MD, MPH

University of California, San Francisco

Matthew R. Cooperberg, MD, MPH*

University of California, San Francisco

Stephen J. Freedland, MD*

Cedars-Sinai Medical Center, Los Angeles, California

*Co-senior authors

Though prostate cancer has historically been thought of as a cancer affecting men, there are recent efforts to increase awareness of prostate cancer in transgender women (women with male assigned sex at birth).^{1,2} In light of ongoing marginalization and

discrimination affecting transgender and gender-diverse individuals, we commend the AUA's recent position statement on the commitment to caring for transgender and gender-diverse individuals.³ Urologists play a key role not only in the gender-affirmation process, but also in leading our understanding of prostate cancer in transgender women and in raising awareness of this important subject among patients and providers.

Though transgender women may undergo gender-affirming genital surgery via varying approaches, these women retain their prostates regardless of the surgery performed. As such, they remain at risk of prostate cancer and should still be considered for prostate cancer screening and undergo assessment of risk factors (similar to cisgender men), including family history and racial

→ Continued on page 14

PROSTATE CANCER IN TRANSGENDER WOMEN: RAISING AWARENESS IN OUR MOST MARGINALIZED POPULATIONS

→ Continued from page 13

“Though transgender women may undergo gender-affirming genital surgery via varying approaches, these women retain their prostates regardless of the surgery performed.”

background. Historically, prostate cancer in transgender women was thought to be very rare with literature on this limited to only 10 case reports.⁴ Recently, however, we published the largest case series on this subject to date, which consisted of 155 transgender women within the Veterans Health Administration who were diagnosed with prostate cancer.⁵ We initially identified a cohort of 449 people with ICD (International Classification of Diseases) codes for both transgender identity and prostate cancer. After chart review to confirm transgender identity and prostate cancer diagnosis details, we identified 155 subjects. Patients were stratified by estrogen usage given it is the most common gender-affirming hormone and typically results in a castrate environment, and thus may impact prostate cancer diagnosis and aggressiveness. Specifically, we hypothesized that women on estrogen at the time of prostate cancer diagnosis may have worse disease (ie, the disease was already partially castrate resistant). Among this cohort, 116 had never used estrogen, 17 were formerly on estrogen (stopped prior to prostate cancer diagnosis), and 22 were actively on estrogen at diagnosis. Only 8% of transgender women with prostate cancer were of Black race compared to 29% of cisgender male veterans.⁶ The implications of these findings are that prostate cancer in transgender women is not as rare as suggested based on previous case reports. However, rates were ~60%

lower than expected based on estimates in cisgender male veterans. Interestingly, patients actively on estrogen at diagnosis had the highest PSA density and highest proportion of Grade Group 5 disease, both markers of prostate cancer aggressiveness. Thus, consistent with our hypothesis, transgender women on gender-affirming hormones may have more aggressive disease or potentially delayed diagnosis. Delayed diagnosis may be due to lack of awareness of the need to screen as well as patient avoidance of health care settings due to misgendering and mistreatment.⁷

It remains to be elucidated whether prostate cancer in transgender women is indeed less common or underdiagnosed relative to cisgender men. Specifically, several factors may contribute to possible underdiagnosis or delayed diagnosis that urologists, specifically, should be aware of. These include a lack of awareness that these women have prostates and thus are at risk of prostate cancer, lower PSA screening rates in transgender women, the suppressive effects of estrogen on prostate cancer development, or false reassurance from “normal” PSA values. Historic PSA reference ranges are based on cisgender male data, whereas transgender women on gender-affirming hormones would be expected to have significantly lower PSAs due to estrogen causing castrate testosterone levels. Thus, the historic reference ranges are likely inappropriate for transgender women on gender-affirming hormones, and a normal PSA value in a transgender woman on estrogen may indeed warrant further evaluation.

Key areas of future research include establishing new PSA reference ranges for transgender women that specifically factor in the effects of gender-affirmation hormones. Additionally, transgender women are notably absent from PSA screening guidelines from all leading organizations. Though transgender women not on gender-affirming hormones should undergo PSA screening as per cisgender guidelines, future work should aim to create guidelines on how best to screen transgender women on gender-affirming hormones, including both the timing of

“We encourage urologists to engage in patient-centered discussions on PSA screening with transgender women, understand the patient perspective, and serve as an ally to help understand potential barriers to screening and decrease delayed health-seeking behaviors.”

PSA screening relative to gender-affirming hormone therapy initiation and the optimal screening interval. Though not yet evidence based, we suggest screening transgender women on gender-affirming hormones at regular intervals and using a PSA cutoff of >1 ng/mL at any age, consistent with prior work,⁸ as cause for further assessment and/or careful surveillance. Note that further assessment does not necessarily mean immediate biopsy, but rather evaluation with possible repeat PSA tests and/or MRI. As the impact of estrogen and subsequent castration on other prostate cancer biomarkers remains unknown, secondary biomarkers should be used cautiously until more data are generated. Additionally, we encourage clinicians to be wary of a rising PSA in transgender women on gender-affirming hormones.¹ For patients on finasteride, a weak form of hormonal therapy, the Food and Drug Administration suggests further investigation of a rising PSA, even if still within “normal” reference ranges.⁹ Similarly, we encourage clinicians to consider careful assessment of a rising PSA in transgender women on gender-affirming hormones, which are generally far more potent forms of hormonal therapy than 5 α -reductase

inhibitors. Like patients with a PSA >1 ng/mL, further assessment may include repeat PSA and/or prostate MRI to further risk stratify patients, with other biomarkers being used cautiously.

Finally, understanding the patient experience can be a powerful means of creating change, particularly in terms of decreasing the stigma and marginalization that may come with discussing a “man’s” cancer with transgender women. We encourage urologists to engage in patient-centered discussions on PSA screening with transgender women, understand the patient perspective, and serve as an ally to help understand potential barriers to screening and decrease delayed health-seeking behaviors. Clinicians should also be aware of additional barriers at the intersection of race, socioeconomic status, or access to care that may disproportionately affect transgender patients. As the number of individuals openly identifying as transgender continues to increase, urologists play a key role in our understanding of prostate cancer in this population and how to provide comprehensive, patient-centered care in a nuanced and thoughtful manner. ■

1. Nik-Ahd F, Anger JT, Cooperberg MR, Freedland SJ. Prostate cancer is not just a man’s concern—the use of PSA screening in transgender women. *Nat Rev Urol*. 2023;20(6):323-324.
2. Nik-Ahd F, Jarjour A, Figueiredo J, et al. Prostate-specific antigen screening in transgender patients. *Eur Urol*. 2023;83(1):48-54.
3. American Urological Association. *Transgender Care: Position Statement*. 2023. <https://www.auanet.org/about-us/policy-and-position-statements/transgender-care>
4. Deebel NA, Morin JP, Autorino R, Vince R, Grob B, Hampton LJ. Prostate cancer in transgender women: incidence, etiopathogenesis, and management challenges. *Urology*. 2017;110:166-171.
5. Nik-Ahd F, De Hoedt AM, Butler C, et al. Prostate cancer in transgender women in the Veterans Affairs health system, 2000-2022. *JAMA*. 2023;329(21):1877.
6. Makarov DV, Ciprut S, Walter D, et al. Association between guideline-discordant prostate cancer imaging rates and health care service among veterans and Medicare recipients. *JAMA Netw Open*. 2018;1(4):e181172.
7. Seelman KL, Colón-Díaz MJP, LeCroix RH, Xavier-Brier M, Kattari L. Transgender noninclusive healthcare and delaying care because of fear: connections to general health and mental health among transgender adults. *Transgend Health*. 2017;2(1):17-28.
8. Gooren L, Morgentaler A. Prostate cancer incidence in orchidectomized male-to-female transsexual persons treated with oestrogens. *Andrologia*. 2014;46(10):1156-1160.
9. U.S. Food and Drug Administration. *Full Prescribing Information: Finasteride*. Accessed July 10, 2023. https://www.accessdata.fda.gov/drugsatfda_docs/label/2021/020788s0281bl.pdf

PROSTATE CANCER

Testosterone Replacement After Definitive Prostate Cancer Treatment: Where Do We Stand?

Matthew J. Ziegelmann, MD

Mayo Clinic, Rochester, Minnesota

C. Scott Collins, MD

Mayo Clinic, Rochester, Minnesota

Testosterone deficiency is defined by low circulating testosterone levels and the presence of attributable symptoms.¹ The true incidence is unknown due to variation and controversy regarding what testosterone level defines testosterone deficiency. Until relatively recently, the prospect of offering testosterone replacement therapy (TRT) for patients with prostate cancer (PCa) was considered well outside the norm of standard practice. Early work from Huggins and Hodges showed that PCa cells are fueled by androgens, and application of testosterone to PCa cells results in cellular growth.² This work formed the basis upon which androgen deprivation has been used to treat metastatic PCa. It also created trepidation towards the use of TRT for hypogonadal patients with a history of PCa.

Over the last 2 decades, the dogma that patients with a history of treated PCa are not candidates for TRT has been brought into question. It is now well-established that TRT does not cause PCa or PCa recurrence after local treatment.¹ Morgentaler and Traish popularized the saturation model, which postulates that androgen receptors within prostate and PCa cells become saturated at levels far lower than normal circulating serum testosterone levels (around 200-250 ng/dL), and that raising exogenous testosterone levels beyond this threshold would have no further impact on cell growth.³ This model suggests that patients who are hypogonadal but not castrate can receive exogenous testosterone to raise circulating levels to a eugonadal state without risk for PCa proliferation.³

One of the earliest reports on the safety of TRT after PCa treatment came from Kaufman and Graydon in 2004.⁴ In their study of 7 patients who received TRT after radical

prostatectomy (the majority with Gleason 6 disease), no patient experienced biochemical recurrence (BCR). Since that time, there have been multiple retrospective series published, all showing relatively low and comparable rates of BCR when comparing TRT vs observation after radical prostatectomy. Interestingly, in one of the largest retrospective series to date from Ahlering et al, BCR rates were actually significantly lower in the TRT group (7.2% compared with 12.6% in the observation/control group). The idea that TRT may be protective against PCa recurrent is certainly intriguing but warrants more dedicated research.

For the most part, similar outcomes are seen with TRT after radiation therapy.^{1,5} Most studies to date have included patients with only low and intermediate risk PCa. However, one study from Pastuszak and colleagues found that patients with high-risk PCa (Gleason ≥ 8) who underwent radiation therapy had a significantly greater risk in their PSA (mean increase from 0.10 to 0.36 ng/mL; $P = .018$) compared to those with intermediate and lower risk at a median follow-up of 41 months.⁶ Only 6/98 patients (6.1%) experienced BCR overall, and all of these patients had intermediate- or high-risk PCa. Further work is needed to characterize outcomes in patients with high-risk disease. Most patients who receive radiation therapy for intermediate- and high-risk disease also receive concurrent androgen deprivation therapy (ADT) for anywhere from 6 months to 2 years. It may be prudent to wait several months or longer after radiation and ADT before starting TRT to determine if endogenous androgen production will recover.¹ Roughly 75% of men will have total testosterone levels >300 ng/dL within 2 years of stopping ADT, although only 50% return to their baseline testosterone levels.⁷

There is also a small body of evidence to support TRT for patients on active surveillance, now considered the treatment of choice for most patients with low-risk PCa and considered even for those with favorable intermediate-risk disease.^{5,8} In the largest cohort to date, Morgentaler and colleagues reported a 10% progression rate (defined as an increase in Gleason score) in men on active surveillance treated with TRT for >4 years.⁹

Currently, the AUA Guideline Panel for the Evaluation and Management of Testosterone Deficiency recommends that patients with a history of PCa should be counseled on the “inadequate evidence to quantify the risk-benefit ration of testosterone therapy” in men with hypogonadism. This recommendation is based on expert opinion due to the absence of high-level evidence. The expert panel from the International Consultation for Sexual Medicine Recommendations for Diagnosis and Treatment of Testosterone Deficiency states that “it may be reasonable to offer [TRT] to selective men with a history of PCa, particularly those who appear to be disease-free after definitive treatment of low-risk, localized disease.”¹⁰

There are several important considerations for TRT in patients with a history of treated PCa. First, the AUA guideline panel recommends a goal total testosterone within the middle tertile, defined as 450-700 ng/dL. This seems like a reasonable and safe target for men with treated PCa, particularly if one considers the saturation model. Second, all patients on TRT should be closely followed with routine labs obtained periodically to monitor for treatment efficacy and side effects.¹ In addition to routine safety labs, we also monitor serum PSA more closely during the early time frame after starting TRT—obtaining a baseline PSA followed by repeat serum PSA at 6 weeks, 3 months, 6 months, and every 6 months thereafter. Third, short-acting formulations such as gels or injections

should be considered initially. If there is a change in serum PSA, these agents can be stopped quickly. Finally, while not mandatory, it may be reasonable to consider having patients engage in a more formalized consent form prior to starting therapy to ensure appropriate documentation of your discussion regarding risks and benefits.

In summary, patients with symptomatic hypogonadism should not be deprived the opportunity for TRT. There are numerous retrospective studies suggesting that TRT can be used safely in patients with a history of definitive treatment for localized PCa. That being said, until we have more robust data, it is imperative that we engage our patients in the tried and true shared decision-making model of care.

Conflict of Interest Disclosures: The Authors have no pertinent conflicts of interest to disclose. ■

- Mulhall JP, Trost LW, Brannigan RE, et al. Evaluation and management of testosterone deficiency: AUA guideline. *J Urol*. 2018;200(2):423-432.
- Huggins C, Hodges CV. Studies on prostatic cancer. I. The effect of castration, of estrogen and androgen injection on serum phosphatases in metastatic carcinoma of the prostate. *CA Cancer J Clin*. 1972;22(4):232-240.
- Morgentaler A 3rd, Connors WP. Testosterone therapy in men with prostate cancer: literature review, clinical experience, and recommendations. *Asian J Androl*. 2015;17(2):206-211.
- Kaufman JM, Graydon RJ. Androgen replacement after curative radical prostatectomy for prostate cancer in hypogonadal men. *J Urol*. 2004;172(3):920-922.
- Kim M, Byun SS, Hong SK. Testosterone replacement therapy in men with untreated or treated prostate cancer: do we have enough evidences?. *World J Mens Health*. 2021;39(4):705.
- Pastuszak AW, Khanna A, Badhiwala N, et al. Testosterone therapy after radiation therapy for low, intermediate and high risk prostate cancer. *J Urol*. 2015;194(5):1271-1276.
- Nascimento B, Miranda EP, Jenkins LC, et al. Testosterone recovery profiles after cessation of androgen deprivation therapy for prostate cancer. *J Sex Med*. 2019;16(6):872-879.
- Eastham JA, Boorjian SA, Kirkby E. Clinically localized prostate cancer: AUA/ASTRO guideline. *J Urol*. 2022;208(3):505-507.
- Morgentaler A, Magauran D, Neel D, et al. MP17-03 Recurrence rates following testosterone therapy in a large clinical cohort of men with prostate cancer. *J Urol*. 2018;199(Issue 4S):e206.
- Morgentaler A, Traish A, Hackett G, et al. Diagnosis and treatment of testosterone deficiency: updated recommendations from the Lisbon 2018 international consultation for sexual medicine. *Sex Med Rev*. 2019;7(4):636-649.

OUT OF OFFICE

An Interview With Dr Milhouse

Fenwa Milhouse, MD

Down There Urology, Chicago, Illinois

Kymora Scotland, MD, PHD

University of California, Los Angeles Health

The AUA was excited to facilitate a conversation between Dr Kymora Scotland, assistant professor of urology, director of endourology research, and associate director of the endourology fellowship program for the University of California, Los Angeles Health, and Dr Fenwa Milhouse, pelvic floor surgeon, sexual medicine specialist, and star of the TLC TV network show, “Dr Down Below.” Dr Scotland spoke with Dr Milhouse about her new urology show that premiered in April, as well as the importance of showcasing diversity within the urological community.

How Did the Idea of a TV Show Come to Fruition?

I often replay this in my head, how did I get here? I had started my Dr Milhouse Instagram account before the pandemic but dabbled very infrequently in it. I ramped it up during the pandemic, and it was fun for me at the time. I found it to be an outlet that I enjoyed, and it added value to my career. In doing that, I started to create a following and took that momentum to TikTok. That is how a talent, or kind of scout-type of person in Hollywood, landed on my page and said, “Oh, this could be a TV show!” She sent me a DM on Instagram, and it could have completely gone ignored and dismissed. In fact, I thought it was a scam or a joke! She called me and from there we started to get the wheels in motion. What was premiered on April 5 was a little over 2 years from the initial DM, and I am so proud of everything we put into it.

How Did You Think of Content Ideas for the Show?

It was a lot of trial and error, but I knew I wanted to talk about urology, and I wanted to get information out

“As a urologist, so much of what we do is a mystery to people. It’s a mystery to our colleagues in medicine even!”

there to whoever wanted to consume it. As a urologist, so much of what we do is a mystery to people. It’s a mystery to our colleagues in medicine even! I really was motivated to share what it is that we do in urology because I really love being a urologist. For me, it’s easy to think of content because there is so much out there that people haven’t seen before. At this time there were a few doctors on social media, like my colleague Dr Malik, who had started her YouTube channel around the same time, but there really weren’t voices in urology.

When I am thinking about content, I know that I must be myself. At first, I was trying to be something that I thought people were looking for from a doctor account for social media, but then I quickly realized I need to just be myself, I can be myself in a way that is engaging and professional, and it started working. People liked it, people were learning, and they asked for me to do more. And then I was asked to collaborate with other people who were in social media, asked to be involved in other brands, and it started to grow from there. But it truly started from me finding a passion for urology.

Why Is Representation Important to You as a Urologist?

I wouldn’t be a urologist without representation. I grew up with not very many examples of being a medical doctor, and certainly not examples of being in surgery or a surgery specialty. Because of this, when entering medical

school, I didn’t at all consider any type of surgical fields. In fact, if you had asked me my first year, “Are you going to be surgeon?” I would have laughed and said, “No way. I can’t see it. I don’t have what it takes.” Why did I feel that way? It’s the lies and the things that the world tells you about yourself. When you don’t see examples of professionals who look like you it is hard to imagine it for yourself. It wasn’t until I met a urologist who looked like me that it was almost like the walls behind me were going to crumble down, that was what it felt like the moment I met Dr Wesley. Suddenly I was wondering what’s been holding me back knowing now we can do this as women, we can do this as Black women, and we can do this as people of color. I can go back and remember that feeling that I had when I saw representation, it is absolutely critical and can change lives. I’ve already had multiple encounters with now urology residents who have said, “Dr Milhouse, I saw you on something” or “I met you at an event, and you literally opened the door to urology for me.”

Once You Started the Show, What Did You Find Was the Most Surprising Thing About that Process?

I was surprised that, honestly, in the beginning it wasn’t that hard to get people to say yes! I was shocked because this is a TV show and we are talking about sensitive genital issues, issues around sex private parts, and we don’t want to blur the patient. People have asked me why we don’t blur the faces, but we need to have the audience connect with that individual. If the audience doesn’t connect with that individual, then they see this condition as something that somebody else must deal with. They can’t see this condition could happen to somebody they love or somebody close to them. To us, it

was important to share the story of the individual patients in the show, humanize them and their condition to help lose some of the stigma around these issues. I want to say the first 4 people I asked said yes, and I was shocked. These are people who met me like a few days before filming and here I am doing surgery on them. It’s really humbling to know that people are suffering from conditions and were gracious and trusting enough to have me do this all on national TV.

What Would Be Your Advice for Urologists Who Are Trying to Get Urology Out to the World and Help the General Public Understand What We Do?

I think it’s important to have a mission, goal, niche, or something that you are passionate about. I don’t think doing it for the fame is a good goal in and of itself, because it’s a lot of work. And if you aren’t passionate about something, you’re not going to want to put in the work. For me it has been another full-time job.

Second, be yourself. One thing I love about the pilot episode was how they really captured my personality. While you are being yourself, you also have to be aware about how you come across; you don’t want to disparage your patients, your other colleagues, or the public.

Lastly, you’re going to need to be consistent. It’s going to be fun, but it is work, and consistency pays off. It’s not going to be overnight. I started my Dr Milhouse account in 2018 or 2019, and it was 2023 when the show came to fruition. It takes time, but when you’re doing it for the right reasons it takes you the places that you want it to take you.

AN INTERVIEW WITH DR MILHOUSE

→ Continued from page 16

What Impact Do You Hope the Show has on People in General?

One, I want people to normalize the conversation around our genitals. Let's be able to say penis, vulva, vagina, clitoris, and testicles, and not feel squeamish. The show is called "Dr Down Below," which I think is cute. The name of my practice is called "Down There Urology" because that's what people say, they rarely say the actual part. I want to normalize that conversation. These aren't dirty words, they are completely normal biological anatomical terms.

I also hope to destigmatize urological conditions. Almost all the conditions that we deal with in our specialty have some stigma to them, even prostate cancer, which was not featured on the pilot show. Oftentimes we see that the patient feels like they are the only one dealing with it and they're alone,

but I'm constantly telling patients they are not. No one talks about it, but you probably know 2 or more people who are dealing with this too. That is why it is important to share and connect with these real-life patients and stories.

The last impact I want to make with this show is to expose a side of our specialty that is fun. I want to showcase the side of us being doctors and professionals and surgeons, but also have people be able to see us as humans, as people. I think when patients think of seeing the surgeon and going to the doctor it seems intimidating, and some doctors are very rigid and unapproachable. What I'm hoping is this show shows that we are full of personality and come with different sides of ourselves that can create this patient-doctor relationship. Especially in urology there is so much light-hearted humor, so it'll be great to see that on the big wider screen.

Is There Anything Else That You Want to Mention About "Dr Down Below" or the Importance of Representation in Urology?

It'll be interesting to see what impact the show will have on numbers for urology residents and applicants. With this show I have a suspicion that we'll see an even more diverse pool of applicants. One of the medical students I work with told me that she is jokingly not excited about the show because it's going to make it harder for her to match into urology. I'm hoping people see what I do and see that I'm having fun so they can consider rotating into this specialty.

The show is just a pilot right now, but everyone's million-dollar question is, when are we going to

"I'm hoping people see what I do and see that I'm having fun so they can consider rotating into this specialty."

get more? It is just a pilot episode, and it was meant like that to judge the overall response, but the response has been great. The viewership was almost a million on night 1, which is amazing for a show that was not heavily advertised beforehand. Also, the overall reception of what was seen has been very positive. Over 94% of people enjoyed it, and people are asking for more. So just sit tight! Overall, I'm happy with the product, and I hope I represented the urology community at large well. ■

Mentorship Matters: The Impact of a Private Practice Urologist

Mallory E. McCormick, DO
Loyola University Medical Center, Maywood, Illinois

My path to urology was not the straightest, but hard work, perseverance, and the support and guidance of many urologists that got me where I am today. One of my most pivotal mentors was a private practice urologist who I had previously scribed for, Dr E. Bradley Pewitt. While I also had academic urology mentors, there was something special about what Dr Pewitt provided for me as I went from a medical student to urology applicant to urology resident.

He eagerly took me under his wing as a medical student and allowed me to learn how to run his busy urology clinic alongside him. When the opportunity arose to teach me surgery, he willingly filled out paperwork to be a preceptor at my medical school so I could learn from him in the operating room. In that setting, he

steadily increased my autonomy so I could stand out and be well prepared for my urology away rotations. As a student who lacked a home urology program, he never hesitated to give me the best that he could offer so I could achieve my goal of being a urologist, even if it meant extra work for him. He was so deeply invested in my success that when I needed advice, he never shied away from assisting. When I went unmatched, he was the first person I turned to when I was weighing my next steps forward. So, when my medical school allowed us to choose a doctor to hood us on our graduation, there was no one was more deserving than Dr Pewitt to be there with me in my last moments as a medical student and my first as a doctor (Figures 1 and 2). This past year when I was a general surgery preliminary resident, Dr Pewitt was always accessible, often checking in



Figure 2. Dr E. Bradley Pewitt (left) and Dr Mallory McCormick (right).

to see how I was doing in the mix of learning to be a surgeon and re-applying urology. It was refreshing to experience his excitement with every step of the journey, wheth-

er it was interviews or rank-order lists. Being able to tell him that I matched urology this year and see-

→ Continued on page 18

MENTORSHIP MATTERS: THE IMPACT OF A PRIVATE PRACTICE UROLOGIST

→ Continued from page 17



Figure 1. Dr Mallory McCormick receiving her hood on her medical school graduation from Dr E. Bradley Pewitt.

ing his reaction of how much my match meant to him will forever be a highlight of that day.

I have encountered medical students in a similar position to myself of not having a home urology pro-

gram. I do not want to take away that I benefitted from having academic urology mentors who understood the specifics of the urology match and application process. But I also want to highlight that Dr Pewitt provided me with a foundation of urological knowledge, an opportunity to improve my clinical and operative skills, and unrelenting support. He even gave me the encouragement I needed to reach out to other academic urologists, many of these becoming the additional mentors I needed.

Great mentors can be anyone invested in the success of their mentees. It is important to recognize what each mentor can and is willing to provide. However, for those lacking a home program, it is likely that their only exposure to urologists may be those in private practice. They should be encouraged to see these urologists as potential mentors and advocates. For me, so much of my success in urology can be accredited to Dr Pewitt and how he set me up to have a solid foundation

“Great mentors can be anyone invested in the success of their mentees. It is important to recognize what each mentor can and is willing to provide.”

to start training as a future urologist. With the excitement of my future career ahead of me, I know from his example that regardless of the path I choose, whether academics or private practice, I can positively impact future urologists in the field. ■

Dr Pewitt, thank you for providing me a unique opportunity, for going above and beyond to give me a chance, and for believing in me. I hope I can always make you proud and carry on the legacy of all you have taught me. My success is your success.

The Role of Botulinum Toxin for the Pediatric Neurogenic Bladder: Who, When, and How Much Is Too Much?

Israel Franco, MD, FAAP, FACS
Yale Medicine-YNHH Children's Bladder and
Continence Program, New Haven, Connecticut

Since our first review of botulinum toxin for use in children in 2009¹ we have had a significant change in the landscape of pediatric urology with the approval of onabotulinum toxin A for the treatment of neurogenic detrusor overactivity in children^{2,3} and neurogenic and nonneurogenic detrusor overactivity^{4,5} in adults. These strides have solidified our knowledge base utilizing randomized trials to show efficacy in onabotulinum toxin for detrusor overactivity. We will concentrate on discussing what we do know regarding who should be treated, when they should be treated, and how much should be injected in the patient with neurogenic detrusor overactivity.

Who Is a Candidate?

The patient who is 5 years of age or older who is not tolerating anticholinergic therapy or is refractory to anticholinergic or beta3 agonist therapy is considered a candidate for injection with onabotulinum toxin A based on recent Food and Drug Administration (FDA) approvals. Some centers are looking to lower these numbers in an attempt to be proactive. It is our practice to obliterate all detrusor overactivity in our patients regardless of end filling pressures since the persistent detrusor overactivity over the long term can lead to detrusor hypertrophy, which in turn can lead to further overactivity or fibrosis. Failure to do so in some patients can lead to irreversible fibrosis, which may account for failure of injections in untreated

“We will concentrate on discussing what we do know regarding who should be treated, when they should be treated, and how much should be injected in the patient with neurogenic detrusor overactivity.”

patients, or in patients who have had “wait and see” (nonproactively treated) therapy. In a study by Pascali et al⁶ they report a marked

decrease in fibrosis between untreated bladders vs those treated with onabotulinum toxin A injections. Similar studies in adults by several groups⁷⁻¹⁰ indicate that fibrosis was decreased in injected bladders and there was lack of inflammation or edema in the tissues as well. With these findings in mind, we see the rationale for earlier intervention with onabotulinum toxin A in children. The data from the most recent publication by Franco et al³ indicate that results are effective long-term. A patient who is refractory to botulinum toxin A could be indicative of ongoing tethering and not just failure of the botulinum toxin A due to tachyphylaxis or antibodies (both unlikely).

→ Continued on page 19

THE ROLE OF BOTULINUM TOXIN FOR THE PEDIATRIC NEUROGENIC BLADDER

→ Continued from page 18

When Do You Treat?

At the present time, when to intervene in the patient with neurogenic detrusor overactivity with onabotulinum toxin A is not well defined. The guidelines put forth by the European Society of Pediatric Urology and International Children's Continence Society call for proactive management of neurogenic patients. This calls for the early use of anticholinergics and, if need be, beta3 agonists if the patient is old enough to use these medications. If the patient can't tolerate anticholinergics and a beta3 agonist is not an option, or if the patient is on both medications and contractions or pressures persist at high levels, then this patient becomes a candidate for onabotulinum toxin A injections. In this scenario it may be reasonable to consider the injection of a patient who is younger than the FDA-approved age if the only option is augmentation cystoplasty or vesicostomy. After the first injection it is advisable to obtain a urodynamic study within the 1-2 months to verify that there has been a positive result with the injection; this is especially important in nonverbal patients, in patients where dryness is not fully achievable, or where pressures were high without leakage. Once confirmation is obtained by urodynamics and the known safe bladder pressure is determined we can begin to use first morning cathed volume as a postinjection proxy for efficacy of the injection. This can be used as a benchmark to confirm when the injection is wearing off and to consider reinjection. Having patients track weekly first morning cathed volumes is a strategy that we employ to alert us of the need to reinject. After 2-3 injections many patients will be able to tell you when they need reinjection.

How Much to Inject?

The FDA-approved maximum dose for injection for neurogenic patients is 6 units/kg, which will translate to 200 units of onabotulinum toxin A in a ≥33-kg patient. In a systematic review by Hascoet et al¹¹ doses varied from 5 units to 10-12 units/kg with the maximum dose being 300 units. Some urol-

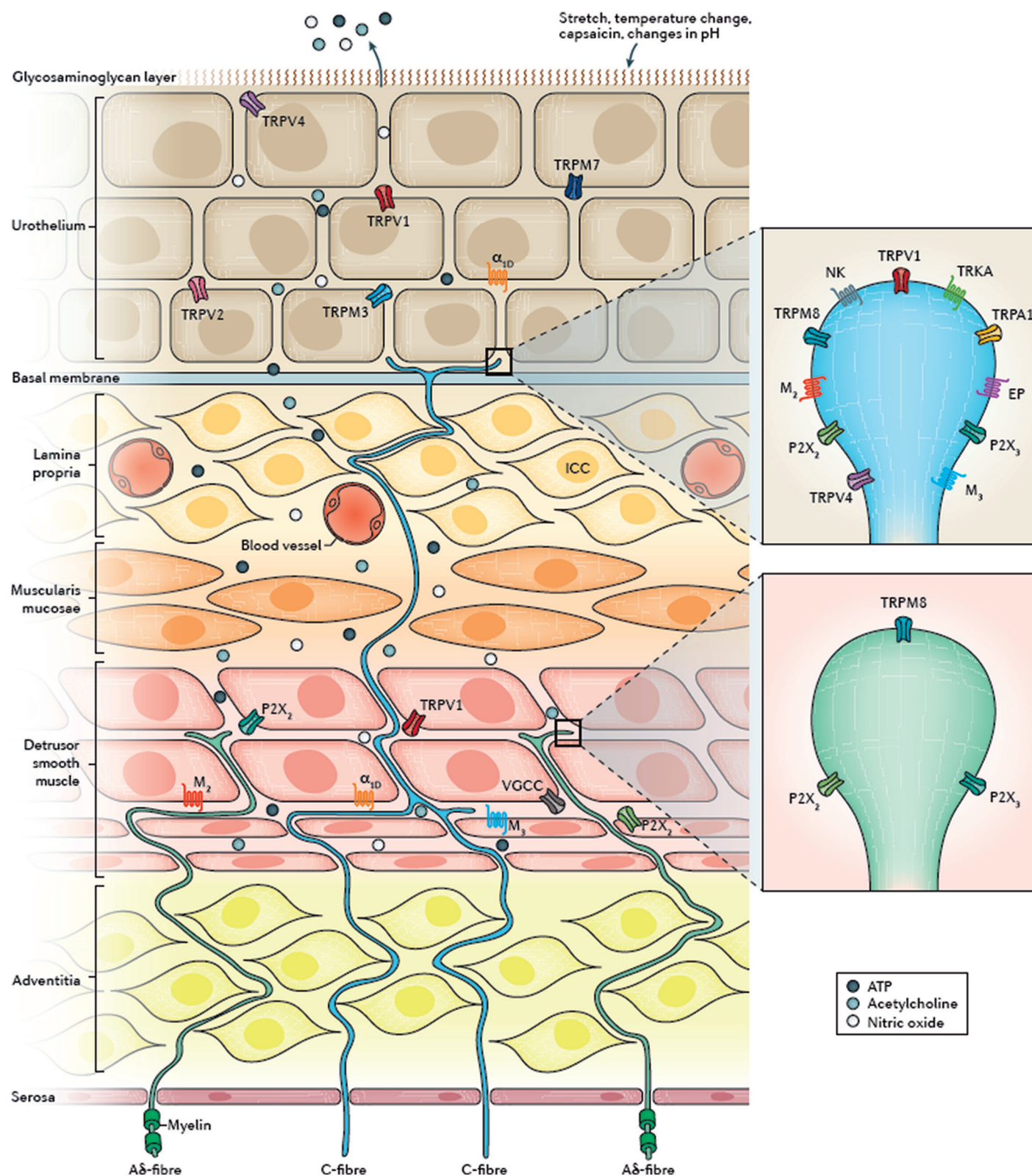


Figure. The location of afferent nerves and their receptor subtypes. Aδ-fibers have been observed in the muscle layer of the bladder, while C-fibers are located in the smooth muscle, urothelial and suburothelial layers. Aδ-fibers transmit normal filling sensations and are activated by low-intensity stimuli. When the bladder is stretched to maximal capacity or in certain disease states, C-fibers, which are activated by high-intensity stimuli, are more likely to be activated. Transient receptor potential cation channel subfamily V (TRPV) channels on the urothelium are implicated in sensing changes that are, for the most part, not stretch-related. Activation of α1d adrenoceptors expressed on the urothelium and smooth muscle might have a role in the response of patients with overactive bladder symptoms to nonselective α-blockers. Reprinted with permission from Franco, *Nat Rev Urol.* 13(9):520-532.¹⁴ ATP indicates adenosine triphosphate; EP, prostaglandin E2 receptor; ICC, interstitial cell of Cajal; TRKA, high-affinity nerve growth factor receptor; TRPA, transient receptor potential cation channel subfamily A; TRPM, transient receptor potential cation channel subfamily; M, muscarinic; NK, neurokinin; P2X, P2X purinoceptor; VGCC, voltage-gated calcium channel.

ogists are routinely utilizing 300 units, which was a treatment arm dose in the adult neurogenic study based on the fact that there were some data to support that the higher dose lasted longer. This has not been verified in any other studies

but many veteran onabotulinum toxin A injectors continue to use this dose. There are some who are performing injections in the submucosa instead of in the detrusor. The rationale for this is that the space between the mucosa and lamina

propria has an abundance of c fibers which have ach, trp, and purinergic receptors known to be affected by onabotulinum toxin A. There continue to be more data that sup-

→ Continued on page 20

THE ROLE OF BOTULINUM TOXIN FOR THE PEDIATRIC NEUROGENIC BLADDER

→ Continued from page 19

port the theory that onabotulinum toxin A works by altering sensory pathways and not solely by a motor mechanism.^{12,13}

How Much Is Too Much?

When to decide that continued injections are not providing adequate efficacy or that some other procedure is in order to help the patient is something that in some cases comes down to a personal choice by the patient and in others is necessary because the well-being of the patient is in danger. The scenario of personal choice is exemplified by the patient who may have had adequate capacity when younger with onabotulinum toxin A but a subsequent growth spurt has now rendered the urinary output too high to feasibly remain dry at a diminished bladder volume making it socially and logistically impossible for the patient to cath as often as they need. An

augmentation procedure would be an option to expand capacity, to make it easier for the patient to remain socially dry and improve their quality of life.

The scenario of endangered well-being is typified by the patient with high bladder pressures even when dry who is routinely getting bladder infections due to the high pressures because they do not cath at a reasonable volume and exceed their safe pressures at the higher volumes that have been achieved with onabotulinum toxin A. Onabotulinum toxin A injections become a double-edged sword in these patients because we can take them to volumes of 300-400 cc where if they cath they are in a safe zone, but once they exceed these volumes pressures rise precipitously and the patient puts themselves in danger of upper tract damage. This is something that one needs to be especially cognizant of in adolescents. The

scenario where pressures rise or volumes drop precipitously with or without lower extremity changes should immediately trigger an investigation or referral for tethered cord. ■

1. Dyer LL, Franco I. Botulinum toxin-A therapy in pediatric urology: indications for the neurogenic and non-neurogenic neurogenic bladder. *Scientific World Journal*. 2009;9:1300-1305.
2. Austin PF, Franco I, Dobremez E, et al. OnabotulinumtoxinA for the treatment of neurogenic detrusor overactivity in children. *Neurourol Urodyn*. 2021;40(1):493-501.
3. Franco I, Hoebcke PB, Dobremez E, et al. Long-term safety and tolerability of repeated treatments with onabotulinumtoxinA in children with neurogenic detrusor overactivity. *J Urol*. 2023;209(4):774-784.
4. Nitti VW, Dmochowski R, Herschorn S, et al. OnabotulinumtoxinA for the treatment of patients with overactive bladder and urinary incontinence: results of a phase 3, randomized, placebo controlled trial. *J Urol*. 2013;189(6):2186-2193.
5. Chapple C, Sievert KD, MacDiarmid S, et al. OnabotulinumtoxinA 100 U significantly improves all idiopathic overactive bladder symptoms and quality of life in patients with overactive bladder and urinary incontinence: a randomised, double-blind, placebo-controlled trial. *Eur Urol*. 2013;64(2):249-256.
6. Pascali MP, Mosiello G, Boldrini R, et al. Effects of botulinum toxin type a in the bladder wall of children with neurogenic bladder dysfunction: a comparison of histological features before and

after injections. *J Urol*. 2011;185(6S):2552-2557.

7. Comperat E, Reitz A, Delcourt A, et al. Histologic features in the urinary bladder wall affected from neurogenic overactivity—a comparison of inflammation, oedema and fibrosis with and without injection of botulinum toxin type A. *Eur Urol*. 2006;50(5):1058-1064.
8. Haferkamp A, Schurch B, Reitz A, et al. Lack of ultrastructural detrusor changes following endoscopic injection of botulinum toxin type a in overactive neurogenic bladder. *Eur Urol*. 2004;46(6):784-791.
9. Apostolidis A, Jacques TS, Freeman A, et al. Histological changes in the urothelium and suburothelium of human overactive bladder following intradetrusor injections of botulinum neurotoxin type a for the treatment of neurogenic or idiopathic detrusor overactivity. *Eur Urol*. 2008;53(6):1245-1253.
10. Haferkamp A, Dorsam J, Resnick NM, Yalla SV, Elbadawi A. Structural basis of neurogenic bladder dysfunction. III. intrinsic detrusor innervation. *J Urol*. 2003;169:555-562.
11. Hascoet J, Manunta A, Brochard C, et al. Outcomes of intra-detrusor injections of botulinum toxin in patients with spina bifida: a systematic review. *Neurourol Urodyn*. 2017;36(3):557-564.
12. Apostolidis A, Dasgupta P, Fowler CJ. Proposed mechanism for the efficacy of injected botulinum toxin in the treatment of human detrusor overactivity. *Eur Urol*. 2006;49(4):644-650.
13. Apostolidis A, Popat R, Yiangou Y, et al. Decreased sensory receptors P2X3 and TRPV1 in suburothelial nerve fibers following intradetrusor injections of botulinum toxin for human detrusor overactivity. *J Urol*. 2005;174(3):977-983.
14. Franco I. Overactive bladder in children. *Nat Rev Urol*. 2016;13(9):520-532.

Is Stentless Ureteroscopy Safe in the Dusting Era?

Russell E. N. Becker, MD, PhD
University of Michigan, Ann Arbor

Andrew M. Higgins, MD
University of Michigan, Ann Arbor

Stephanie Daignault-Newton, MS
University of Michigan, Ann Arbor

Elaina Shoemaker, MS
University of Michigan, Ann Arbor

Casey A. Dauw, MD
University of Michigan, Ann Arbor

Khurshid R. Ghani, MBChB, MS, FRCS
University of Michigan, Ann Arbor

It is well established that ureteral stenting after ureteroscopic stone treatment is associated with pain and urinary symptoms in many patients.¹ Stent-related symptoms can drive unplanned health care utilization. In Michigan, clinical registry data from the Michigan Urological Surgery Improvement Collaborative (MUSIC) demonstrated a significant decrease in postoperative emergency depart-

ment visits after ureteroscopy when ureteral stents were omitted.^{2,3} In the era of increased focus on the patient experience as an important component of the quality of care, the pendulum is swinging toward efforts to safely omit stents when possible—“stentless ureteroscopy.” Current AUA guidelines recommend ureteral stent omission after ureteroscopy and stone intervention if they meet the following criteria: normal contralateral kidney, no renal functional impairment, renal stone burden <1.5 cm, no planned second stage ureteroscopy, no ureteric injury or stricture, and no other anatomical impediments to stone fragment clearance.⁴ Despite this guidance, stenting remains commonplace, with multiple studies showing that ~80% of all patients after ureteroscopy routinely receive a stent after their procedure.^{2,5} This likely reflects the prevailing dogma that placing a

Patient	Criteria
Pre-stented Stone size: < 15mm	Case Type: Uncomplicated URS* Stone Location: Kidney or Ureter UA/Urine Culture: Negative Residual Fragments: Small or None Access Sheath Use: No Dilation: No
Not Pre-Stented Stone size: ≤ 10mm	

Figure. When can you omit ureteral stents after ureteroscopy? Michigan Urological Surgery Improvement Collaborative stent omission guidelines as determined by using the RAND/UCLA Appropriateness Methodology. Reprinted with permission from Hiller et al, *Urol Pract*. 2022;9(3):253-263.⁹ UA indicates urinalysis; URS, ureteroscopy.

stent is the “safe” course, since stenting mitigates the theoretical risk of postoperative ureteral obstruction and an unplanned hospital visit. However, this risk may be overestimated, as only 0.5% of 399 stentless ureteroscopy cases in a large academic center required a return to the operating room for secondary stent placement.²

The emergence of several new technologies, including high-power holmium lasers, smaller flexible ureteroscopes, and the thulium fiber laser, has ushered in a new era of dusting laser lithotripsy technique, which is now utilized by

→ Continued on page 21

IS STENTLESS URETEROSCOPY SAFE IN THE DUSTING ERA?

→ Continued from page 20

Table. Michigan Urological Surgery Improvement Collaborative Appropriateness Criteria Panelists' Consensus Definition of Uncomplicated Ureteroscopy^a

Uncomplicated ureteroscopy
Age ≥18 years
American Society of Anesthesiologists (ASA) score <3
Not immunocompromised or pregnant
No evidence of functional/anatomic solitary kidney
No anatomic abnormalities (ie, stricture, ureteropelvic junction obstruction, horseshoe kidney)
No urinary tract reconstruction
No uncorrected bleeding diathesis, anticoagulant, and/or antiplatelet therapy
No history of neurogenic bladder or incomplete bladder emptying
No signs or symptoms of sepsis
No history of sepsis associated with urinary tract infection
No untreated positive urine culture
No stones in multiple locations (ie, both ureter and kidney)
Stone size ≤15 mm
Operative time ≤60 min
No balloon dilation of the ureter
Unilateral procedure
No plan for second look procedure
Retrograde ureteroscopy only
No ureteral perforation or trauma

^aReprinted with permission from Hiller et al, *Urol Pract.* 2022;9(3):253-263.⁹

many urologists.^{6,7} In contrast to the historical standard of fragmentation and active basket retrieval of fragments, the dusting technique—especially for kidney stones where they are broken down into submillimeter fragments (similar to shockwave lithotripsy)—provides an opportunity for surgeons to avoid the routine use of ureteral access sheaths with less trauma to the ureteral mucosa, therefore facilitating the practice of stent omission. A prospective multicenter comparison between dusting and fragmentation strategies found that stone-free rates and complications were equivalent, while dusting was significantly faster.⁸ All patients in that study received stents per protocol, but the opportunity to safely omit stents may be the strongest advantage of a dusting approach. With increased use of dusting, perhaps is it finally time for the field to shift our thinking to a default stent omission strategy, with stents placed only in cases with specific indications?

Toward this end, MUSIC recently developed practice-based consensus guidelines on the appropriateness of ureteral stent omission following stone treatment after an uncomplicated ureteroscopy.⁹ Seven variables affecting stent decision making were identified: (1) stone size, (2) stone location (kidney or ureter), (3) pre-stenting status, (4) urinalysis or urine culture result, (5) nonballoon ureteral dilation performed, (6) use of a ureteral access sheath, and (7) presence of basketable-sized residual stone fragments. The Figure provides an overview of the criteria for stent omission, while the Table provides the MUSIC panel consensus definition of uncomplicated ureteroscopy. One key finding to emerge from this work was that pre-stented patients undergoing ureteroscopy are prime candidates for postoperative stent omission. Observational data from MUSIC showed that among pre-stented patients, those receiving a postoperative stent were more than twice as likely to have a post-

“In contrast to the historical standard of fragmentation and active basket retrieval of fragments, the dusting technique—especially for kidney stones where they are broken down into submillimeter fragments (similar to shockwave lithotripsy)—provides an opportunity for surgeons to avoid the routine use of ureteral access sheaths with less trauma to the ureteral mucosa, therefore facilitating the practice of stent omission.”

operative emergency department visit or hospitalization, compared to those undergoing stent omission.³

Based on the available evidence to date and our institutional practice, we feel that stentless ureteroscopy is safe in appropriately selected cases. However, large-scale prospective data on the outcomes of stent omission are still lacking. A recent Cochrane review synthesized outcomes from 16 clinical trials with a total of 1,970 participants, and found that the strength of existing evidence is very low, with limited ability to draw meaningful conclusions.¹⁰ No studies to date have examined patient-reported outcomes or health care utilization after ureteroscopy (eg, office phone calls, messages, unplanned visits).

The Cochrane review concluded that higher-quality and sufficiently large trials are needed to better inform decision-making. A recently opened pragmatic multicenter combined randomized and observational clinical trial, coordinated through MUSIC, and funded by the Patient Centered Outcomes Institute, aims to address the shortcomings of prior studies. The Stent Omission after Ureteroscopy and Lithotripsy study will comprehensively assess patient outcomes for stent omission vs placement after uncomplicated ureteroscopy in nearly 800 patients. The coprimary outcomes are patient-reported outcomes at days 7-10 after ureteroscopy, and 30-day unplanned postoperative health care utilization. Results from this 2-year clinical trial are anticipated to provide the largest prospective evidence to date on the safety and patient experience of stentless ureteroscopy in the modern era. We then hope to answer the question, is stentless ureteroscopy safe in the dusting era? ■

- Joshi HB, Stainthorpe A, MacDonagh RP, Keeley FX, Timoney AG. Indwelling ureteral stents: evaluation of symptoms, quality of life and utility. *J Urol.* 2003;169(3):1065-1069.
- Hiller SC, Daignault-Newton S, Pimentel H, et al. Ureteral stent placement following ureteroscopy increases emergency department visits in a statewide surgical collaborative. *J Urol.* 2021;205(6):1710-1717.
- DiBianco JM, Daignault-Newton S, Dupati A, et al. Stent omission in pre-stented patients undergoing ureteroscopy decreases unplanned health care utilization. *Urol Pract.* 2023;10(2):163-169.
- Assimos D, Krambeck A, Miller NL, et al. Surgical management of stones: American Urological Association/Endourological Society Guideline, PART II. *J Urol.* 2016;196(4):1161-1169.
- Mittakanti HR, Conti SL, Pao AC, et al. Unplanned emergency department visits and hospital admissions following ureteroscopy: do ureteral stents make a difference?. *Urology.* 2018;117:44-49.
- Dauw CA, Simeon L, Alruwaily AF, et al. Contemporary practice patterns of flexible ureteroscopy for treating renal stones: results of a worldwide survey. *J Endourol.* 2015;29(11):1221-1230.
- Zhu A, Becker REN, Higgins AM, et al. PD28-08 Ureteroscopy dusting versus fragmentation/basketing for treating renal stones: real world utilization and outcomes. *J Urol.* 2023;209 (Suppl 4):e821-e822.
- Humphreys MR, Shah OD, Monga M, et al. Dusting versus basketing during ureteroscopy— which technique is more efficacious? A prospective multicenter trial from the EDGE research consortium. *J Urol.* 2018;199(5):1272-1276.
- Hiller SC, Daignault-Newton S, Rakic I, et al. Appropriateness criteria for ureteral stent omission following ureteroscopy for urinary stone disease. *Urol Pract.* 2022;9(3):253-263.
- Ordóñez M, Hwang EC, Borofsky M, Bakker CJ, Gandhi S, Dahm P. Ureteral stent versus no ureteral stent for ureteroscopy in the management of renal and ureteral calculi. *Cochrane Database Syst Rev.* 2019;2(2);CD012703.

Delayed Orgasm From Lumbosacral Disc Disease: Role of the Urologist

Irwin Goldstein, MD

Alvarado Hospital, San Diego, California

Barry R. Komisaruk, PhD

Rutgers University, Newark, New Jersey

Urologists should be knowledgeable regarding contemporary pathophysiology and management strategies for female and male patients with complaints of delay in orgasm. Delayed orgasm may be considered an unwanted, atypically long latency during most sexual activity despite adequate sexual stimulation, causing significant distress to the individual and/or partner, persisting for at least 6 months.¹⁻⁴ The prevalence of delayed orgasm is approximately 10%.⁵⁻⁷ It often causes frustration, decreased libido, anxiety, depression, and/or difficulties in partnered relationships. Delayed orgasm is a multifactorial, biopsychosocial sexual dysfunction. Pharmacologic, endocrinologic, and neurologic biologic mechanisms have been identified as associated with delayed orgasm.

Five anatomical regions with possible neurologic pathology that could trigger various sexual dysfunctions have been described previously.⁸ The locations include Region 1: end organ; Region 2: pelvis/perineum; Region 3: cauda equina; Region 4: spinal cord; and Region 5: brain.⁸ This report reviews the urological management of patients with delayed orgasm from neurologic pathophysiology secondary to lumbosacral disc disease, Region 3.¹⁻⁴ The mechanism of the delay in orgasm is likely secondary to the interference in the cauda equina with the genital sensory trajectory to the

brain. In these patients, 1 or more herniated intervertebral discs (ie, annular tear) have been identified on lumbosacral MRI. The tear in the annulus of the disc enables the nucleus pulposus to extrude into the epidural space, thereby impinging on and inflaming the dura surrounding the sacral nerve roots. This compression and irritation of sacral nerve roots, called sacral radiculopathy, compromises the transmission of sensory activity, originating in the genital region, via the ascending pudendal and pelvic nerves.⁹

Either genital hypersensitivity or genital hyposensitivity, both associated with lumbosacral disc disease, can result in delayed orgasm. The mechanism of delayed orgasm in genital hypersensitivity is interference with the pattern of sensory stimulation necessary to recruit the high intensity rhythmical neural activity required to initiate orgasm (Figure 1). Over time, through a neural excitotoxic process, the hypersensitivity may undergo neuronal “burnout,” converting to decreased genital sensation (hyposensitivity).⁸ Genital hyposensitivity may be associated with insufficient afferent activity needed to activate appropriate neurologic excitation to elicit orgasm with the typical latency.

The urologist should understand neuroanatomy and neurophysiology of orgasm. Orgasms are predominantly elicited by genital mechanical stimulation activating sensory (afferent) pathways of the pudendal, pelvic, hypogastric, and, at least in women, vagus nerves (Figure 2).¹⁰ The pudendal (somatic) nerve is comprised of the dorsal, perineal, and inferior hemorrhoidal nerve branches which convey sensation from the genital, perineal, and perianal skin surface, passing through the pelvis/perineum into the sacral foramina S2-S4. The pelvic (visceral) nerve, comprised of 12 branches from the internal genito-pelvic organs, passes through the pelvis, also entering the sacral foramina at S2-S4. Pudendal and pelvic nerves join with sciatic nerve branches entering at S2-S3, forming sacral nerve roots that ascend, in the cauda equina, synapsing first in the sacral cord

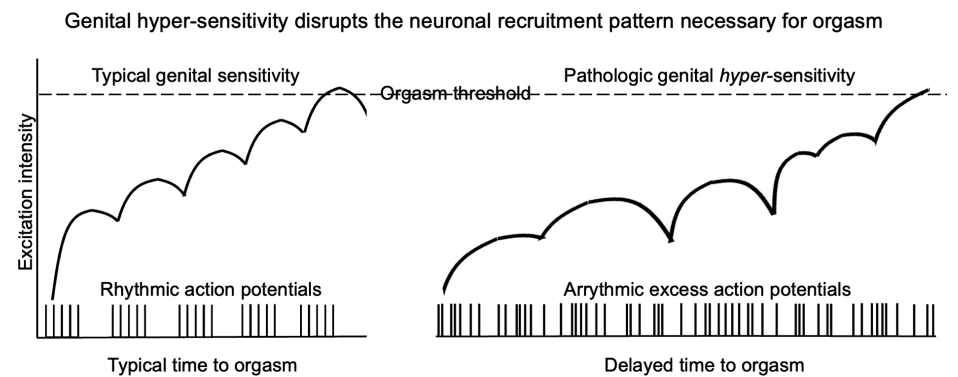


Figure 1. This represents the imbalance between excitation and inhibition that occurs during delayed orgasm. Delayed orgasms could be due to excessively low levels of neuronal excitation and/or excessively high levels of inhibition. In the case of hyperfunction, delayed orgasm could result from disrupted patterns of adequate afferent activity.

(conus medullaris), and in the dorsal column system, synapsing first in the medulla oblongata. Postsynaptic afferent activity ascends, synapsing in the lower brainstem, thalamus, and sensory cortex, activating critical limbic system components involved in orgasm.

The genital neurologic system typically utilizes rhythmic stimulation (thrusting), long known to induce recruitment and synchronicity of neural elements.^{11,12} This is most likely the process that induces the high intensity of neural excitation and electroencephalogram rhythmicity characteristic of orgasm.¹³ As the intensity of neuronal excitation increases, neuronal inhibition increases concurrently. This duality enables the excitation to increase in intensity, preventing the intensity of excitation from becoming aversive, culminating in orgasm (Figure 3).^{14,15}

We herein report management of 2 patients with delayed orgasm, both of whom were diagnosed by a urologist and referred to a spine surgeon.¹⁶ The first patient, a 37-year-old former figure skater, presented to the urologist with genito-pelvic dysesthesia from genital hypersensitivity. She experienced unwanted arousal sensations from her labia (perineal nerve branch of the pudendal nerve, S2-S4), clitoris (dorsal nerve branch of the pudendal nerve, S2-S4), and vagina (visceral afferent pelvic nerve branch, S2-S4), with symptoms temporarily relieved by orgasm. At the time of presentation, orgasms were becoming progressively more delayed, and therefore less able to temporarily reduce her symptoms. She reported multiple falls onto her tailbone while skating, further describing left

→ Continued on page 23

“Either genital hypersensitivity or genital hyposensitivity, both associated with lumbosacral disc disease, can result in delayed orgasm.”

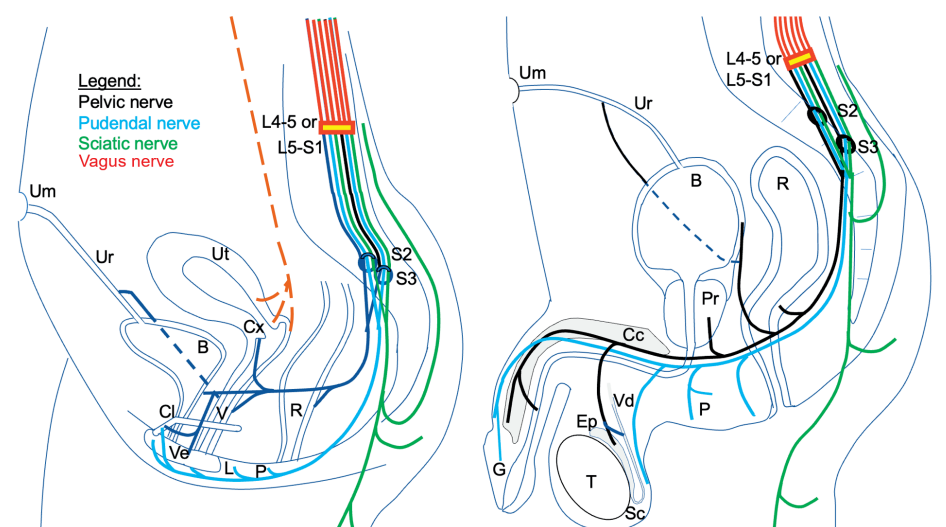


Figure 2. Schematic representation of the genito-pelvic regions that contribute to the 4 nerves. There is evidence of genital sensory innervation in women by the vagus nerve but, to our knowledge, not in men. Adapted with permission from Goldstein et al, *Sex Med Rev.* 2023;11(3):151-155.¹⁷

DELAYED ORGASM FROM LUMBOSACRAL DISC DISEASE: ROLE OF THE UROLOGIST

→ Continued from page 22

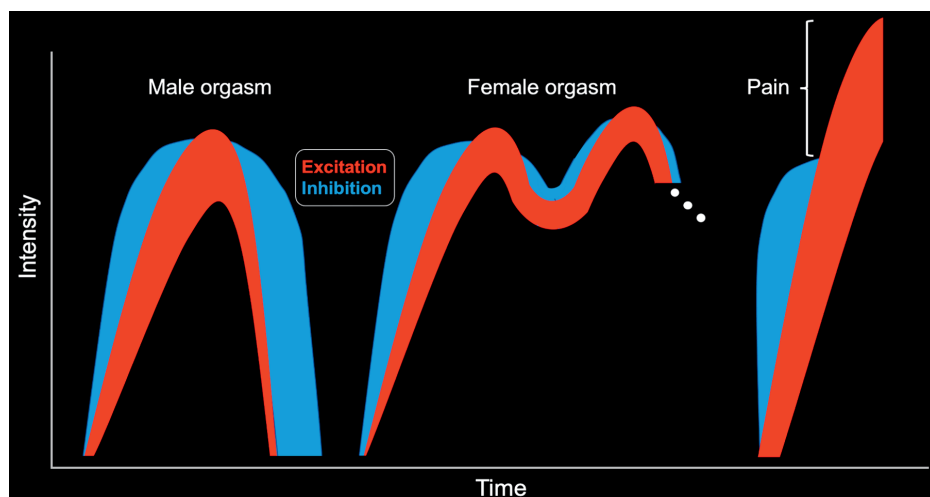


Figure 3. The role of neuronal excitation and inhibition in orgasm and pain. We propose that inhibition actually enables excitation to reach high intensity by preventing it from becoming aversive. However, at the orgasmic climax, the excitation intensity exceeds the inhibition intensity and is just at the verge of aversive intensity. Thus, “characteristic” orgasm in males (left side of figure) occurs as the peak excitation intensity exceeds the inhibition intensity sufficiently to surpass and trigger the high threshold sympathetic autonomic control of ejaculation. This is followed by an intense prolonged neuronal inhibition that abruptly decreases the excitation, thereby generating the refractory period. In comparison, in characteristic female orgasm (mid figure), ejaculation may occur, and the postorgasm inhibition is less intense than in males. Thus, the excitation is not as abruptly decreased as in the male, and it may continue in conjunction with inhibition, even reaching higher subsequent intensity and orgasms in successive waves before decreasing. At the right side of the figure, under conditions in which the excitation level adequately exceeds the inhibition level, the net effect is aversive, perceived as pain.¹⁴

leg sciatica (sciatic nerve S2, S3) that worsened in specific positions. The urologist suspected sacral radiculopathy due to the confluence of symptoms involving sensory fields of the pudendal, pelvic, and sciatic nerves. The lumbar MRI revealed an annular tear (L4-L5). Subsequent neurogenital testing performed by the urologist identified an abnormal pattern consistent with cauda equina pathology.^{8,9} Regional anesthesia testing of the clitoris and pudendal nerve did not reduce symptoms.^{8,9} The spine surgeon ordered a transforaminal epidural spinal injection

that not only resulted in a temporary clinically significant reduction of symptoms but improved latency and intensity of orgasm. She underwent lumbar endoscopic spine surgery in 2017, and at 5-year follow-up she continues to experience orgasm with shorter, typical latency without genito-pelvic dysesthesia symptoms.

The second patient presented as a 69-year-old complaining of delayed orgasm that had worsened acutely over the last few months. He now experienced orgasm with intercourse only rarely, with a latency greater than 20 minutes, con-

sistent with genital hyposensitivity. History-taking revealed he was a lifelong runner, had 9 years of bladder urgency/frequency with multiple negative urine cultures, and dysesthesia in his umbilicus (visceral afferent pelvic nerve branches, S2-S4). He also complained of reduced penile sensation (dorsal branch of the pudendal nerve, S2-S4) and left-side low back pain with left lower extremity sciatica (sciatic nerve S2, S3). The urologist suspected sacral radiculopathy due to the confluence of symptoms that involved the sensory fields of the pudendal, pelvic, and sciatic nerves. A lumbar MRI revealed two annular tears (L4-L5 and L5-S1). Neurogenital tests performed by the urologist, including quantitative sensory testing, sacral dermatome testing, and bulbocavernosus reflex latency testing, were abnormal.^{8,9} The spine surgeon ordered a transforaminal epidural spinal injection that temporarily resulted in 50% improvement (reduction) in orgasm latency and 60%-70% reduction of low back pain. He underwent spine surgery in 2022 and 9 months postoperatively he has marked amelioration of low back pain and shorter orgasm latency, now less than 5 minutes during intercourse. ■

1. Nguyen V, Dolendo I, Uloko M, Hsieh TC, Patel D. Male delayed orgasm and anorgasmia: a practical guide for sexual medicine providers. *Int J Impot Res.* 2023;10.1038/s41443-023-00692-7.
2. Jenkins LC, Mulhall JP. Delayed orgasm and anorgasmia. *Fertil Steril.* 2015;104(5):1082-1088.
3. Martin-Tuite P, Shindel AW. Management options for premature ejaculation and delayed ejaculation in men. *Sex Med Rev.* 2020;8(3):473-485.

4. Sadowski DJ, Butcher MJ, Köhler TS. A review of pathophysiology and management options for delayed ejaculation. *Sex Med Rev.* 2016;4(2):167-176.
5. Hendrickx L, Gijs L, Enzlin P. Age-related prevalence rates of sexual difficulties, sexual dysfunction, and sexual distress in heterosexual women: results from an online survey in Flanders. *J Sex Med.* 2015;12(2):424-435.
6. Hendrickx L, Gijs L, Enzlin P. Prevalence rates of sexual difficulties and associated distress in heterosexual men and women: results from an internet survey in Flanders. *J Sex Res.* 2014;51(1):1-12.
7. Rosen RC. Prevalence and risk factors of sexual dysfunction in men and women. *Curr Psychiatry Rep.* 2000;2(3):189-195.
8. Goldstein I, Komisaruk BR, Pukall CF, et al. International Society for the Study of Women's Sexual Health (ISSWSH) review of epidemiology and pathophysiology, and a consensus nomenclature and process of care for the management of persistent genital arousal disorder/genito-pelvic dysesthesia (PGAD/GPD). *J Sex Med.* 2021;18(4):665-697.
9. Kim CW, Goldstein I, Komisaruk BR, et al. Lumbar endoscopic spine surgery for persistent genital arousal disorder/genitopelvic dysesthesia resulting from lumbosacral annular tear-induced sacral radiculopathy. *J Sex Med.* 2023;20(2):210-223.
10. Komisaruk BR, Whipple B, Crawford A, et al. Brain activation during vaginocervical self-stimulation and orgasm in women with complete spinal cord injury: fMRI evidence of mediation by the vagus nerve. *Brain Res.* 2004;1024(1-2):77-88.
11. Thut G, Veniero D, Romei V, Miniussi C, Schyns P, Gross J. Rhythmic TMS causes local entrainment of natural oscillatory signatures. *Curr Biol.* 2011;21(14):1176-1185.
12. Bronk DW. Synaptic mechanisms in sympathetic ganglia. *J Neurophys.* 1939;2(5):380-401.
13. Cohen HD, Rosen RC, Goldstein L. Electroencephalographic laterality changes during human sexual orgasm. *Arch Sex Behav.* 1976;5(3):189-199.
14. Komisaruk BR, Rodriguez Del Cerro MC. Orgasm and related disorders depend on neural inhibition combined with neural excitation. *Sex Med Rev.* 2022;10(4):481-492.
15. Komisaruk B, Rodriguez Del Cerro MC, Goldstein I. A neurologic excitation/inhibition “faucet model” for orgasm and pain. *Sex Med Rev.* 2023;11(1):1-2.
16. Hägg O, Fritzell P, Nordwall A; The Swedish Lumbar Spine Study Group. Sexual function in men and women after anterior surgery for chronic low back pain. *Eur Spine J.* 2006;15(5):677-682.
17. Goldstein I, Komisaruk BR, Goldstein SW. Zebras also deserve sexual health care. *Sex Med Rev.* 2023;11(3):151-155.

Robot-assisted Bladder Augmentation: Is the Juice Worth the Squeeze?

Tanya Watts Kristoff, MD
University of Chicago, Illinois

Mohan S. Gundeti, MD, MCh,
FEBU, FRCS (Urol) FEAPU
University of Chicago, Illinois

Over the last several decades, robot-assisted techniques have been increasingly used across sur-

gical specialties, with recent wide acceptance and adaptation to pediatric procedures. As with any new technology, there has been constant improvement in techniques for complex pediatric urological reconstructive cases, such as bladder augmentation. The benefits of the robot-assisted approach for pedi-

atric bladder augmentation justify the adaptation of these techniques in experienced hands.

The first completely intracorporeal robotic pediatric ileocystoplasty with appendicovesicostomy was performed in 2008.¹ The utilization of the robotic technique confers the same benefits in the pediatric pop-

ulation as the adult population, including decreased length of hospital stay, decreased pain and opiate requirement, improved cosmesis, and improved surgical tissue handling.^{2,3} At our institution, length of stay has been shown to significantly

→ Continued on page 24

ROBOT-ASSISTED BLADDER AUGMENTATION: IS THE JUICE WORTH THE SQUEEZE?

→ Continued from page 23

“The benefits of the robot-assisted approach for pediatric bladder augmentation justify the adaptation of these techniques in experienced hands.”

improve from 8 days to 6 days with the adoption of the robotic technique for bladder augmentation.^{1,4} Decreasing postoperative opiate requirement and thereby pulmonary sequelae is meaningful in patients with complex medical problems such as kyphoscoliosis and concomitant restrictive lung diseases. Additionally, it has been shown in porcine models that there are fewer postoperative adhesions utilizing the robotic approach, which is meaningful in children with complex pathologies that may require repeated abdominal surgeries throughout their lifetimes.⁵

In addition to the benefits of the robotic approach in pediatric bladder augmentation, outcomes support its efficacy compared to the open approach with expected improvements in bladder capacity and function.^{2,3} While there have been no head-to-head comparisons of complication rates, making outcomes extrapolation flawed, at our institution we have previously reported a 35% 30-day complication rate for the robotic approach compared to 62% with the open approach.³ Data at our institution have shown similar complications rates with regards to bladder rupture, small bowel obstruction, and reaugmentation compared to similarly reported data for the open technique.^{3,6-8} Additionally, the robotic approach decreases the risk of wound dehiscence in patients with high body mass indices compared to the open approach.

Despite the demonstrated safety and efficacy of the robotic bladder augmentation in addition to the benefits of robotic surgery, there has been slow adoption of the robotic

technique for bladder augmentation. This is due to lack of standardized training in pediatric robotic surgery, smaller working spaces and lower tolerance of pneumoperitoneum in children, relatively low case volumes for complex reconstructive pediatric cases, initial long operative times, a historical preference for open techniques in children, and cost efficacy concerns.

There have been numerous prospective and retrospective series that address these concerns. Just as there was an adoption and teaching learning curve with robotic techniques in the adult population, there has exponential adoption and publication of robotic-assisted laparoscopy in pediatric surgery and pediatric urology, thereby facilitating more widespread training in this surgical technique.⁹ Techniques to address pneumoperitoneum and trocar concerns in children have been evaluated and standardized.³

While the robotic approach does take longer than the open approach, the operative times have acceptably improved with enhancements in procedural efficiencies. Data at our institution demonstrate this with initial reports showing the ro-

“While the robotic approach does take longer than the open approach, the operative times have acceptably improved with enhancements in procedural efficiencies.”

botic bladder augmentation (with or without additional procedures such as appendicovesicostomy, bladder neck reconstruction, or antegrade continent enema creation) takes an average of 623 minutes, and later reports showing an average of 573 minutes with the fastest robotic augmentation procedure at 360 minutes.^{1,3,4} This compares to an average of 287 minutes for the open procedure at our institu-

tion and 318 minutes when looking at National Surgical Quality Improvement Program data.¹⁰ It is worth noting that each patient has a unique anatomy and surgical history including ventriculoperitoneal shunts with associated adhesions that may alter operative time on a case-by-case basis. Thus, with increasing experience, this time gap is closing. A similar trend has been seen in the adoption of other similarly complex robotic procedures, such as the radical cystectomy with intracorporeal urinary diversion.¹¹

The cost of robotic surgery is known to be higher than open equivalents due to the cost of the initial purchase of the robotic system, servicing contracts, and various disposal instruments with limited lifetime uses. While no direct cost analyses have been performed with regards to robotic vs open pediatric bladder augmentation, data extrapolated from adult literature and other pediatric urology literature show that robotics is more costly than laparoscopic or open surgery and should be taken into consideration when evaluating best surgical technique at an institution.

The advent of robotic-assisted bladder augmentation, however, will certainly not replace the need to adequately train pediatric urologists in the open procedure. Pediatric patients requiring complex urologic reconstruction often have had multiple abdominal surgeries, which increases the risk of requiring an open conversion secondary to adhesions, or anatomic considerations such as severe kyphoscoliosis that may preclude the ability to perform a robotic surgery or increase the risk of postoperative neuropraxia due to positioning. Proficiency in the open approach in addition to the robotic approach, therefore, remains pivotal for a well-rounded pediatric urologist.

Robotic surgery is increasingly used for complex pediatric urological cases, such as bladder augmentation. Reports indicate similar safety and efficacy to the open technique. The benefits of utilizing a minimally invasive approach such as decreased pain, decreased hospital length of stay, and improved cosmesis have been shown. The robotic technique may decrease com-

“Robotic surgery is increasingly used for complex pediatric urological cases, such as bladder augmentation. Reports indicate similar safety and efficacy to the open technique.”

plications secondary to anatomic concerns such as wound dehiscence with high BMI patients or pulmonary complications in patients with restrictive lung disease. Although improvements in operative time and learning curve are evident, the benefits of the robotic approach should continue to be weighed against cost and operative time. ■

- Gundeti MS, Eng MK, Reynolds WS, et al. Pediatric robotic-assisted laparoscopic augmentation ileocystoplasty and Mitrofanoff appendicovesicostomy: complete intracorporeal-initial case report. *Urology*. 2008;72(5):1144-1147.
- Nguyen HT, Passerotti CC, Penna FJ, et al. Robotic assisted laparoscopic Mitrofanoff appendicovesicostomy: preliminary experience in a pediatric population. *J Urol*. 2009;182(4):1528-1534.
- Adamic B, Kirkire L, Andolfi C, Labbate C, Aizen J, Gundeti M. Robot-assisted laparoscopic augmentation ileocystoplasty and Mitrofanoff appendicovesicostomy in children: step-by-step and modifications to UChicago technique. *BJU Int Compass* 2020;1(1):32-40.
- Murthy P, Cohn JA, Selig RB, Gundeti MS. Robot-assisted laparoscopic augmentation ileocystoplasty and Mitrofanoff appendicostomy in children: updated interim results. *Eur Urol*. 2015;68(6):1069-1075.
- Razmaria AA, Marchetti PE, Prasad SM, et al. Does robot-assisted laparoscopic ileocystoplasty (RALI) reduce peritoneal adhesions compared with open surgery?. *BJU Int*. 2014;113(3):468-475.
- Flood HD, Malhotra SJ, O'Connell HE, Ritchey MJ, Bloom DA, McGuire EJ. Long-term results and complications using augmentation cystoplasty in reconstructive urology. *Neurourol Urodyn*. 1995;14(4):297-309.
- [ref] 7. Schlomer BJ, Saperston K, Baskin L. National trends in augmentation cystoplasty in the 2000s and factors associated with patient outcomes. *J Urol*. 2013;190(4):1352-1358.
- Schlomer BJ, Copp HL. Cumulative incidence of outcomes and urologic procedures after augmentation cystoplasty. *J Pediatr Urol*. 2014;10(6):1043-1050.
- Fernandez N, Farhat WA. A comprehensive analysis of robot-assisted surgery uptake in the pediatric surgical discipline. *Front Surg*. 2019;6:9.
- McNamara ER, Kurtz MP, Schaeffer AJ, Logvinenko T, Nelson CP. 30-Day morbidity after augmentation enterocystoplasty and appendicovesicostomy: a NSQIP pediatric analysis. *J Pediatr Urol*. 2015;11:209e1-209e6.
- Dason S, Goh AC. Contemporary techniques and outcomes of robotic cystectomy and intracorporeal urinary diversions. *Curr Opin in Urol*. 2018;28(2):115-122.

Herbal Supplements for Overactive Bladder: Evaluating the Online Marketplace for Potential Alternatives to Anticholinergics

Igor Inoyatov, MD

NYU Langone Long Island School of Medicine,
Mineola, New York

Joo Lee, MD

NYU Langone Long Island School of Medicine,
Mineola, New York

Anticholinergics are often deployed as the second-line therapeutic option for the management of overactive bladder (OAB) following behavioral and lifestyle modifications. Recently a large pool of data has associated anticholinergic medications with the increased risk of dementia. A nested case-control study of 58,769 patients with a diagnosis of dementia and 225,574 matched controls revealed a statistically significant association of dementia risk with exposure to anticholinergic drugs including common OAB medications after adjusting for confounding variables.¹ Considering such risks, patients and providers may be turned away from the use of anticholinergics in the management of OAB. Patient may find themselves turning to alternative over-the-counter supplements for therapeutic options. It is estimated that about 1 in 6 Americans purchase supplements online without any prescription and the number of Americans ordering online will likely continue to increase.² As a growing population looks to the Internet for these supplements, providers should be aware of the products available on popular online platforms.

We recently reviewed one of the largest online retailers, Amazon.com, to appreciate the variety of products marketed to relieve OAB symptoms. At the time of our review, the Amazon marketplace revealed 147 products, of which there were 65 distinct supplements. Products were filtered for those claiming to relieve “OAB,” “urinary frequency,” and/or “urinary urgency.” Product descriptions were assessed to gather the active ingredients used in the supplements and the top 10 active ingredients were investigated (see Table).

The most reported ingredient was pumpkin seed extract (Figure 1), which was an active ingredient in over 50% of the available products. Pumpkin seed extract contains high concentrations of free fatty acids (oleic, linoleic, palmitic, and stearic), which play a role in maintaining healthy brain function and are thought to help improve OAB symptoms. Specifically, consumption of pumpkin extracts has been shown to help with the sensation of residual urine volume and improve frequent urination and nocturia.³ While the exact mechanism in the use of OAB is unknown, it has historically been used in holistic practices to relieve urinary symptoms. Some theorize pumpkin seed oil increases production of nitric oxide due to high concentration of arginine facilitating relaxation of the bladder.⁴



Figure 1. Pumpkin seed.

Nishimura et al performed an open-label trial to investigate the effects of oil from *Cucurbita maxima*, the main species of pumpkin in Japan, on OAB symptoms in humans. They evaluated 45 volunteers taking 10 g of pumpkin seed oil per day administered for 12 weeks. The OABSS (Overactive Bladder Symptom Score) was compared at 6 and 12 weeks and showed significant improvements across all domains.⁵ This study was limited by a small sample size and nonrandomized design.

Often coupled with pumpkin seed extract, soy germ extract (Figure 2) was the next most reported active ingredient in OAB supplements. Soy germ extract contains large amounts of isoflavones with similar structures and hormonal effects of human estrogen. Estrogen replacement therapy has shown improvement in irritative voiding symptoms in postmenopausal women, bringing interest to soy isoflavones.⁶ In rat models, ovariectomized (estrogen deficient) rats had higher expression of the gap junction protein connexin-43 in the bladder, which induces detrusor overactivity. Soy isoflavone replacement altered connexin-43 expression pattern in the rats’ urinary bladders, suggesting it may play a role in improving the abnormal signaling system of intercellular communication through gap junctions caused by estrogen deficiency.⁷

Shim et al performed the first randomized, double-blind, placebo-controlled study evaluating the efficacy and safety of Cucuflavone



Figure 2. Soybean germ.

(containing extracts of pumpkin seed and soy germ) in 120 subjects suffering from OAB. They showed that after 12 weeks, those taking Cucuflavone showed improvements in urinary frequency, urgency, incontinence, and in OABSS as compared to placebo. Some improvement in both the Cucuflavone and placebo groups is hypothesized to be partly psychological from the feeling of “being helped” than the actual effects of the active ingredients. Similar placebo effects have been observed in several studies involving OAB supplements.⁸

Finally, cranberry (*Vaccinium*) extract (Figure 3) was the third most reported active ingredient in the online marketplace for OAB relief. Often cited as an alternative for urinary tract infection prevention, cranberry supplements have gained significant traction in the female urological health market.

In a single-center, randomized, double-blind placebo-controlled study, researchers investigated the effects 500 g of dried cranberry powder daily during a 24-week period in women with OAB and



Figure 3. Cranberry.

Table. Top 10 Active Ingredients From Our Overactive Bladder Supplement Search on Amazon.com

Ingredient	Percentage of supplements containing ingredient (n=65)
Pumpkin seed extract	50.8
Soy germ extract	20
Cranberry	17
Horsetail aerial parts	12
Lindera	11
Uva ursi	11
Three leaf caper extract	9
Corn silk	9
Marshmallow root	8
L-arginine	8

HERBAL SUPPLEMENTS FOR OVERACTIVE BLADDER

→ Continued from page 25

found participants reported daily micturition decreased by 16.4% and urgency episodes by 57.3%.⁹ The authors were not able to explain the exact mechanism of cranberry supplements for the relief of OAB symptoms.

The Amazon marketplace is constantly evolving and represents only 1 of many online direct-to-consumer platforms without the need for a prescription or discussion with a provider. Pumpkin seed extract appears to be the most popular ingredient being marketed to OAB

patients. While limited studies have shown minimal side effects for most OAB supplements, currently there is no conclusive level 1 evidence to support their use. Patients should be counseled appropriately of the large number of OAB symptom relief products on the market and balance their limited evidence with the risks of currently approved anticholinergic medications. ■

1. Coupland CA, Hill T, Denning T, Morriss R, Moore M, Hippisley-Cox J. Anticholinergic drug exposure and the risk of dementia. *JAMA Intern Med.* 2019;179(8):1084.

2. The Partnership at Drugfree.org. 36 Million Americans have bought medications online without a doctor's prescription. 2018. Accessed July 4, 2023. <https://www.prnewswire.com/news-releases/36-million-americans-have-bought-medications-online-without-a-doctors-prescription-111868434.html>
3. Wichtl M. Cucurbitae semen. Pumpkin seed. In: *Herbal Drugs and Phytopharmaceuticals: A Handbook for Practice on a Scientific Basis*. CRC Press; 2004:170-172.
4. Hood B, Andersson K. Common theme for drugs effective in overactive bladder treatment: inhibition of afferent signaling from the bladder. *Int J Urol.* 2013;20(1):21-27.
5. Nishimura M, Ohkawara T, Sato H, Takeda H, Nishihira J. Pumpkin seed oil extracted from *Cucurbita maxima* improves urinary disorder in human overactive bladder. *J Trad Comp Med.* 2014;4(1):72-74.
6. Cardozo L, Lose G, McClish D, Versi E. A systematic review of the effects of estrogens for

symptoms suggestive of overactive bladder. *Acta Obstet Gynecol Scand.* 2004;83(10):892-897.

7. Okada S, Kojima Y, Hamamoto S, Mizuno K, Sasaki S, Kohri K. Dietary soy isoflavone replacement improves detrusor overactivity of ovariectomized rats with altered connexin-43 expression in the urinary bladder. *BJU Int.* 2009;1429-1435.
8. Shim B, Jeong H, Lee S, Hwang S, Moon B, Storni C. A randomized double-blind placebo-controlled clinical trial of a product containing pumpkin seed extract and soy germ extract to improve overactive bladder-related voiding dysfunction and quality of life. *J Func Foods.* 2014;8:111-117.
9. Cho A, Eidelberg A, Butler DJ, et al. Efficacy of daily intake of dried cranberry 500 mg in women with overactive bladder: a randomized, double-blind, placebo controlled study. *J Urol.* 2021;205(2):507-513.

On the Evolution of the Urological Species

Michael Schwartz, MD

Smith Institute for Urology, Zucker School of Medicine, Hofstra/Northwell, New York, New York

Hollie Brown, MD

Smith Institute for Urology, Zucker School of Medicine, Hofstra/Northwell, New York, New York

Louis R. Kavoussi, MD

Smith Institute for Urology, Zucker School of Medicine, Hofstra/Northwell, New York, New York

The residency match process was born in 1952 with a mission “To match healthcare professionals to graduate medical education and advance training programs through a process that is fair, equitable, efficient, transparent and reliable.”¹ Urology adopted this mechanism for filling residency positions in 1985.² It is notable that the match process focuses on candidates and programs, not on patients or, more specifically, the skills and characteristics that patients want in their physician-surgeon. The competitive nature of our subspecialty has provided opportunity to select amongst the absolute best candidates. Debate has arisen surrounding which data to use in candidate selection as historically used metrics are evaporating or being realized as bootless. In consideration of all stakeholders and contemporary culture there is a need to reassess our traditional procedure.

Selection metrics have historically relied upon performance on the USMLE (United States Medical Licensing Examination) exams, medical school grades, in-person interviews, and recommendation

letters. The National Board of Medical Examiners has eliminated scores from USMLE Step 1. Many medical schools have eliminated grades from preclinical courses, and some are adopting this practice for clinical rotations. Additionally, there is a lack of standardization among schools regarding what a given grade means with grade inflation in some and a paucity of differentiators in others.^{3,4} Letters of recommendation can also be difficult to interpret as there rarely are negative comments and the reader is left to assess degrees of approbation. Moreover, structured and unstructured interviews by faculty not trained in such processes are notoriously unreliable.^{5,6} Further clouding this process is the elimination of in-person candidate meetings in the aftermath of COVID. Programs are left with a system that poorly differentiates students in conjunction with the anodyne comfort of the traditional interview process.

How can our specialty continue to attract and cull the best candidates? It begins with what highly successful companies do when hiring: define what skills are needed for the job. There is no universal definition of qualities that are essential to create the ideal urologist. However, we can likely all agree that there are factors like intelligence, communication, problem solving, morality, and technical abilities to consider. It cannot be assumed that these are adequately

screened for during the premedical process. Current urologists are products of this system and thus we accept that the general student enrolled in a medical school fulfills the basic needs criteria. The nature and methodology by which students are selected vary among schools. Interestingly, most focus upon undergraduate grades and Medical College Admission Test scores with ambiguous screening of additional important characteristics. There is irony in medical schools relying on grade metrics and not providing similar information to residency programs. Moreover, as students spend most of their schooling with cognitive practitioners, one questions the current methods of preparation for a surgical specialty.

After defining criteria, successful businesses objectively judge candidates on skills needed for the job. Organized urology must delineate methodology that accomplishes this goal. As such, specific testing needs to be created that evaluates each student's potential to become the best urologist to serve society. For example, Bethel and associates utilized Lego exercises to assess team-based tasks.⁷ Our group in New York has utilized origami in a similar fashion to assess communication. There should also be a focus on identifying students with technical proclivity as patients want treatment from highly skilled surgeons. To provide this for society, there must be a focus

on technical assessment. Over the years, the opportunity for independent surgical experience during residency has decreased. Regulations mandating strict oversight and work hour restrictions coupled with financial pressures on faculty to complete cases quickly have contracted hands-on learning opportunities. Many residents are electing to prolong training by taking fellowships to gain technical skill. Candidates with innate ability would require less resources to achieve the level of excellence patients expect. Shortening training could also help reduce current workforce shortages.

The Association of American Medical Colleges should embrace the importance of introducing early surgical training for those who show interest. Indeed, medical schools should investigate a parallel cultural and technical tract for individuals interested in a surgical career. This needs to include early intense skills training through all years as opposed to the current system where it is completely relegated to residency training. The AUA Boot Camp is an initial expedition in providing basic standard skills. This may serve as a template for collaborations among surgical specialties to create longitudinal parallel training during the entirety of medical school.

→ Continued on page 27

ON THE EVOLUTION OF THE UROLOGICAL SPECIES

→ Continued from page 26

It is time to reassess our process for educating future surgeons and how we connect those individuals with graduate education programs. Urology should seize upon the opportunities provided by traditional data loss to ensure and improve upon the high quality of care our specialty provides. The goals of reengineering should align with all stakeholders including students, programs, patients, and society.

The process involves defining core traits needed to be our best and creating a standardized, holistic methodology for appraising technical and non-technical skills. Deriving a solution requires the dedication of organizations such as the AUA and Society of Academic Urologists to take an active lead in identifying and mining meaningful assessment tools. Significant effort will be needed to overhaul the system

as well as wean traditional beliefs about the current process that were created well before our candidates were born. ■

1. National Resident Matching Program. *About Us*. Accessed August 4, 2023. <https://www.nrmp.org/about/>
2. Weissbart SJ, Stock JA. The history and rationale of the American Urological Association residency matching program. *Urol Pract*. 2014;1(4):205-210.
3. Visingardi JV, Inouye BM, Feustel PJ, Kogan BA. Variability in third-year medical student clerkship grades. *J Urol*. 2022;208(5):952-954.

4. Association of American Medical Colleges. *Curriculum Reports*. Accessed August 4, 2023. <https://www.aamc.org/data-reports/curriculum-reports/data/grading-systems-used-medical-school-programs>
5. Tuff G, Goldbach S, Johnson J. When hiring, prioritize assignments over interviews. *Harvard Business Review*. September 27, 2022. <https://hbr.org/2022/09/when-hiring-prioritize-assignments-over-interviews>
6. Bohnet I. How to take the bias out of interviews. *Harvard Business Review*. April 16, 2016. <https://hbr.org/2016/04/how-to-take-the-bias-out-of-interviews>
7. Bethel EC, Marchetti KA, Hecklinski TM, et al. The LEGO™ exercise: an assessment of core competencies in urology residency interviews. *J Surg Educ*. 2021;78(6):2063-2069.

Oral Testosterone Replacement Therapy: What's Available and What Took so Long?

Babak K. Azad, MD
University of California, Irvine

Faysal A. Yafi, MD, FRCSC
University of California, Irvine

Introduction

The field of testosterone replacement therapy (TRT) has witnessed remarkable growth and demand in recent years. While injectable and topical forms remain popular, other types of TRT including oral testosterone have been rapidly growing. Studies in cancer treatment have shown patients exhibiting an overall preference for oral therapy over other regimens, as oral TRT offers a convenient alternative that might improve various aspects of patients' lives.¹

Innovations in Oral Testosterone Formulations

Over the years, researchers have developed various oral testosterone formulations aimed at ensuring reliable absorption into the system. Traditional methyltestosterone, belonging to the previous generation of oral testosterone, raised serious concerns of liver toxicity associated with 17-alkylated testosterone delivery through the portal system. Consequently, oral nonalkylated undecanoate testosterone entered the scene, utilizing intestinal and lymphatic absorption routes to avoid the first pass. Despite the presence

of insurance coverage issues in some cases and reports of gastrointestinal intolerance with the new generation, the primary limitation stems from unstable bioavailability. Formulations of this type enable the solubilization of highly lipophilic molecules absorbed after oral ingestion with food, and to optimize efficacy, patients are advised to consume the oral testosterone pill with a meal containing at least 19 g of fat.²

Tracing the Evolution of Undecanoate Oral TRT: From the Past to Present

This article delves into the evolution of undecanoate oral TRT, exploring notable formulations and their corresponding findings. By examining the journey from the release of the first medication to the current state, we aim to shed light on the latest understanding and offer insights into the future of oral TRT options.

The Emergence of Oral TRT

In the early 1970s, the concept of oral TRT began to take shape. However, its availability in the United States was limited due to frequent dosing requirements and concerns for liver toxicity. Over time, researchers and pharmaceutical companies made remarkable progress, leading to the development of formulations that showed promising results.

Jatenzo

One of the groundbreaking developments in oral TRT came with the introduction of Jatenzo. In a randomized study conducted by Swerdloff et al in 2018, Jatenzo was compared to a topical testosterone product in hypogonadal men aged 18 to 65.³ The study revealed that 87% of patients in both groups achieved mean serum testosterone levels within the eugonadal range (mean±SD 489±155 ng/dL). Safety profiles were similar, except for a slight increase in systolic blood pressure (3 to 5 mm Hg) associated with oral testosterone undecanoate.

Tlando

Another notable formulation, Tlando, is a lipophilic molecule primarily absorbed into the lymph system after oral administration. Following an initial dose-finding study, a dose validation study was conducted using a fixed dose of 225 mg twice daily of Tlando, with 80% of subjects attaining testosterone levels within the eugonadal range (mean±SD 476±184 ng/dL) while maintaining an impressive overall mean compliance of 99.7%. A blood pressure box warning was similarly issued for Tlando, and this drug has been associated with increases in prolactin (cause unknown).⁴

Kyzatrex

Incorporating phytosterol esters in gelatin capsules, Kyzatrex

offered a starting dose of 200 mg twice daily, with subsequent dose adjustments on days 28 and 56. Studies demonstrated that nearly all subjects achieved mean 24-hour total testosterone levels within the normal range (222-800 ng/dL). Additionally, while the mean change from baseline in systolic blood pressure was minimal (1.7 mm Hg), this also led to a blood pressure box warning.⁵

Looking Ahead

The market now boasts a wide range of commercially available TRT options, including novel oral formulations with favorable safety profiles and no liver toxicity concerns. However, it remains crucial to monitor blood pressure in patients prescribed oral TRT. ■

1. Eek D, Krohe M, Mazar I, et al. Patient-reported preferences for oral versus intravenous administration for the treatment of cancer: a review of the literature. *Patient Prefer Adherence*. 2016;10:1609-1621.
2. Schnabel PG, Bagchus W, Lass H, Thomsen T, Geurts TP. The effect of food composition on serum testosterone levels after oral administration of Andriol® Testocaps®. *Clin Endocrinol (Oxf)*. 2007;66(4):579-585.
3. Swerdloff RS, Wang C, White WB, et al. A new oral testosterone undecanoate formulation restores testosterone to normal concentrations in hypogonadal men. *J Clin Endocrinol Metab*. 2020;105(8):2515-2531.
4. DelConte A, Papangkorn K, Kim K, et al. A new oral testosterone (TLANDO) treatment regimen without dose titration requirement for male hypogonadism. *Andrology*. 2022;10(4):669-676.
5. White WB, Bernstein JS, Rittmaster R, Dhingra O. Effects of the oral testosterone undecanoate Kyzatrex™ on ambulatory blood pressure in hypogonadal men. *J Clin Hypertens*. 2021;23(7):1420-1430.

The Evolving Workforce and the Effects on Urinary Symptoms and Toileting Behaviors

Elisabeth M. Sebesta, MD
Vanderbilt University Medical Center,
Nashville, Tennessee

W. Stuart Reynolds, MD, MPH
Vanderbilt University Medical Center,
Nashville, Tennessee

Introduction

Only 20% of what influences health outcomes is related to health care. The remaining 80% is made up of nonmedical influences, or social determinants/drivers of health (SDOH). Every person has SDOH, which are not inherently positive or negative, but can negatively influence health outcomes. Employment is one such SDOH and is multifaceted, including finding/keeping a job, occupation, productivity, schedule, work environment, job physicality, and work-related stress, and influences economic stability. Overall, the workforce is also evolving, especially in the COVID-19 era, toward decentralization, which includes more short-term and remote work. Therefore, the impact of lower urinary tract symptoms (LUTS) on employment and how occupation impacts bladder health and toileting behaviors are fascinating, unique, and important relationships to consider.

LUTS and the Workplace

Urological conditions and worse LUTS are associated with lower employee attendance, decreased productivity, and increased rates of unemployment due to disability.¹ The negative impact on productivity is multifactorial, including days lost to medical absenteeism and restricted functioning, and interference with work life due to LUTS. Additionally, more severe overactive bladder has been associated with difficulty finding and keeping employment and with lack of transportation, which indirectly impacts job availability and choice.² Likewise, LUTS may influence employment decisions, including earlier retirement, and choice of work location and schedule. Certain occupations have been associated with LUTS and adaptive toileting

“Therefore, the impact of lower urinary tract symptoms (LUTS) on employment and how occupation impacts bladder health and toileting behaviors are fascinating, unique, and important relationships to consider.”

behaviors, which could have negative long-term impacts on bladder health. Nursing and health care professions have a higher prevalence of LUTS.³ Infrequent voiders syndrome (nurse’s bladder) refers to bladder dysfunction due to suppressing the desire to void for long periods of time. This adaptive behavior may develop due to workplace restrictions, such as insufficient breaks, time-pressure demands, and heavy workloads, or due to the social framework in health care of “patient first,” resulting in self-imposed restrictions on personal time, including bathroom breaks. The same applies to other occupations with restricted bathroom breaks and distance to a toilet (teaching, factory work, truck driving, etc). Gatekeepers in the workplace limiting bathroom use can be people (supervisors/managers) or concepts (breaks), but encourage purposeful urine holding, delayed voiding, fluid restriction, defensive voiding, and other unhealthy toileting behaviors. Finally, workplace restrooms are public restrooms, and women who limit restroom use at work due to concerns with cleanliness and lack of privacy are more likely to experience LUTS and poorer perceived bladder health.^{4,5}

Short-term Work, Long-term Effects

Most existing literature considers the traditional workplace a public space away from home. However, short-term work is becoming increasingly common. Specifically, the gig economy (digital platforms to connect people with short-term, freelance, on-demand jobs) has grown exponentially. The recent rise of the gig economy, particularly during and after the pandemic, expanded opportunities for people to make money. Due to disruption of the workplace and loss of employment during the pandemic, more people pursued gig work for supplemental or primary income. It is now estimated that nearly 60 million Americans work in the gig economy,⁶ which is only anticipated to increase. Gig jobs utilize a performance-based pay scheme to incentivize efficiency and productivity; however, this has also been linked to poorer physical and mental health outcomes.⁷ Additionally, gig jobs require constant travel and lack reliable restroom access. This may encourage negative adaptive behaviors and unhealthy coping mechanisms and toileting habits, and increase job-related stress. In our own evaluation of bladder symptoms in gig workers, those who reported at least some bladder problems were more likely to purposefully limit restroom use while working and delay voiding to the point of strong urgency or even incontinence.⁸ Common coping strategies utilized included carrying a change of clothes, using incontinence products while on the job, and fluid restriction. The long-term implications of these strategies and toileting behaviors are unknown but may lead to increased LUTS as seen in other jobs which promote holding (nurse’s bladder). Additionally, gig workers with LUTS may have a decrease in work productivity, which in a performance-based pay scheme means lower pay and possible economic instability.

Other Impacts of the Covid-19 Pandemic on the Evolving Workforce

The expanding gig economy is only 1 example of the decentralization of the workplace that occurred with the COVID-19 pandemic. Another is remote work, which has markedly increased in the COVID era, with 70% of people now working remotely at least weekly.⁹ Unlike the constant travel of gig jobs, remote work has led to people working from home with consistent access to private home toilets. One could hypothesize this may mitigate some of the negative adaptive behaviors used in the workplace. Anecdotally, we have found not necessarily a decrease in LUTS, but less bother from LUTS when working from home, and therefore less desire to pursue medical or surgical treatment. Conversely, when a person must return to a public work setting after working from home, bother from bladder symptoms may increase and lead to overall poorer perceived bladder health.

In recent times, there has been decreased net demand for lower- and middle-income jobs (such as those in customer service, retail, hospitality, and food service), with increasing use of technology, automation, and globalization. During the pandemic, these lower-income workers were disproportionately affected by job loss. Therefore, job instability more often affected vulnerable populations, such as those with lower socioeconomic status, lower levels of educational attainment, younger people, women, and those of non-White race and/or ethnicity, who may also be more affected by urological conditions, including overactive bladder, incontinence, urinary tract infections, and more severe LUTS.^{10,11} Pandemic job instability could thereby exacerbate or augment these associations, potentially worsening bladder symptoms. The pathways

THE EVOLVING WORKFORCE AND THE EFFECTS ON URINARY SYMPTOMS AND TOILETING BEHAVIORS

→ Continued from page 28

here are multifactorial and bidirectional due to barriers to accessing care and increase in chronic stressors and other comorbid conditions, additional unmet social needs, or a greater overall burden of urinary symptoms.

Conclusions

Occupation, employment, and the workplace can have significant impacts on bladder health, urological conditions, and toileting behaviors. The traditional office-based workplace is ill-equipped for the toileting needs of those with urinary conditions or LUTS, due to few toilets per employee and/or restrictions on bathroom access or breaks. This leads to decreased

work productivity, higher unemployment rates, and difficulty keeping a job, which affects economic stability. During and following the COVID-19 pandemic, the workforce has experienced dramatic changes with job loss disproportionately impacting those in the lowest income occupations, a shift to a decentralized workplace with more working from home, and growth in short-term employment, including the gig economy. These changes undoubtedly have impacts on overall physical and mental health, which includes LUTS and toileting behaviors. It is still unknown, however, the overall negative impact that adaptive toileting and coping behaviors may have on long-term bladder health. Continuing to

investigate these impacts and associations as the workforce continues to evolve will be important to understand and manage urological conditions into the future. ■

1. Coyne KS, Sexton CC, Kopp ZS, Ebel-Bitoun C, Milsom I, Chapple C. The impact of overactive bladder on mental health, work productivity and health-related quality of life in the UK and Sweden: results from EpiLUTS. *BJU Int*. 2011;108(9):1459-1471.
2. Tellechea L, Zuo S, Kohn JR, et al. The effect of social determinants of health on overactive bladder symptom severity. *J Urol*. 2021;205(5):1415-1420.
3. Markland AD, Richter HE, Fwu CW, Eggers P, Kusek JW. Prevalence and trends of urinary incontinence in adults in the United States, 2001 to 2008. *J Urol*. 2011;186(2):589-593.
4. Reynolds WS, Kowalik C, Delpe SD, Kaufman M, Fowke JH, Dmochowski R. Toileting behaviors and bladder symptoms in women who limit restroom use at work: a cross-sectional study. *J Urol*. 2019;202(5):1008-1014.
5. Reynolds WS, Kowalik C, Kaufman MR, Dmochowski RR, Fowke JH. Women's perceptions of public restrooms and the relationships with toi-

leting behaviors and bladder symptoms: a cross-sectional study. *J Urol*. 2020;204(2):310-315.

6. Gitis B, Holtz-Eakin D, Rinehart W. *The Gig Economy: Research and Policy Implications of Regional, Economic, and Demographic Trends*. 2017. <https://www.aspeninstitute.org/publications/the-gig-economy-research-and-policy-implications>
7. Davis ME, Hoyt E. A longitudinal study of piece rate and health: evidence and implications for workers in the US gig economy. *Public Health*. 2020;180:1-9.
8. Chisholm LP, Bhalla R, Gleicher S, Dmochowski R, Reynolds WS, Sebesta E. M29 Short-term work, long-term effects: examining toileting behaviors and bladder health in gig economy workers. *Neurourol Urodyn*. 2023;42(Suppl 1):S126-S128.
9. Lund S, Madgavkar A, Manyika J, et al. *The Future of Work After COVID-19*. McKinsey Global Institute; 2021:18
10. Sebesta EM, Gleicher S, Kaufman MR, Dmochowski RR, Reynolds WS. Associations between unmet social needs and overactive bladder. *J Urol*. 2022;208(5):1106-1115.
11. Zwaschka TA, Sebesta EM, Gleicher S, Kaufman MR, Dmochowski RR, Reynolds WS. The cumulative effect of unmet social needs on noncancerous genitourinary conditions and severity of lower urinary tract symptoms. *Neurourol Urodyn*. 2022;41(8):1862-1871.

Ureteral Stent Encrustation: What It Is, How to Treat, What Has Been Done, and Where We Are Now

Daniela Díaz Rubayo, MD

UMass Chan Medical School, Worcester, Massachusetts

Igor Sorokin, MD

UMass Chan Medical School, Worcester, Massachusetts

Kevan Sternberg, MD

UMass Chan Medical School, Worcester, Massachusetts

Ureteral stents were first described in 1949 and continue to be one of the most commonly used tools among urologists. However, as much as they reduce risk of obstruction after instrumentation and decompress the urinary tract, they do not come free of complications. In >80% of patients, stents have been associated with patient discomfort, infection, and encrustation.¹

Stent encrustation is a common and complex complication associated with ureteral stents. It is defined as deposition of crystals and minerals from the urine on the ureteral stent's inner and outer surfaces. Risk of encrustation directly correlates with length of treatment, with signs of encrustation seen in 9% of patients after

6 weeks and 77% of patients after 12 weeks.^{2,3} It has also been proposed that biofilm formation and bacterial adhesion have a role in the mechanism of encrustation. On placement, all stents become coated with a conditioning film formed by urinary proteins and ions that promote adhesion of bacteria onto the stent's surface (see Figure). This, due to either the biofilm's net positive charge attracting negatively charged crystals or calcium-binding proteins that allow crystals to directly bind to stents, is thought to stimulate stent encrustation.⁴ Other patient-specific contributing factors include history of urolithiasis, cancer, malabsorptive syndromes, and forgotten stents in

“Stent encrustation is a common and complex complication associated with ureteral stents.”

patients with poor compliance or low health literacy.

Standard KUB is often sufficient to diagnose the extent of encrustation while CT should be used for surgical planning for more severely encrusted cases. Geavlete et al reported 832 cases of stent encrustation in a review of 50,000 endourological procedures over 25 years.⁵ The authors found the most common location of encrustation was the distal curl alone in 432 (52%) cases, followed by both proximal and distal curls in 235 (28%) cases, and encrustation of the entire stent in 112 (12%) cases. It was rare to find proximal curl encrustation alone (3.1%), distal curl with stent shaft (3%), or stent shaft alone (2 cases).

Grading systems have been developed to assess the severity of encrustation, like the FECal (forgotten, encrusted, calcified) and KUB systems, classifying into either mild (<5 mm, <50% stent encrustation) or severe (≥5 mm, ≥50% encrustation).² In milder cases, cystoscopic removal is usually successful. In severe cases, a

multimodal, staged approach with cystolitholapaxy, extracorporeal shock wave lithotripsy, ureteroscopy, percutaneous nephrolithotomy, or pyelolithotomy is typically used to target the distal curl, stent shaft, and proximal curl stone. Nephrectomy has been performed for severe cases where kidney function has been compromised. Avoiding excessive force when extracting a stent is imperative, as stents may break from loss of tensile strength and potentially cause ureteral injuries or avulsions.

The most common stents are made of nondegradable polymeric and metallic materials such as silicone and/or polyurethane. There have been different approaches to prevent stent encrustation including different stent materials, coatings, and medical treatment to change urine's pH and composition.

Coated Stents

- Heparin-coated stents initially showed some promise with

→ Continued on page 30

URETERAL STENT ENCRUSTATION

→ Continued from page 29

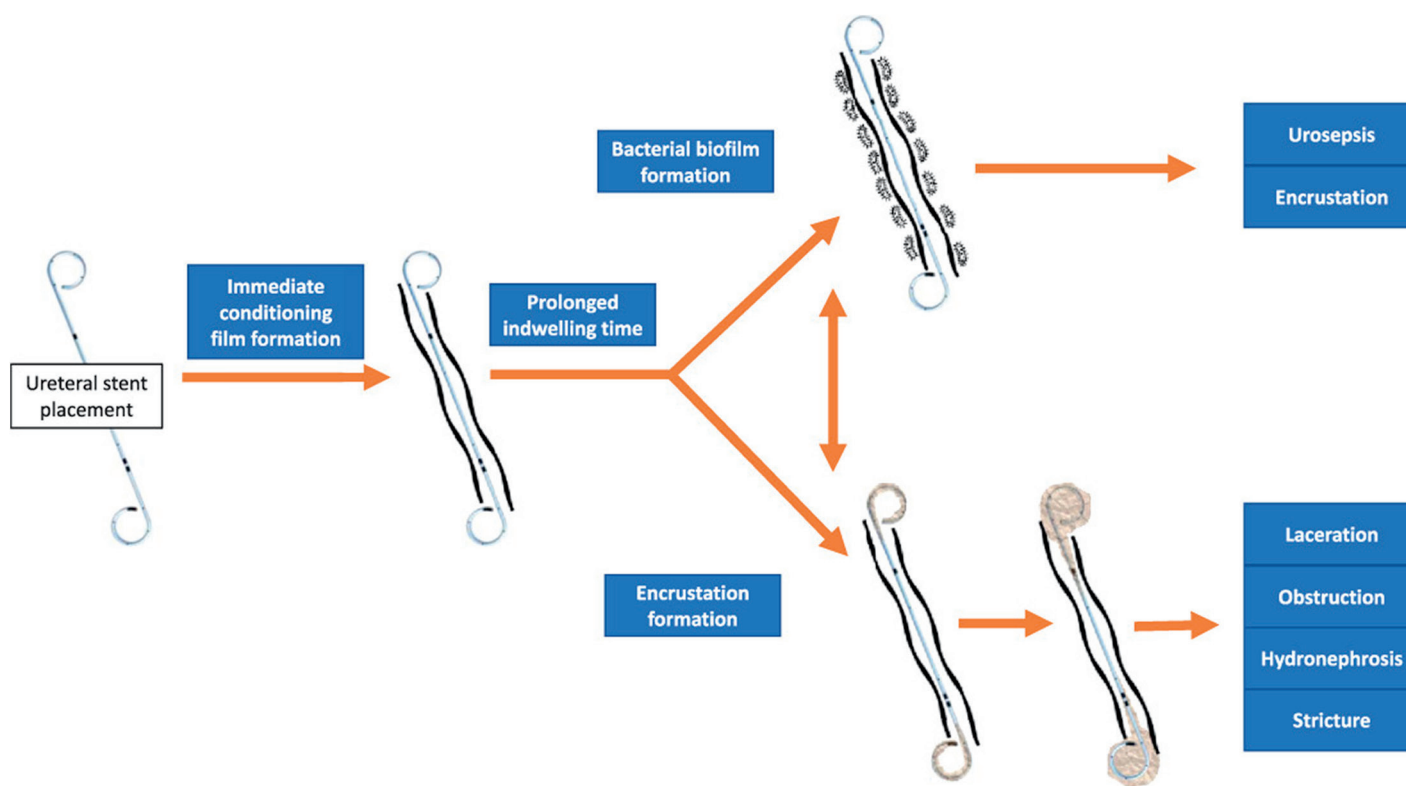


Figure. Mechanism of stent encrustation. Reprinted with permission from Tomer et al, *J Urol.* 2021;205(1):68-77.²

no encrustation within 10-12 months vs 76% encrustation of noncoated conventional stents. However, these data were refuted, and heparin was found to only reduce encrustation in a sterile environment.

“There have been different approaches to prevent stent encrustation including different stent materials, coatings, and medical treatment to change urine’s pH and composition.”

- Triclosan and antibiotic-coated stents were developed with the goal of reducing risk of biofilm formation and urinary tract infection. They were found to have no difference in biofilm formation, encrustation, or infection, and have been deemed unsuccessful due to antibiotic resistance.^{1,2}
- Hydrogel coating consists of a

thin layer of hydrogel capable of absorbing water to prevent bacterial adhesion. However, studies have pointed out that due to absorption of urinary solutes, hydrogel-coated stents could have the same or even higher risk of encrustation.¹

- The Percushield ureteral stent was developed to create a non-ionic, super-smooth, hydrophobic inner and outer surface that reduces the adhesion of calcium and magnesium salts.² In vitro studies using the Percushield stent showed significant reduction in encrustation in artificial sterile and infected urine. Nonetheless, Yoshida et al demonstrated, using micro-CT, that there was no statistical difference in outer or inner surface encrustation between the Percushield stent and the conventional hydrogel-coated surface.⁶
- Silver nitrate- and ofloxacin-coated copolymer stents initially showed decreased biofilm formation in rabbits but failed to yield similar results in clinical trials.²
- Oxalate-degrading enzyme coating showed promise but was never taken to market.²

Stent Design

The creation of a biodegradable stent has been in the works for the

past 20 years but has been halted by manufacturing limitations. Hopefully with the help of new technologies such as 3D/4D printing these limitations might be overcome and a low-cost mass production can be achieved.¹

Medical Treatments

Medical treatments that alter the urinary chemistry could potentially prevent encrustation. Tavosian et al found that potassium citrate can significantly reduce double-J stent encrustation in patients with urolithiasis.⁷ While this result is encouraging and could be considered as preventive treatment, it does not seem to be a common practice among urologists. Similarly, Yoshida et al found an association between high triglycerides and total cholesterol with an increase in urinary excretion of lithogenic components such as oxalate, calcium, potassium, and chloride while LDLs increased urinary excretion of protective factors such as citrate and magnesium.⁶ This was the first time this relationship was reported, and the effect of treatment of dyslipidemia in patients with expected long-term stent treatment could be an area of research moving forward.

Despite considerable advances in stent technology, the ideal stent that avoids encrustation has not yet been developed. A novel stent may look promising in vitro; however, success has not translated in the clinical setting. Will it be a new stent shape or design, a new stent

“Despite considerable advances in stent technology, the ideal stent that avoids encrustation has not yet been developed.”

coating, an effective biodegradable option, or some combination? Time will tell. Until then, focusing on changes in clinical practice and improved quality initiatives may be the best approach. Ensuring stents are removed in a timely fashion is imperative to avoid the complications associated with stent encrustation. In addition, continued efforts to identify situations where stents are not needed will be an important evolution and change in culture that will benefit the clinical care of this patient population. ■

1. Domingues B, Pacheco M, de la Cruz JE, et al. Future directions for ureteral stent technology: from bench to the market. *Adv Therap.* 2022;5(1):2100158.
2. Tomer N, Garden E, Small A, Palese M. Ureteral stent encrustation: epidemiology, pathophysiology, management and current technology. *J Urol.* 2021;205(1):68-77.
3. el-Faqih SR, Shamsuddin AB, Chakrabarti A, et al. Polyurethane internal ureteral stents in treatment of stone patients: morbidity related to indwelling times. *J Urol.* 1991;146(6):1487-1491.
4. Elwood CN, Lo J, Chou E, et al. Understanding urinary conditioning film components on ureteral stents: profiling protein components and evaluating their role in bacterial colonization. *Biofouling.* 2013;29(9):1115-1122.
5. Geavlete P, Georgescu D, Mulescu R, Stanescu F, Cozma C, Geavlete B. Ureteral stent complications—experience on 50,000 procedures. *J Med Life.* 2021;14(6):769-775.
6. Yoshida T, Takemoto K, Sakata Y, et al. A randomized clinical trial evaluating the short-term results of ureteral stent encrustation in urolithiasis patients undergoing ureteroscopy: micro-computed tomography evaluation. *Sci Rep.* 2021;11(1):10337.
7. Tavosian A, Rahimnia A, Tehranipour E, Khajavi A, Zadeh SST, Yarandi VA. Potassium citrate as a preventive treatment for double-J stent encrustation: a randomized clinical trial. *Transl Res Urol.* 2022;4(1):35-40.

Personalized Prediction of Multimodal Treatment Benefit Using Genomic Testing

Jonathan Tward, MD, PhD
Huntsman Cancer Institute, University of Utah, Salt Lake City

Lauren Lenz, MS
Myriad Genetics, Inc., Salt Lake City, Utah

Alexander Gutin, PhD
Myriad Genetics, Inc., Salt Lake City, Utah

Wyatt Clegg, MS
Myriad Genetics, Inc., Salt Lake City, Utah

Chelsea R. Kasten, PhD
Myriad Genetics, Inc., Salt Lake City, Utah

Jeff Jasper, PhD
Myriad Genetics, Inc., Salt Lake City, Utah

Rob Finch, MS, CGC
Myriad Genetics, Inc., Salt Lake City, Utah

Todd Cohen, MD
Myriad Genetics, Inc., Salt Lake City, Utah

or high-risk localized prostate cancer to reduce the risk of metastasis.¹⁻³ These treatment guidelines are based on clinical trials that have shown treatment benefits for guideline-based cohorts of higher-risk patients.¹⁻³ However, ADT is associated with a broad range of adverse effects⁴ that may impact a patient's willingness to endure RT+ADT. The risks and benefits of treatment using RT+ADT can be evaluated by individual patients and their providers to develop a treatment plan. A systematic meta-analysis including individual patient data from 10,853 clinical trial participants found that addition of ADT to RT significantly improved metastasis-free survival in men with localized prostate cancer and that the treatment effects of ADT were not affected by RT dose, clinical risk group, or age.⁵ Therefore, tools are critically needed to predict the personalized absolute reduction in

Preventing metastasis is a critical goal of treatment in men diagnosed with prostate cancer. Clinical practice guidelines support adding androgen deprivation therapy (ADT) to radiation therapy (RT) in patients with unfavorable intermediate-risk

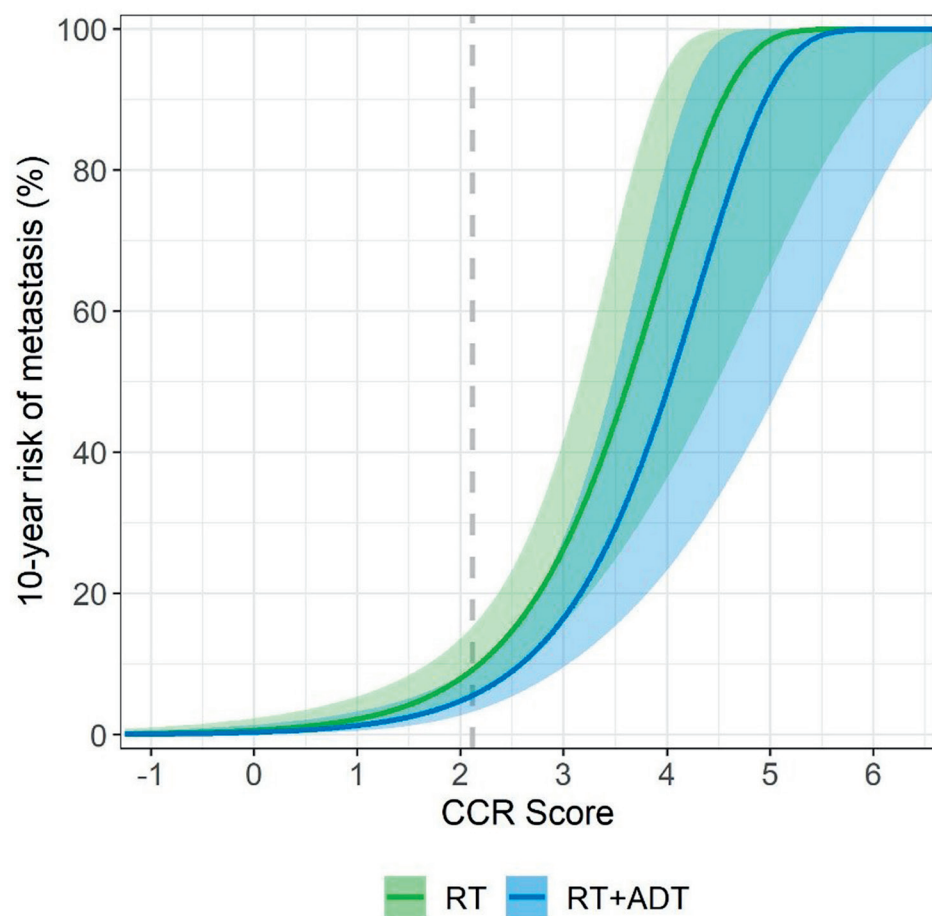


Figure 1. Risk of metastasis as a function of cell-cycle risk (CCR) score in the radiation therapy (RT)-alone cohort compared to the mathematically derived risk with RT + androgen deprivation therapy (ADT) assuming a 41% relative benefit of ADT. The 95% CIs were simulated. The dashed vertical line represents the multimodal treatment threshold at CCR=2.112. Reprinted with permission from Tward JD et al, *J Clin Oncol.* 2023;41(16_suppl):5030.⁹

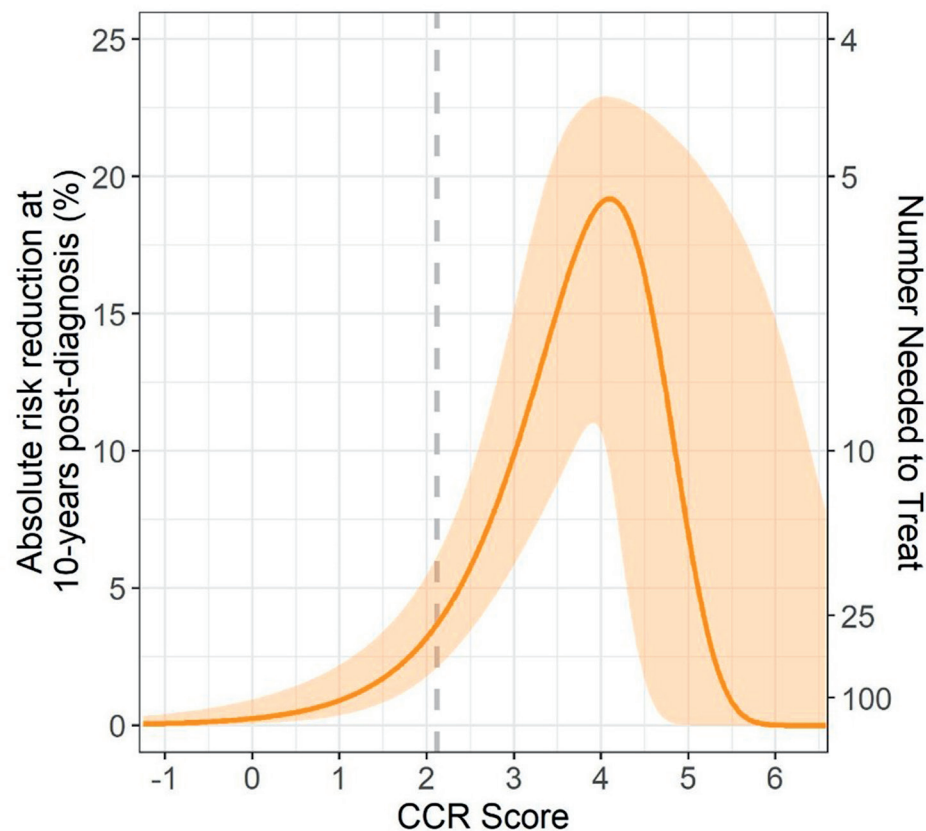


Figure 2. The computationally derived absolute risk reduction from androgen deprivation therapy added to radiation therapy with corresponding number needed to treat as a function of cell-cycle risk (CCR) score, with simulated 95% CIs. The dashed vertical line represents the multimodal treatment threshold at CCR=2.112. Reprinted with permission from Tward JD et al, *J Clin Oncol.* 2023;41(16_suppl):5030.⁹

risk of metastasis from ADT added to RT while minimizing exposure to potential ADT side effects in patients who may not experience meaningful treatment benefit.

Genomic tests like Prolaris provide individualized information that may inform treatment decisions and improve the prognostic accuracy of risk assessment based on clinical disease markers alone.¹⁻³ Prolaris provides a continuous clinical cell-cycle risk (CCR) score, which combines the clinical University of California, San Francisco's Cancer of the Prostate Risk Assessment (CAPRA) with molecular markers of cell-cycle progression designed to determine cancer aggressiveness. The CCR score can inform the individual risk of developing metastatic disease and prostate cancer-specific mortality within 10 years in men with localized prostate cancer who have not received prior intervention.⁶⁻⁸ The CCR score includes validated thresholds to identify patients who are candidates for active sur-

veillance, single-mode treatment, and multimodal treatment. Retrospective data have validated the Prolaris CCR score of 2.112 as a prognostic threshold for identifying patients who may be candidates for single-mode treatment rather than multimodal treatment.^{7,8} However, the value of the continuous CCR score for predicting individual absolute risk reduction from ADT added to RT had not been evaluated prior to this work.⁹

Our recent work has built upon a previous absolute risk reduction model,¹⁰ updated to determine the benefit of ADT added to RT⁵ for 10-year risk of metastasis as a function of the continuous Prolaris CCR score.⁹ The updated model was built using a retrospective cohort of men tested with Prolaris who received RT alone (N=467), and assumed a 41% relative reduction in risk of distant metastasis from ADT added to RT as estimated in a meta-analysis of ADT benefit.⁵ The

PERSONALIZED PREDICTION OF MULTIMODAL TREATMENT BENEFIT

→ Continued from page 31

updated model was then used to computationally derive absolute risk reduction and number needed to treat (NNT) for a set of commercially tested patients with CCR scores representative of the general population (N=56,485).^{9,10} The included patients were broadly representative of National Comprehensive Cancer Network risk categories and clinicopathological features.⁹

The addition of ADT to RT shifted the estimated 10-year risk of metastasis (Figure 1) and produced a broad range of absolute risk reduction and NNT across CCR scores (Figure 2). At the lowest end of the recommended multimodal treatment range, the absolute risk reduction from ADT added to RT was 3.7%, with the corresponding NNT=27 indicating that ADT added to RT would prevent metastasis within 10 years for 1 of every 27 treated men. The

absolute risk reduction from ADT peaked at 19.2% near a CCR score of 4, corresponding to NNT=5. In the commercial cohort, the average absolute risk reduction was 0.86% in men under the CCR multimodal treatment threshold, corresponding to NNT=116. The average absolute risk reduction was 8.19% in men above the CCR multimodal treatment threshold, corresponding to NNT=12. These data reinforce that men under the multimodal treatment threshold, which comprised 87.3% of men in the commercial cohort,⁹ are unlikely to derive meaningful treatment benefit from adding ADT to RT.

Selecting cancer treatment modality involves understanding the patient's goals and preferences, as well as weighing the risks of ADT⁴ against its benefits. Although RT+ADT is known to benefit patients and is recommended based

on risk category,^{1-3,5} a balance of population-based risk knowledge against personalized risk estimates is needed. These recent data demonstrate that the personalized risk information provided by the CCR score can be used to inform individualized absolute risk reduction and NNT across a broad spectrum of actual risk,⁹ making it a useful tool for shared treatment decision-making between physicians and patients. ■

1. National Comprehensive Cancer Network. *NCCN Clinical Practice Guidelines in Oncology—Prostate Cancer*. Version 1.2023. Accessed June 22, 2023. https://www.nccn.org/professionals/physician_gls/pdf/prostate.pdf
2. European Association of Urology. *EAU Guidelines: Prostate Cancer*. 2023. Accessed June 22, 2023. <https://uroweb.org/guidelines/prostate-cancer/chapter/introduction>
3. Parker C, Castro E, Fizazi K, et al. Prostate cancer: ESMO clinical practice guidelines for diagnosis, treatment and follow-up. *Ann Oncol*. 2020;31(9):1119-1134.
4. Nguyen PL, Alibhai SM, Basaria S, et al. Adverse effects of androgen deprivation therapy

and strategies to mitigate them. *Eur Urol*. 2015;67(5):825-836.

5. Kishan AU, Sun Y, Hartman H, et al. Androgen deprivation therapy use and duration with definitive radiotherapy for localised prostate cancer: an individual patient data meta-analysis. *Lancet Oncol*. 2022;23(2):304-316.
6. Canter DJ, Reid J, Latsis M, et al. Comparison of the prognostic utility of the cell cycle progression score for predicting clinical outcomes in African American and non-African American men with localized prostate cancer. *Eur Urol*. 2019;75(3):515-522.
7. Tward J, Lenz L, Flake DD II, et al. The clinical cell-cycle risk (CCR) score is associated with metastasis after radiation therapy and provides guidance on when to forgo combined androgen deprivation therapy with dose-escalated radiation. *Int J Radiat Oncol Biol Phys*. 2022;113(1):66-76.
8. Tward JD, Schlomm T, Bardot S, et al. Personalizing localized prostate cancer: validation of a combined clinical cell-cycle risk (CCR) score threshold for prognosticating benefit from multimodality therapy. *Clin Genitourin Cancer*. 2021;19(4):296-304.e293.
9. Tward JD, Lenz L, Gutin A, Clegg W, Finch R, Cohen T. Predicting absolute benefit in risk of metastasis of androgen deprivation therapy added to radiation therapy in patients with newly diagnosed prostate cancer using Prolaris. *J Clin Oncol*. 2023;41(16_suppl):5030.
10. Soliman H, Flake DD, Magliocco A, et al. Predicting expected absolute chemotherapy treatment benefit in women with early-stage breast cancer using EndoPredict, an integrated 12-gene clinicomolecular assay. *JCO Precis Oncol*. 2019;3(3):1-10.

The Privately Insured Vasectomy Rate Increased From 2014 to 2021: Will It Increase More?

Max J. Hyman, MS

The Center for Health and the Social Sciences,
The University of Chicago, Illinois

Zhong Huang, MS

Pritzker School of Medicine, The University of
Chicago, Illinois

Omer A. Raheem, MD, MSc, MCh
Urol, MRCS

The University of Chicago Medicine, Illinois

Background

The vasectomy rate among privately insured men ages 18 to 64 in the US increased by 0.11%—a 26% change—from 2014 to 2021 (see Figure).¹ This finding suggests the long-term decline in the vasectomy rate among privately insured men is likely over.²⁻⁴ The authors hypothesized that this decline ended in 2014.¹ The difference in the vasectomy rate from 2014 to 2021 was greatest in men with 3 or more children (0.49%), with 2 children (0.3%), with a wife

not of advanced maternal age (0.28%), and ages 35 to 44 (0.24%). The percent change was greatest in men with no children (61%), with a wife of advanced maternal age (41%), who were single (4%), and ages 18 to 24 (37%). Both the differences and percent changes were greater in rural geographies compared to urban geographies in every region except the Northeast.¹ Therefore, men who may be good candidates for vasectomies, such as those who are in their late thirties or early forties and are done having children, were responsible for most of the growth in the vasectomy rate from 2014 to 2021. However, demographics of men in whom vasectomies may be less common, such as those who are single and in their teenage years or early twenties, may be growing more quickly. Urologists and other practitioners who perform vasectomies should be

mindful of these changes, especially those who practice in rural geographies.

Will the Overturning of *Roe v. Wade* Increase the Vasectomy Rate?

The authors proposed several explanations for the increase in the vasectomy rate, including that men may have responded to national, state, or local debates on abortion by electing to receive a vasectomy.¹ A growing body of literature suggests vasectomies increased after the overturning of *Roe v. Wade* on June 24, 2022.⁵⁻⁷ Bole et al published the first peer-reviewed data on this topic, comparing medical and billing records at a large Midwestern health system from July-August 2021 to July-August 2022.⁵ They found vasectomy consultations increased by 22.4%,

and median procedural volume per month increased by 118 ($P = .03$).² Next, Kassab et al compared medical records from 2 high-impact university hospitals from June 15-21, 2022, to June 22-28, 2022.⁶ They found office visits for vasectomy consultations increased by factors of 2.4 at hospital 1 and 6 at hospital 2.⁶ Finally, Zhang et al conducted a retrospective cohort study in a nationally representative database of approximately 87 million patients from 55 health care organizations.⁷ They found vasectomy incidence increased by 0.194%—a 20% change—in the 7 months after the overturning compared to the 7 months prior, and that the trend in vasectomy incidence, which was increasing prior to the overturning, became greater ($P < .05$).

→ Continued on page 33

THE PRIVATELY INSURED VASECTOMY RATE INCREASED FROM 2014 TO 2021

→ Continued from page 32

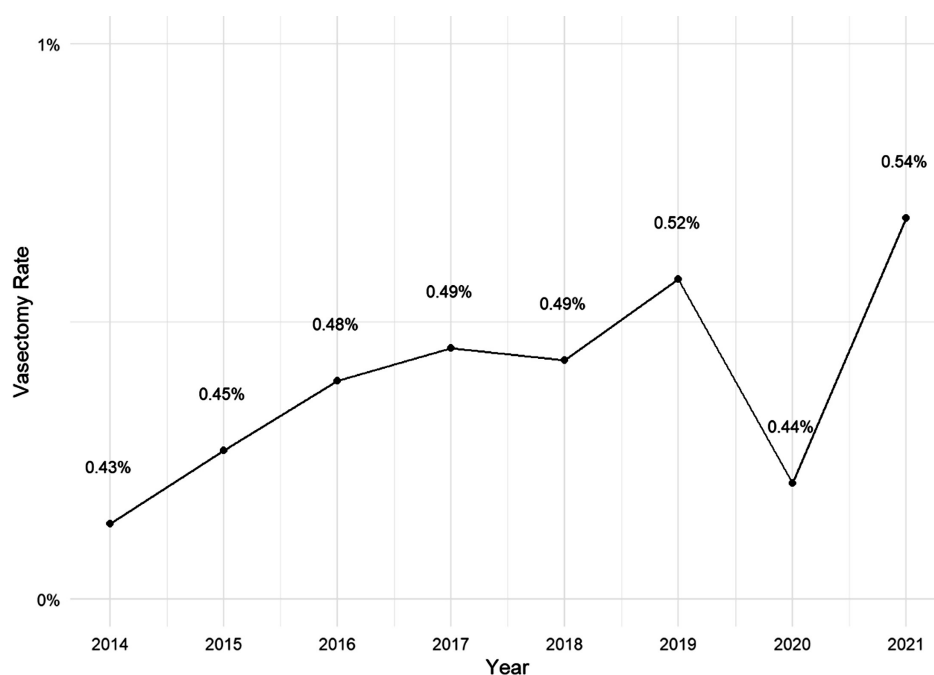


Figure. National vasectomy rate among privately insured men aged 18 to 64 in the US between 2014 and 2021.

Implications

The vasectomy rate among privately insured men ages 18 to 64 increased between 2014 and 2021. Permanent contraceptive utiliza-

tion in men and access to abortion for women may be related, so the overturning of *Roe v. Wade* may increase the vasectomy rate more in 2022 and beyond. Researchers should assess the causality of the

relationship between vasectomy and abortion as survey and health insurance claims data become available; the variation in states' legislation after the overturning offers a quasi-experimental design to do so. Researchers should also continue to monitor trends in the vasectomy rate among privately insured, publicly insured, and uninsured men, to ensure demand continues to be met.

Acknowledgments

Not every individual who is eligible for a vasectomy may identify as a man. We acknowledge that the term "men" does not reflect every gender identity.

The overturning of *Roe v. Wade* refers to the issuance of *Dobbs v. Jackson Women's Health Organization*, 597 US ___ (2022). ■

Conflict of Interest Disclosures: The Authors have no conflicts of interest to disclose. *Author Contributions:* OR, MH, and ZH

proposed the study. MH and ZH drafted the manuscript. OR, MH, and ZH read and approved the final manuscript.

- Huang Z, Hyman MJ, Raheem OA. Trends in the vasectomy rate among privately insured men aged 18 to 64 in the United States between 2014 and 2021. *Urology*. 2023;10.1016/j.urology.2023.06.013.
- Punjani N, Goldstein M. Vasectomy: is the apparent decline real or not?. *Nat Rev Urol*. 2022;19(2):69-70.
- Zhang X, Eisenberg ML. Vasectomy utilization in men aged 18-45 declined between 2002 and 2017: results from the United States national survey for family growth data. *Andrology*. 2022;10(1):137-142.
- Ostrowski KA, Holt SK, Haynes B, Davies BJ, Fuchs EF, Walsh TJ. Evaluation of vasectomy trends in the United States. *Urology*. 2018;118:76-79.
- Bole R, Lundy SD, Pei E, Bajic P, Parekh N, Vij SC. Rising vasectomy volume following reversal of federal protections for abortion rights in the United States. *Int J Impot Res*. 2023;10.1038/s41443-023-00672-x.
- Kassab J, Campbell K, Lindsey J II, Torres-Anguiano J, Khera M, Lipshultz L. An increased focus on vasectomy: overturn of *Roe v. Wade* catalyzes rise in U.S. vasectomy requests. *Fertil Steril*. 2023; <https://www.fertstert.org/news-do/increased-focus-vasectomy-overturn-roe-v-wade-catalyzes-rise-u-s-vasectomy-requests>
- Zhang TR, Able C, Ramasamy R, Kohn TP. United States vasectomy incidence rises after the reversal of *Roe v. Wade* in a national clinical and claims database. *Fertil Steril*. 2023;120(1):196-197.

AUA2023: REFLECTIONS

Mastering the Basics: How the Experts Do It

Gopal Badlani, MD, FACS, FRCS
Wake Forest University, Winston-Salem,
North Carolina

This session at AUA2023 was conceived by Secretary Dr John Denstedt based on feedback from the audience at the 2022 meeting. Common surgical procedures were demonstrated by experts. Please consider reviewing the video presentations at the AUA site for the 2023 meeting (April 29, 7:45 to 8:45 am Plenary).

Dr Micah Jacobs from U.T. Southwestern addressed a case emblematic of a typical teenage patient who might show up in an adult or pediatric emergency room. It discussed the workup and determining factors for a decision to bring the patient to the operating room, including imaging and non-imaging assessment. The procedure for orchiopexy and possible orchiectomy was discussed. Aftercare

and follow-up care recommendations included a discussion of pre- and postoperative counseling for the patient and family (Figure 1).



Figure 1. Torsion of the testicle.

Dr Mantu Gupta from Mount Sinai, New York, highlighted the advantages, clinically and pathologically, of en-bloc enucleation of bladder tumors. He discussed various lasers and methodologies to achieve complete tumor removal with good lateral and deep margins. This includes tips and tricks, such as laser settings and clinical nuances, that help facilitate the procedure, especially for the novice. Technique mastery and applications to en-bloc enucleation of ureteral and collecting system tumors were also discussed (Figure 2).

Olivier Traxier from Paris, France, is the leading expert in ureteroscopy and laser use in the upper tract. His video demonstrated the 3 pulsed laser (Ho: YAG-TmF and Tm:YAG) for stones and upper tract urothelial cancer. He presented the various settings



Figure 2. Laser enucleation of bladder tumor.

to maximize the advantage of each laser, emphasizing the physician input in setting the energy.

Wayne J. G. Hellstrom from Tulane demonstrated techniques and approach to ventral and dorsal penile plication. Approximately 4%

→ Continued on page 34

MASTERING THE BASICS: HOW THE EXPERTS DO IT

→ Continued from page 33

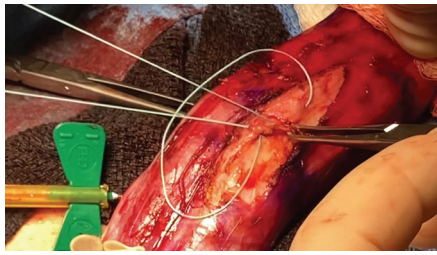


Figure 3. Plication for Peyronie's disease.

of adult men have Peyronie's disease (PD), which can cause both physical and psychologic distress. Oral meds are no longer recommended. The only Food and Drug Administration–approved agent for the treatment of PD, collagenase *Clostridium histolyticum* (Endo, Malvern, Pennsylvania), may not be

available, may not be covered by insurance, or may result in treatment failure. Surgery remains the gold standard for the treatment of PD. After passing defined indications, penile plication remains as a simple, successful, and reversible outpatient procedure with minimal complications. A nonincisional ap-

proach using baby Allis clamps and a near-to-far and far-to-near imbricating, nonabsorbable-braided suture with buried corporal knots provides a greater than 90% success rate. The preferred plication technique for dorsal, lateral, and ventral penile curvatures was detailed with explanatory videos (Figure 3). ■

AUA2023: REFLECTIONS

Surgical Management of Pediatric Urinary Stones: Personalized Approaches Based on Size and Location

Katherine Chan, MD, MPH

University of North Carolina School of Medicine,
Chapel Hill

David I. Chu, MD, MSCE

Ann & Robert H. Lurie Children's Hospital of
Chicago, Illinois
Northwestern University Feinberg School of Medicine,
Chicago, Illinois

Jonathan S. Ellison, MD

Medical College of Wisconsin, Milwaukee

Nikki Janzen, MD

Texas Children's Hospital, Houston
Baylor College of Medicine, Houston, Texas

Gregory E. Tasian, MD, MSc, MSCE

The Children's Hospital of Philadelphia,
Pennsylvania
Perelman School of Medicine, University of
Pennsylvania, Philadelphia

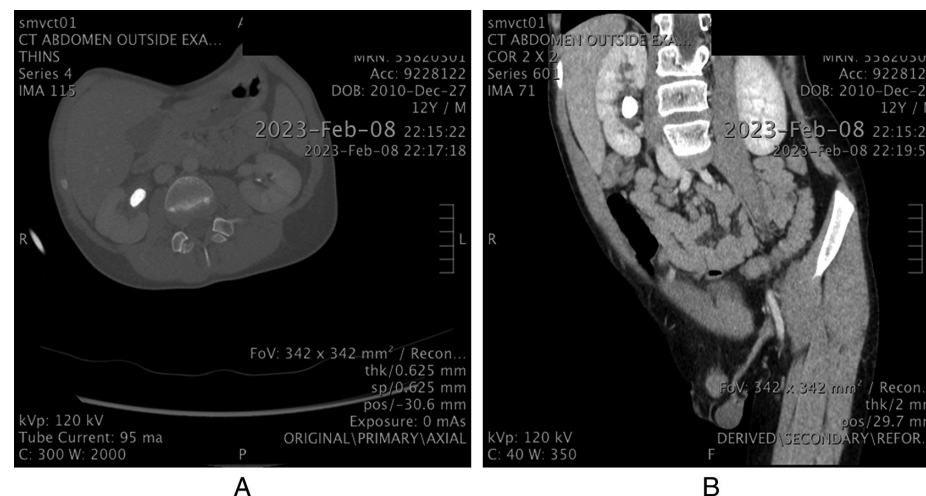


Figure 1. Case 1.

stones by size and location. Here, we summarize the rationale for 2 real cases of pediatric stone disease and the role of size and location of stone in determining the approaches.

Case 1: 9-Year-old Boy With Autism With 1.5-cm Renal Pelvis Stone (1,400 Hounsfield Units)

The AUA guidelines recommend SWL or URS as first-line therapy for renal calculi <20 mm in children, although the strength of this evidence is weak (evidence grade C).

Option 1: URS

Considerations for this case, beyond the typical considerations of stone size and location, include prepubertal patient age, developmental

delay, and scoliosis. The case for URS is centered around 3 tenets: (1) laser technology has made tremendous advances; (2) no incisions means less bleeding; and (3) patient safety comes first. An overview of comparative studies favors URS over PCNL for this scenario. A 2019 meta-analysis targeting upper urinary stones between 12 and 20 mm in size in pediatric patients found similar stone clearance after the initial and final procedures for URS and PCNL, while outcomes such as transfusion and hospital stay favored URS.⁴ Since the newest laser technologies (ie, high-power holmium with Moses and the thulium fiber laser) were introduced recently, this meta-analysis likely reflected older, low-power holmium technology. With the newer laser technologies, laser lithotripsy has been consistently faster and more efficient

Option 2: PCNL

compared to the low-power holmium laser.⁵⁻⁹ Another advantage of URS over PCNL is that there is no incision, meaning less bleeding. The transfusion rate following PCNL is ~7%.⁴ Lastly, this patient's autism and scoliosis may mask the ability to communicate patient experiences like pain and increase the risk of surgical complications,¹⁰ respectively. The case for PCNL is supported by stone clearance, monotherapeutic success, avoidance of a stent, and safety of miniaturized access tracts (ie, mini-PCNL). A meta-analysis comparing stone clearance across several surgical modalities for intermediate (1-2 cm) renal calculi in children suggests that PCNL, when stratified by access-tract size, is equally effective, if not more so, compared to URS, while SWL is inferior.¹¹ PCNL access can be obtained under the same anesthetic, providing opportunities for monotherapeutic success. In contrast, pediatric URS poses challenges in ureteral access, especially among prepubertal children, with up to 72% of children requiring multiple anesthetics, mostly driven by stent placement and removal.¹² In addition to the procedural burden of stents, the prospective STENTS (Study to Enhance Understanding of Stent-associated Symptoms) demonstrated that even after 1 week of stent dwell time

Current Evidence Base

Surgical options for pediatric nephrolithiasis include ureteroscopy (URS), shock wave lithotripsy (SWL), and percutaneous nephrolithotomy (PCNL). There are 8 recommendations for pediatric patients in the 2016 AUA/Endourological Society guidelines for the surgical management of urinary stone disease; 50% consider the size and location of stones, but none considers the age, sex, or complexity of the child, all of which may also affect the feasibility, success, and morbidity of a particular procedure.^{1,2} None considers patient-prioritized or patient-reported outcomes.³ With the existing evidence base, it is not a surprise that there is variation in the preferred choice of surgical intervention for children with urinary

→ Continued on page 35

SURGICAL MANAGEMENT OF PEDIATRIC URINARY STONES

→ Continued from page 34

following URS, pain interference and urinary bother failed to return to baseline and only did so following stent removal.¹³ Meanwhile, miniaturization for PCNL has improved safety, with mini-PCNL (sheath size of 15F-20F) associated with <1% Clavien-Dindo grade III complications and a 3.3% transfusion rate.¹⁴ Notably, concepts of monotherapy, avoidance of ureteral stents, and quality of life in recovery have been highlighted in recent patient and caregiver listening sessions for the PKIDS (Pediatric Kidney Stone) Care Improvement Network clinical trial planning,¹⁵ making PCNL an attractive patient-centered option.

Case 2: 3-Year-old Healthy Girl With 4-mm Distal Ureteral Stone and 5-mm Ipsilateral Interpolar Stone Visible on Plain Film

The AUA guidelines recommend SWL or URS as first-line therapy for pediatric patients with a total renal stone burden <20 mm, and SWL or URS for pediatric patients with ureteral stones.^{1,2}

Option 1: URS

There are several reasons why URS is the superior approach in this 3-year-old female with a renal and distal ureteral stone. First, stone clearance is higher for URS compared to SWL, particularly for distal ureteral stones. In addition, there is a lower risk of re-treatment in this child with URS. Finally, there is the opportunity to obtain a stone specimen for analysis, which is not the case for SWL. A systematic review of surgical treatments for children with renal and proximal ureteral stones found that single-session stone clearance, defined as no residual fragments, was 2.3 times higher for URS compared to SWL.¹⁶ There was no difference in overall clearance, which may reflect re-treatment for SWL. However, URS had a lower efficiency quotient, which reflects pre-stenting for passive dilation, and stent placement for stone treatment and stent removal. There was no

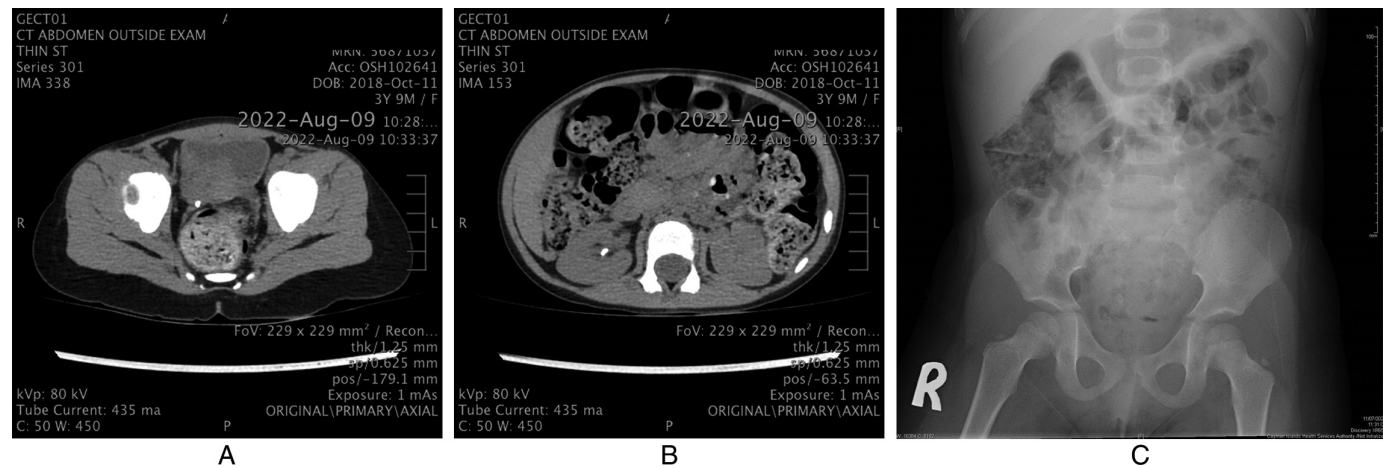


Figure 2. Case 2.

difference in complication between URS and SWL. Stone clearance for proximal ureteral stones was significantly higher than that of mid and distal ureteral stones following SWL, which is important because this patient had a distal ureteral stone.

Option 2: SWL

The case for SWL is based on 2 factors: small stone size and favorable stone location. Stone treatment with SWL can be accomplished safely without a stent in a single procedure. Much emphasis has been placed on meta-analyses favoring URS over SWL for renal and ureteral stones in children. However, the authors of one of these studies caution in drawing clinical inferences due to the very low-quality evidence for most comparisons.¹⁷ Numerous retrospective studies demonstrate a stone-free rate of 84%-90% after SWL for renal stones <10 mm in children,^{18,19} which is comparable to URS. In treating ureteral stones <10 mm with SWL, Landau et al reported 100% stone clearance after a single session.²⁰ Jee et al demonstrated that in patients <7 years of age, stone clearance was 92% after an average of 1.2 sessions.²¹ The high rate of stent use in pediatric patients undergoing URS is a factor that must be taken into consideration as it translates into multiple anesthetics. Stent usage is associated with significant discomfort and has been associated with a higher rate of postoperative emergency department visits and opioid prescriptions compared to SWL.²² SWL is safe, with only rare serious safety events such as renal hematoma and Steinstrasse.¹⁶ Studies have confirmed no scarring by

renal scintigraphy in long-term follow-up after SWL.²³

Conclusions

A multitude of appropriate treatment options—each balancing safety, efficacy, and patient experience—exist across the spectrum of pediatric kidney stone disease. While data are lacking to be able to provide personalized recommendations based upon stone and patient characteristics, emerging knowledge from the PKIDS trial, prospectively evaluating surgical outcomes for SWL, URS, and PCNL across 30 centers and 1,290 patients, will provide a substantial amount of information for patients, families, and surgeons.¹⁵ ■

- Assimos D, Krambeck A, Miller NL, et al. Surgical management of stones: American Urological Association/Endourological Society guideline, PART II. *J Urol*. 2016;196(4):1161-1169.
- Assimos D, Krambeck A, Miller NL, et al. Surgical management of stones: American Urological Association/Endourological Society guideline, PART I. *J Urol*. 2016;196(4):1153-1160.
- Ellison JS, Williams M, Keeley FX Jr. Patient-reported outcomes in nephrolithiasis: can we do better?. *J Endourol*. 2018;32(1):10-20.
- Chen Y, Deng T, Duan X, et al. Percutaneous nephrolithotomy versus retrograde intrarenal surgery for pediatric patients with upper urinary stones: a systematic review and meta-analysis. *Urolithiasis*. 2019;47(2):189-199.
- Chua ME, Bobrowski A, Ahmad I, et al. Thulium fibre laser vs holmium: yttrium-aluminium-garnet laser lithotripsy for urolithiasis: meta-analysis of clinical studies. *BJU Int*. 2023;131(4):383-394.
- Harris WN, Cao L, Tasian GE. Comparative effectiveness of high-power holmium laser lithotripsy for pediatric patients with kidney and ureteral stones. *J Pediatr Urol*. 2022;18:463.e1.
- Ibrahim A, Elhilali MM, Fahmy N, et al. Double-blinded prospective randomized clinical trial comparing regular and Moses modes of holmium laser lithotripsy. *J Endourol*. 2020;34(5):624-628.
- Jaeger CD, Nelson CP, Cilento BG, et al. Comparing pediatric ureteroscopy outcomes with superpulsed thulium fiber laser and low-power holmium: YAG laser. *J Urol*. 2022;208(2):426-433.
- Ulvik Ø, Æsøy MS, Juliebo-Jones P, et al. Thulium fibre laser versus holmium: YAG for ureteroscopic lithotripsy: outcomes from a pro-

spective randomised clinical trial. *Eur Urol*. 2022;82(1):73-79.

- Chaudhry R, Theisen KM, Stephany HA, et al. Percutaneous stone surgery in spina bifida patients—are stone-free rates worth the risk?. *J Endourol*. 2017;31(Suppl 1):S81-S86.
- Zhao F-Z, Li J, Tang L, et al. Comparison of efficacy and safety of minimally invasive procedures for 10-20 mm pediatric renal stones—a Bayesian network meta-analysis. *J Pediatr Urol*. 2020;16(6):771-781.
- Marchetti KA, Lee T, Raja N, et al. Extracorporeal shock wave lithotripsy versus ureteroscopy for management of pediatric nephrolithiasis in upper urinary tract stones: multi-institutional outcomes of efficacy and morbidity. *J Pediatr Urol*. 2019;15:516.e1.
- Harper JD, Desai AC, Maalouf NM, et al. Risk factors for increased stent-associated symptoms following ureteroscopy for urinary stones: results from STENTS. *J Urol*. 2023;209(5):971-980.
- Jones P, Hawary A, Beck R, et al. Role of mini-percutaneous nephrolithotomy in the management of pediatric stone disease: a systematic review of literature. *J Endourol*. 2021;35(5):728-735.
- Ellison JS, Lorenzo M, Beck H, et al. Comparative effectiveness of paediatric kidney stone surgery (the PKIDS trial): study protocol for a patient-centred pragmatic clinical trial. *BMJ Open*. 2022;12(4):e056789.
- Lu P, Wang Z, Song R, et al. The clinical efficacy of extracorporeal shock wave lithotripsy in pediatric urolithiasis: a systematic review and meta-analysis. *Urolithiasis*. 2015;43(3):199-206.
- Barreto L, Jung JH, Abdelrahim A, et al. Medical and surgical interventions for the treatment of urinary stones in children. *Cochrane Database Syst Rev*. 2019;10:CD010784.
- Demirkesen O, Onal B, Tansu N, et al. Efficacy of extracorporeal shock wave lithotripsy for isolated lower caliceal stones in children compared with stones in other renal locations. *Urology*. 2006;67(1):170-174.
- Soygur T, Arikian N, Kilic O, et al. Extracorporeal shock wave lithotripsy in children: evaluation of the results considering the need for auxiliary procedures. *J Pediatr Urol*. 2006;2(5):459-463.
- Landau EH, Shenfeld OZ, Pode D, et al. Extracorporeal shock wave lithotripsy in prepubertal children: 22-year experience at a single institution with a single lithotripter. *J Urol*. 2009;182(4 Suppl):1835-1840.
- Jee JY, Kim SD, Cho WY. Efficacy of extracorporeal shock wave lithotripsy in pediatric and adolescent urolithiasis. *Korean J Urol*. 2013;54(12):865-869.
- Tasian GE, Maltenfort MG, Rove K, et al. Ureteral stent placement prior to definitive stone treatment is associated with higher postoperative emergency department visits and opioid prescriptions for youth having ureteroscopy or shock wave lithotripsy. *J Urol*. 2023;209(6):1194-1201.
- Lottmann HB, Archambaud F, Traxer O, et al. The efficacy and parenchymal consequences of extracorporeal shock wave lithotripsy in infants. *BJU Int*. 2000;85(3):311-315.

AUA2023 BEST POSTERS

Should We Include Systematic Biopsies in Diagnosis of Patients With Upper Tract Urothelial Carcinoma?

Andrea Gallioli, MD

Fundació Puigvert, Barcelona, Spain

Giuseppe Basile, MD

Fundació Puigvert, Barcelona, Spain

Angelo Territo, MD

Fundació Puigvert, Barcelona, Spain

Joan Palou, MD

Fundació Puigvert, Barcelona, Spain

Alberto Breda, MD

Fundació Puigvert, Barcelona, Spain

Upper tract urothelial cancer (UTUC) is a rare disease whose standard treatment has traditionally been represented by radical nephroureterectomy (RNU). In recent years, advances in the endourological technology armamentarium have led to the selection of some patients with low-risk disease, namely low-grade single tumor <2 cm, who may benefit from ablative ureteroscopy (URS).¹ On the other hand, ureterectomy has been proven to be a feasible and safe treatment in patients with high-risk disease of the distal ureter.² Moreover, patients with high-risk UTUC might be directed to endoscopic treatment due to imperative indications (ie, solitary kidney, chronic kidney disease, panurothelial tumors).

Regardless, the correct risk stratification of UTUC remains a challenge. Computed tomography has shown a high accuracy to detect UTUC but a low performance in UTUC risk stratification.³ Urinary cytology has limited sensitivity (64%) for UTUC. URS has been proven to be the best technique to diagnose UTUC, providing important information on tumor characteristics such as tumor grading and in situ cytology, and potentially ablating the lesion in a single session. However, it is not considered a key step in the diagnostic workflow of UTUC due to the relatively high percentage of nondiagnostic biopsies and the risk of bladder recurrence after endoscopic tumor manipulation.⁴

In this regard, the application of ureteral systematic biopsies (USBs) has never been considered. We postulated that, similarly to bladder cancer, USB might be useful in specific populations of patients affected by UTUC and candidates for kidney-sparing treatment (KSS). Thus, this technique has been implemented in our institutional protocol.

USB was performed via a semirigid URS and consisted of at least two 3F biopsies in each of the upper tract portions: pelvis, proximal, mid, and distal ureter.

The indications were as follows: (1) suspicion of upper tract carcinoma in situ, (2) follow-up after upper tract bacillus Calmette-Guérin instillations for high-risk

“We postulated that, similarly to bladder cancer, USB might be useful in specific populations of patients affected by UTUC and candidates for kidney-sparing treatment (KSS).”

disease, (3) high-risk tumors, candidate for KSS, (4) recurrent low-risk UTUCs.

A total of 300 USBs was performed in 91 patients. This technique proved to be safe, since postoperative complications and readmissions were comparable to those of patients who were not submitted to USB. Notably, bladder recurrence-free survival was similar between those submitted to URS for UTUC suspicion with or without USB (77% vs 73%).

A significant number of USBs were positive (47%), while 19%

were nondiagnostic. Furthermore, in 31% of negative/nondiagnostic URS, USB was positive. Therefore, USB provided a significantly higher number of tumor diagnoses in the setting of negative or nondiagnostic URS.

A biopsy of a target lesion was performed in 40% of cases. In 19% of these cases, USB outperformed the biopsy of the lesion in detecting UTUC. Conversely, 73% of patients with positive target biopsies had positive USB. This underlines that a nonnegligible portion of patients with a lesion detected during the URS might harbor disease in other portions of the upper urinary tract.

In 45% (5/11) of patients diagnosed with a distal ureteral tumor, USB detected UTUC in other upper tract portions. Thus, notably almost half of patients who were candidates for KSS, either endoscopic management or distal ureterectomy, had UTUCs in other portions of the upper urinary. This could lead to a change in treatment algorithm, from KSS to RNU.

The higher number of tumor diagnoses and multifocal tumor detection has a clinical impact that is demonstrated by the 2-year RNU-free survival rates, which were 87% (95% CI: 78.1-98.5) vs 53% (95% CI: 39.4-71.2; $P = .001$) for negative vs positive USB patients. At Cox regression model accounting for predefined variables, patients with positive USB had a higher risk of being treated with RNU (HR: 3.38, 95% CI: 1.46-7.80; $P = .004$).

In view of this, we concluded that USBs for UTUC were safe and could provide significant improvements in the selection of patients who may benefit from a KSS. A refined risk stratification of UTUC could also facilitate the expansion of the criteria for endoscopic treatment, which are actually reserved to a small percentage of patients affected by the

disease. In the pursuit of shedding light on this rare disease, we believe that the implementation of

“In 45% (5/11) of patients diagnosed with a distal ureteral tumor, USB detected UTUC in other upper tract portions. Thus, notably almost half of patients who were candidates for KSS, either endoscopic management or distal ureterectomy, had UTUCs in other portions of the upper urinary.”

USBs could represent a small but significant step toward the optimization of the diagnostic pathway, and thus treatment indication, of UTUC. ■

1. Rouprêt M, Babjuk M, Burger M, et al. European Association of Urology guidelines on upper urinary tract urothelial carcinoma: 2020 update. *Eur Urol*. 2021;79(1):62-79.
2. Seisen T, Peyronnet B, Dominguez-Escrig JL, et al. Oncologic outcomes of kidney-sparing surgery versus radical nephroureterectomy for upper tract urothelial carcinoma: a systematic review by the EAU Non-muscle Invasive Bladder Cancer Guidelines Panel. *Eur Urol*. 2016;70(6):1052-1068.
3. Gallioli A, Territo A, Mercadé A, et al. The impact of ureteroscopy following computerized tomography urography in the management of upper tract urothelial carcinoma. *J Urol*. 2021;205(2):392-399.
4. Subiela JD, Territo A, Mercadé A, et al. Diagnostic accuracy of ureteroscopic biopsy in predicting stage and grade at final pathology in upper tract urothelial carcinoma: systematic review and meta-analysis. *Eur J Surg Oncol*. 2020;46(11):1989-1997.

AUA2023 BEST POSTERS

Informing an Approach to the Subcapsular Renal Hematoma

Elizabeth Lynch, MD

The Smith Institute for Urology/Northwell Health, New Hyde Park, New York

Jacob Gaines, MD

The Smith Institute for Urology/Northwell Health, New Hyde Park, New York

Justin James, BS

The Smith Institute for Urology/Northwell Health, New Hyde Park, New York

Tareq Aro, MD

The Smith Institute for Urology/Northwell Health, New Hyde Park, New York

David Hoenig, MD

The Smith Institute for Urology/Northwell Health, New Hyde Park, New York

Zeph Okeke, MD

The Smith Institute for Urology/Northwell Health, New Hyde Park, New York

Arthur Smith, MD

The Smith Institute for Urology/Northwell Health, New Hyde Park, New York

Arun Rai, MD

The Smith Institute for Urology/Northwell Health, New Hyde Park, New York

Subcapsular renal hematomas (SRHs) are rare but significant findings that carry potential risks in both acute and chronic settings. These crescentic fluid collections, confined by the renal capsule, can exert pressure on the underlying renal parenchyma and may be accompanied by perinephric hemorrhage. SRH can manifest with various clinical symptoms, including anemia, pain, infection, kidney injury, and hypertension. While the etiology of spontaneous hematomas remains unclear, traumatic causes can result from physical injury or accidents, while iatrogenic causes are associated with postprocedural complications.

In a comprehensive 10-year retrospective review, a total of 97 patients with acute SRH in the native kidney were included. The etiologies of SRH were classified into 3 categories: traumatic (21%), spontaneous (32%), and iatrogenic (47%), as seen in the Table. Notably, spontaneous SRH cases often lacked clear underlying causes, with less than half of patients having associated cystic or solid masses. Renal biopsy was the most common iatrogenic

etiology (18/28), followed by nephrostomy placement/exchange (7/28) and percutaneous nephrolithotomy (PCNL; 7/28).

Complications associated with SRH were observed in several patients. Three patients developed Page kidney phenomenon, with hypertension secondary to renin-angiotensin-aldosterone system activation. Among these patients, 2 had solitary kidneys, necessitating new hemodialysis or open hematoma evacuation. The Page kidney with a contralateral functional kidney was managed conservatively. Additionally, 6 patients developed infected perinephric hematomas, requiring interventions such as image-guided drainage (n=5) or nephrectomy (n=1) on day 85, on average. Perinephric bleeding occurred in 21 patients, with 17 of them undergoing renal artery embolization. Of the 17 patients requiring renal artery embolization, 4 presented with trauma, 7 after iatrogenic causes, and 6 were spontaneous (3 with renal masses). While rare, an additional 2 cases required operative hematoma evacuation due to severe pain and abdominal compartment syndrome.

Prompt recognition of the SRH in addition to recognition of the cause of the bleed may be impactful to predicting outcomes. Perhaps the most common etiology of SRH is renal biopsy, as seen in our cohort (19%). A prospective study of 471 patients by Manno et al reported a 33% rate of postbiopsy SRH in native kidneys. However, 90% of these hematomas were clinically silent.¹ Our study noted that 55% of postbiopsy hematomas required intervention ranging from multiple transfusions to renal artery embolization.

Iatrogenic renal subcapsular hematoma from routine urological cases traditionally has been described regarding percutaneous stone extraction (PCNL) and extracorporeal shock wave lithotripsy. In our study, PCNL (7/46) and

Table. Etiology of Subcapsular Renal Hematoma

Etiology		Total	% of Total
Trauma (20)	Fall	12	12
	Blunt	7	7
	Penetrating	1	1
Spontaneous (31)	Unknown	19	20
	Renal mass	8	8
	Polycystic kidneys	4	4
Iatrogenic (46)	Renal biopsy	18	19
	Nephrostomy placement/exchange	7	7
	URS	4	4
	ESWL	6	6
	PCNL	7	7
	Partial nephrectomy	1	1
	AAA endograft	2	2
	Lumbar fixation	1	1
	Total	97	

Abbreviations: AAA, abdominal aortic aneurysm; ESWL, extracorporeal shock wave lithotripsy; PCNL, percutaneous nephrolithotomy; URS, ureteroscopy.

extracorporeal shock wave lithotripsy (6/46) were the most common iatrogenic causes of SRH. Additionally, placement or exchange of nephrostomy tube had a similar incidence (7/46). SRH after ureteroscopic lithotripsy is detailed in relatively few case reports. Our study reports 4 SRHs in the setting of ureteroscopy. A systematic review by Whitehurst et al in 2017 of 9,000 patients who underwent ureteroscopic lithotripsy found the incidence of SRH to be 0.45%.² It has been postulated that SRHs are more likely to form after ureteroscopy in the setting of hydronephrosis leading to deformed vasculature and loss of parenchymal elasticity. In addition, trauma from the guidewire and prolonged high-pressure flow in the pelvicaliceal system may be attributed to the risk of SRH.

About one-third of the hematoma cases in our study were spontaneous bleeds, unrelated to trauma or iatrogenic etiology. Of the 31

spontaneous SRHs, 8 were related to renal masses and 4 to polycystic kidneys. Wunderlich syndrome describes the acute onset of spontaneous, nontraumatic renal hemorrhage into the subcapsular and perirenal spaces. It is traditionally characterized by Lenk's triad: acute flank pain, flank mass, and hypovolemic shock. More than half of these patients in our study were clinically silent. However, 3 of 97 (3%) of the total SRH cases developed Page kidney, all from spontaneous hematomas, 1 of which was related to an underlying renal mass.

The natural history of the SRH timeline to resolution has not been elucidated in the current literature. Our study included patients with at least 3 follow-up cross-sectional imaging series. Among the 94 patients who underwent follow-up imaging within 10 months, 20 of them (21%) demonstrated complete hematoma resolution. Further imaging

INFORMING AN APPROACH TO THE SUBCAPSULAR RENAL HEMATOMA

→ Continued from page 37

between 10 and 15 months was conducted on 18 patients, with an additional 8 patients (44%) showing resolved hematomas. On average, the complete resolution of the hematoma took approximately 368 days. Although our study lacks complete follow-up for each pa-

tient, it may be recommended that patients with SRH expect follow-up for 1.5 to 2 years until resolution.

There is currently no evidence-based guideline for the management of SRH. The study's findings shed light on the natural history, clinical course, and management

of SRHs. Early recognition is key, especially in the setting of solitary or allograft kidney, to prevent progressive ischemic organ damage. Indications for intervention as seen in our study include severe anemia and hemodynamic instability, intolerable pain, infected hematoma

intractable to antibiotic therapy, and Page kidney. ■

1. Manno C, Strippoli G, Arnesano L, et al. Predictors of bleeding complications in percutaneous ultrasound-guided renal biopsy. *Kidney Int.* 2004;66(4):1570-1577.
2. Whitehurst L, Somani B. Perirenal hematoma after ureteroscopy: a systematic review. *J Endourol.* 2017;31(5):438-445.

AUA2023 BEST POSTERS

Long-term Tumor Necrosis Factor–alpha Inhibitor Use Decreases the Risk of Prostate Cancer

Conor B. Driscoll, MD

Northwestern University, Chicago, Illinois

Jordan Rich, BS

Northwestern University, Chicago, Illinois

Dylan Isaacson, MD

Northwestern University, Chicago, Illinois

Joseph Nicolas, MD

Northwestern University, Chicago, Illinois

Yu Jiang, PhD

Stanford University, California

Xinlei Mi, PhD

Northwestern University, Chicago, Illinois

Victoria Kocsuta, MD

Northwestern University, Chicago, Illinois

Regine Goh, MD

University of California at San Diego

Niti Patel, MD

Northwestern University, Chicago, Illinois

Eric Li, MD

Northwestern University, Chicago, Illinois

Rashid Siddiqui, MD

Northwestern University, Chicago, Illinois

John S. Witte, PhD

University of California at San Francisco

Linda Kachuri, PhD

University of California at San Francisco

Sai Kumar, PhD

Northwestern University, Chicago, Illinois

Hui Zhang, PhD

Northwestern University, Chicago, Illinois

Edward M. Schaeffer, MD, PhD

Northwestern University, Chicago, Illinois

Shilajit D. Kundu, MD

Northwestern University, Chicago, Illinois

inflammatory bowel disease (IBD), with Burns et al demonstrating a 4-times increased risk of high-grade prostate cancer in patients with IBD.¹ Previous epidemiologic studies have noted an association between chronic inflammation and prostate cancer as well as increased risk of gastrointestinal malignancy and extraintestinal malignancies, including lymphoma and skin cancer, in patients with IBD.²⁻⁴ The risk of urological tumors in patients with chronic inflammatory conditions, including but not limited to IBD, is not well elucidated.^{5,6}

Our study grew out of the initial Burns et al paper and sought to investigate the possible link between prostate cancer and IBD. As one of our avenues of exploration, we looked into inflammation as a common cause, and one of the most common classes of anti-inflammatory medications used worldwide are the tumor necrosis inhibitors (TNF-I). There are multiple on-label indications for these medications including IBD, psoriasis, rheumatoid arthritis, and many others. The literature has not established any link between cancer development and TNF-I exposure aside from certain non-melanoma skin cancers and lymphomas. However, very few studies have follow-up data beyond 1 year of drug treatment, which is a nonconclusive follow-up time frame to evaluate the risk of solid malignancy.⁷ The studies that have longer follow-up are also plagued

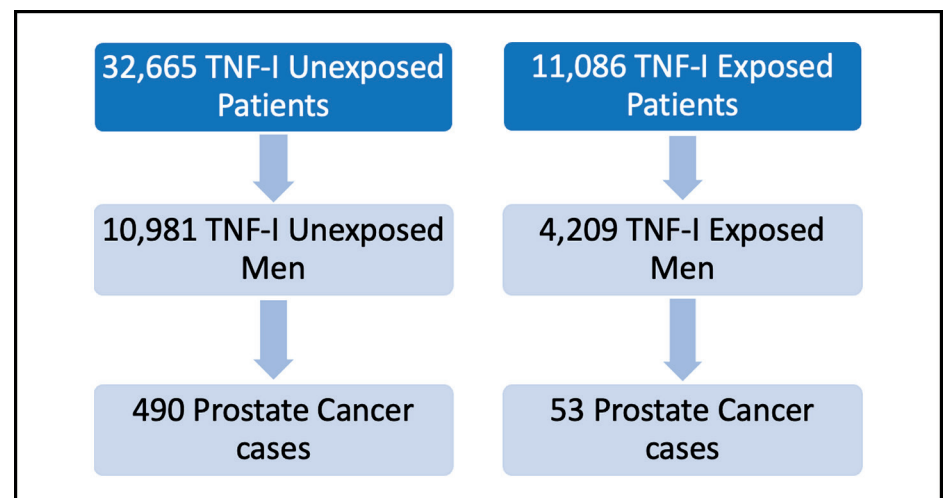


Figure 1. Flowchart of tumor necrosis inhibitors (TNF-I) in exposed and unexposed men and prostate cancer development.

by other issues, including reliance on a spontaneous reporting system for adverse events or use of multiple medications concomitantly.^{8,9} Furthermore, there are no studies that specifically evaluate the risk of urological cancer after TNF- α -I exposure in the published literature.¹⁰ As such, we sought to examine the risk of urological malignancies in patients on long-term TNF- α -I immunosuppression through a multicenter, single-health system, retrospective cohort.

We queried for adult patients who presented to any clinic within the Northwestern Medicine network from July 1996 through January 2020. Patients exposed to TNF- α -I were identified using the generic medication names for any of the 5 TNF- α -I (adalimumab, infliximab, etanercept, certolizumab,

and golimumab) along with the chronic inflammatory condition for which they were prescribed. Prostate cancer in this population was identified using ICD-9 and ICD-10 codes followed up by manual chart review. Because there was a significant time period in which TNF-I exposed patients were in the system before initiation of the TNF-I, we employed a time-dependent analysis across exposure groups of each inflammatory condition. We used control groups as the patients with chronic inflammatory conditions without TNF-I exposure. After a long internal discussion and search of the literature, we decided to only include a malignancy if it was diagnosed at least 6 months after initial TNF-I exposure.

Recent data have suggested a higher incidence of clinically significant prostate cancer in men with

→ Continued on page 39

LONG-TERM TUMOR NECROSIS FACTOR–ALPHA INHIBITOR

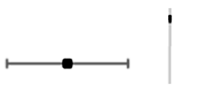
→ Continued from page 38

Table 1. Baseline Characteristics of Prostate Cancer Patients

	TNF-1 unexposed (N=490)	TNF-1 exposed (N=53)	P value
Age, median (IQR), y	61 (54, 69)	61 (55, 67)	> .9
Follow-up time, median (IQR), wk			
Overall	87 (38, 144)	101 (56, 168)	< .001
Post-exposure	–	46 (21, 78)	
Race, No. (%)			.8
Black	58 (12)	7 (13)	
White	421 (86)	46 (87)	
Other	11 (2)	0 (0)	
Smoking, No. (%)			.059
Current	40 (8)	2 (4)	
Former	214 (44)	16 (30)	
Never	236 (48)	35 (66)	
TNF-1, No. (%)			< .001
Adalimumab	0 (0)	26 (49)	
Infliximab	0 (0)	10 (19)	
Etanercept	0 (0)	14 (26)	
Certolizumab	0 (0)	2 (3.8)	
Golimumab	0 (0)	1 (1.9)	

Abbreviations: IQR, interquartile range; TNF, tumor necrosis inhibitors.

Cancer Type	HR*	P-value
Prostate	0.58 (0.42, 0.8)	0.001


Figure 2. Prostate cancer risk with tumor necrosis inhibitor exposure. HR indicates hazard ratio.

Although there is no literature to estimate biologic feasibility, this was the consensus of a panel of oncologic experts on our team.

These data, which we presented at AUA 2023 in Chicago, found a total of 15,190 men with chronic inflammatory conditions for which TNF-I is a Food and Drug Administration–approved treatment (Figure 1). There were 4,209 men exposed to a TNF-I and 10,981 men who remained unexposed to TNF-I. Median post-TNF-I exposure follow-up was 46 weeks (IQR 21-78 weeks) with 53 patients (1.3%) subsequently developing prostate cancer. Median follow-up time without TNF-I exposure was 87 weeks (IQR 38-144 weeks) with 490 patients (4.5%) subsequently developing prostate cancer (Table 1). After our time-dependent analysis, TNF-I

exposure was associated with a decreased risk of prostate cancer (HR 0.58, 95% CI 0.42-0.80, $P = .001$; Figure 2). There was no difference in PSA at time of diagnosis, Grade Group on biopsy specimen, number of positive biopsy cores, or rates of adverse pathology on prostatectomy specimen (Table 2).

Our manuscript is the first publication of the finding that TNF-I exposure may be protective against prostate cancer. Our data include more than 15,000 men with a median follow-up of over 1 year and define a sample size similar to previous interventional and observational meta-analyses and comparable to previous large registry-based cohort studies.⁷⁻⁹ Overall, our findings are very exciting, and we plan to further investigate these findings with increased analyses on

Table 2. Prostate Cancer Characteristics

	TNF-I unexposed (N=490)	TNF-I exposed (N=53)	P value
PSA at diagnosis, No. (%)			.3
<4	69 (14)	12 (23)	
4-10	225 (46)	25 (47)	
>10	69 (14)	6 (11)	
Unknown	127 (26)	10 (19)	
Grade group on bx, No. (%)			.6
1	165 (34)	22 (42)	
2	100 (20)	10 (19)	
3	70 (14)	5 (9)	
4	33 (7)	4 (8)	
5	29 (6)	5 (9)	
Unknown	93 (19)	7 (13)	
Number of positive cores, No. (%)			.5
1	76 (16)	14 (26)	
2-6	194 (40)	20 (38)	
7-10	37 (8)	5 (9)	
>10	20 (4)	2 (4)	
Unknown	163 (32)	12 (23)	
Adverse pathology, No. (%)			
EPE	48 (10)	12 (23)	.4
SVI	15 (3)	2 (4)	> .9
LVI	10 (2)	4 (8)	.3
N1	7 (1)	3 (6)	.4
M1	37 (8)	4 (8)	> .9

Abbreviations: bx, biopsy; EPE, extraprostatic extension; LVI, lymphovascular invasion; PSA, prostate-specific antigen; SVI, seminal vesicle invasion; TNF, tumor necrosis inhibitors.

our current data set as well as attempting to set up multi-institutional prospective studies to aggregate more robust data on this possible connection. Whether or not this process is driven by inflammation or other processes in the tumor microenvironment, we plan to continue to explore this new clinical phenomenon. ■

- Burns JA, Weiner AB, Catalona WJ, et al. Inflammatory bowel disease and the risk of prostate cancer. *Eur Urol*. 2019;75(5):846-852.
- Platz EA, De Marzo AM. Epidemiology of inflammation and prostate cancer. *J Urol*. 2004;171(2S):S36-S40.
- Kappelman MD, Moore KR, Allen JK, Cook SF. Recent trends in the prevalence of Crohn's disease and ulcerative colitis in a commercially insured US population. *Dig Dis Sci*. 2013;58(2):519-525.
- Chang M, Chang L, Chang HM, Chang F. Intestinal and extraintestinal cancers associated with inflammatory bowel disease. *Clin Colorectal Cancer*. 2018;17(1):e29-e37.

- Jung YS, Han M, Park S, Kim WH, Cheon JH. Cancer risk in the early stages of inflammatory bowel disease in Korean patients: a nationwide population-based study. *J Crohns Colitis*. 2017;11(8):954-962.
- Jess T, Horvath-Puho E, Fallingborg J, Rasmussen HH, Jacobsen BA. Cancer risk in inflammatory bowel disease according to patient phenotype and treatment: a Danish population-based cohort study. *Am J Gastroenterol*. 2013;108(12):1869-1876.
- Williams CJM, Peyrin-Biroulet L, Ford AC. Systematic review with meta-analysis: malignancies with anti-tumour necrosis factor- α therapy in inflammatory bowel disease. *Aliment Pharmacol Ther*. 2014;39(5):447-458.
- Sugimoto K, Ikeya K, Kato M, et al. Assessment of long-term efficacy and safety of adalimumab in patients with ulcerative colitis: results from a 6-year real-world clinical practice. *Digestive Dis*. 2019;37(1):11-20.
- Sartini A, Scaioli E, Liverani E, et al. Retention rate, persistence and safety of adalimumab in inflammatory bowel disease: a real-life, 9-year, single-center experience in Italy. *Dig Dis Sci*. 2019;64(3):863-874.
- Food and Drug Administration. *FDA Adverse Events Reporting System (FAERS) Public Dashboard*. <https://www.fda.gov/drugs/questions-and-answers-fdas-adverse-event-reporting-system-faers/fda-adverse-event-reporting-system-faers-public-dashboard>

AUA2023 BEST POSTERS

Platelet-rich Plasma for the Treatment of Erectile Dysfunction

Braian Ledesma, MD

Desai Sethi Urology Institute, Miller School of Medicine, University of Miami, Florida

Thomas A. Masterson, MD

Desai Sethi Urology Institute, Miller School of Medicine, University of Miami, Florida

Manuel Molina, MD

Desai Sethi Urology Institute, Miller School of Medicine, University of Miami, Florida

Ranjith Ramasamy, MD

Desai Sethi Urology Institute, Miller School of Medicine, University of Miami, Florida

Introduction

Erectile dysfunction (ED) is a prevalent condition affecting approximately 1 in 4 men, with its incidence on the rise.¹ Guideline-supported medical treatments for ED primarily focus on transient vasodilation through augmentation of the nitric oxide pathway.² While these treatments offer symptomatic relief, they are unable to reverse the underlying pathology. Additionally, many men discontinue medical therapies due to lack of efficacy and side effects.^{3,4} Therefore, there is growing interest in restorative therapies such

“PRP, an autologous blood product with a high concentration of platelets, has been utilized in various fields for its regenerative properties, including promoting healing and tissue repair.”

as platelet-rich plasma (PRP) and shockwave therapy that hold the potential to reverse the underlying pathology and restore natural spontaneous erections.⁵ PRP, an autologous blood product with a

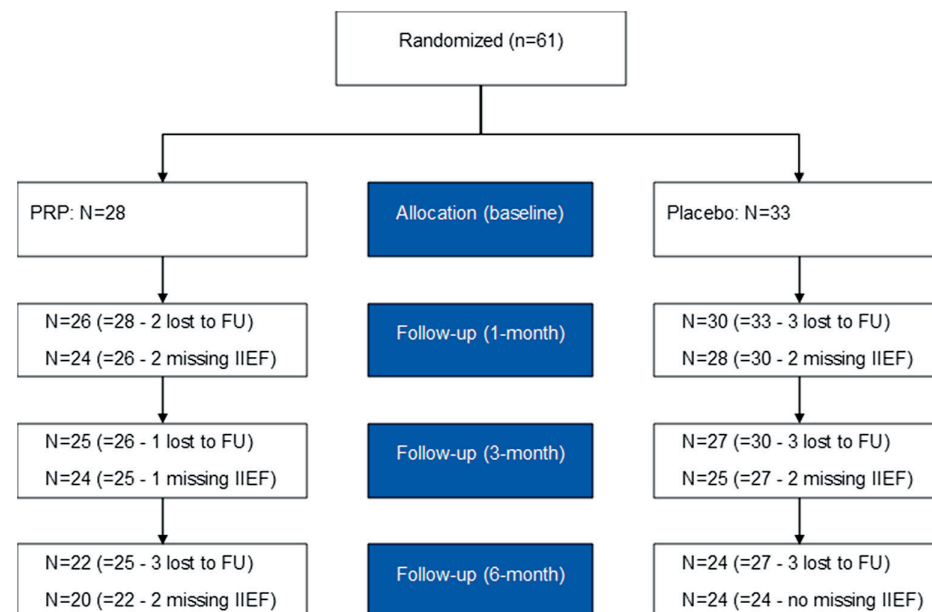


Figure 1. Patient flow diagram. FU indicates follow-up; IIEF, International Index of Erectile Function; PRP, platelet-rich plasma.



Figure 2. Platelet-rich plasma/placebo injection into corpus cavernosum.

high concentration of platelets, has been utilized in various fields for its regenerative properties, including promoting healing and tissue repair. However, despite its use in other medical applications, there is a scarcity of clinical evidence supporting its efficacy in treating ED.

Objective

The objective of this prospective, randomized, double-blind, placebo-controlled clinical trial was to assess the clinical efficacy of PRP for ED. The study aimed to determine if PRP injections could improve erectile function in men with mild to moderate ED compared to placebo.

Methods

The study was conducted at the outpatient clinic of the Desai Sethi Urology Institute in Miami, Florida, United States. The study protocol

“The objective of this prospective, randomized, double-blind, placebo-controlled clinical trial was to assess the clinical efficacy of PRP for ED. The study aimed to determine if PRP injections could improve erectile function in men with mild to moderate ED compared to placebo.”

PLATELET-RICH PLASMA FOR THE TREATMENT

→ Continued from page 40

was approved by the Institutional Review Board and registered on ClinicalTrials.gov. A total of 61 men with ED were recruited between May 2020 and August 2022. The participants underwent thorough screening, including medical history, physical examination, questionnaires (International Index of Erectile Function-Erectile Function [IIEF-EF] and Sexual Encounter Profile), measurement of serum testosterone levels, HbA1c, and complete blood count. Baseline penile duplex ultrasound was performed to assess penile vascular parameters. The participants were sequentially randomized in a 1:1 ratio to receive either PRP or placebo injections (Figure 1). Intracavernosal injections were administered in 2 sessions, 28±7 days apart. PRP was obtained through centrifugation and separation of autologous blood using the Arthrex Angel PRP system. The treatment group received PRP injections, while the placebo group received saline injections (Figure 2). The study was double-blind, with only 1 researcher aware of the treatment allocations who was not involved in data collection or outcome analysis.

Outcomes

The primary outcome of the study was the number of men meeting the minimum clinically import-

“IIEF-EF scores from baseline to 1 month showed a change from 17.4 (15.8-19.0) to 21 (17.9-24.0) in the PRP group, compared to 18.6 (17.3-19.8) to 21.6 (19.1-24.1) in the placebo group. However, this difference was not statistically significant ($P = .756$).”

ant difference (MCID) at 1 month after the second injection. MCID was defined as an increase of 2 for mild ED (starting IIEF-EF 17-25) and 5 for moderate ED (starting IIEF-EF 11-16). Secondary outcomes included changes in IIEF-EF scores, penile vascular parameters, and adverse events. Follow-up assessments were conducted at 1, 3, and 6 months after the last injection to evaluate long-term side effects and durability of response.

Results

A total of 61 men were randomized, with 28 in the PRP group and 33 in the placebo group. Complete 1-month data were available for 24 men in the PRP group and 28 men in the placebo group. Additionally, complete 6-month data were obtained for 20 men in the PRP group and 24 men in the placebo group. Baseline demographics and characteristics were similar between the 2 groups, except for a higher prevalence of prediabetes in the placebo group. The analysis of IIEF-EF scores from baseline to 1 month showed a change from 17.4 (15.8-19.0) to 21 (17.9-24.0) in the PRP group, compared to 18.6 (17.3-19.8) to 21.6 (19.1-24.1) in the placebo group. However, this difference was not statistically significant ($P = .756$). The percentage of men meeting MCID was 58.3% in the PRP group compared to 53.6% in the placebo group. There were no significant differences in adverse events between the 2 groups (see Table), and no serious adverse events were reported. Moreover, there were no significant differences in mean penile Doppler parameters between baseline and 6 months, or between the PRP and placebo groups.

Limitations

This study has several limitations. First, the sample size was relatively small, which may have influenced the statistical power and generalizability of the findings. Second, the follow-up period was limited to 6 months, which may not have allowed for a comprehensive assessment of long-term efficacy and safety. Third, the study focused on men with mild to moderate ED, and

Table. Safety and Side Effects of Platelet-rich Plasma Injections Among Blinded Groups

Safety and side effects of PRP vs placebo		
	PRP	Placebo
N	28	33
Pain with injection 1 (n/10), mean	3.7	3.5
Pain with injection 2 (n/10), mean	4.1	4
Adverse events	1	1
Major adverse events, No. (%)	0 (0)	0 (0)
Minor adverse events, No. (%)	1 (3.5)	1 (3.0)
Hematoma	0 (0)	1 (3.0)
New plaque	1 (3.5)	0 (0)
Infection	0 (0)	0 (0)
Swelling	0 (0)	0 (0)
Local injection site reaction	0 (0)	0 (0)

Abbreviations: PRP, platelet-rich plasma.

the results may not be applicable to those with severe ED. Lastly, there was potential for bias in the allocation of treatment due to the single researcher responsible for preparing and administering the injections.

Conclusion

The results of our prospective, double-blind, randomized, placebo-controlled clinical trial suggest that 2 injections of intracavernosal PRP separated by 1 month in men with

mild to moderate ED is safe but no more efficacious than a placebo.

Interpretation for Patient Care

The findings of this study suggest that PRP injections did not provide a significant improvement in erectile function compared to placebo at 1 month after treatment. However, there was a trend towards improvement in the PRP group at 3 and 6 months. These results should be interpreted with caution due to the limitations of the study. Further research with larger sample sizes and longer follow-up periods is necessary to determine the potential benefits of PRP as a restorative therapy for ED. Nonetheless, the study contributes to the existing knowledge on treatment options for ED and provides important objective data. ■

“The findings of this study suggest that PRP injections did not provide a significant improvement in erectile function compared to placebo at 1 month after treatment. However, there was a trend towards improvement in the PRP group at 3 and 6 months.”

- Derby CA, Araujo AB, Johannes CB, Feldman HA, McKinlay JB. Measurement of erectile dysfunction in population-based studies: the use of a single question self-assessment in the Massachusetts male aging study. *Int J Impot Res.* 2000;12(4):197-204.
- Burnett AL, Nehra A, Breaux RH, et al. Erectile dysfunction: AUA guideline. *J Urol.* 2018;200(3):633-641.
- Kim SC, Lee YS, Seo KK, Jung GW, Kim TH. Reasons and predictive factors for discontinuation of PDE-5 inhibitors despite successful intercourse in erectile dysfunction patients. *Int J Impot Res.* 2014;26(3):87-93.
- Carvalho AA, Pereira NM, Maroco J, Forjaz V. Dropout in the treatment of erectile dysfunction with PDE5: a study on predictors and a qualitative analysis of reasons for discontinuation. *J Sex Med.* 2012;9(9):2361-2369.
- Shahinyan GK, Weinberger JM, Shahinyan RH, Yang SC, Mills JN, Eleswarapu SV. Analysis of direct-to-consumer marketing of platelet-rich plasma for erectile dysfunction in the US. *JAMA Netw Open.* 2022;5(5):e2214187.

AUA2023 BEST POSTERS

Practice Patterns, Attitudes, and Knowledge Base of Urologists Toward Their LGBTQ Patients

Alex J. Xu, MD

NYU Langone Health, New York, New York

Evan J. Panken, MD

Northwestern Medicine, Chicago, Illinois

Christopher D. Gonzales-Alabastro, MD

Northwestern Medicine, Chicago, Illinois

Hui Zhang, PhD

Northwestern Medicine, Chicago, Illinois

Irene B. Helenowski, PhD

Northwestern Medicine, Chicago, Illinois

Adam B. Murphy, MD

Northwestern Medicine, Chicago, Illinois

Rahul Prabhu, BA

Northwestern Medicine, Chicago, Illinois

Channa Amarasekera, MD

Northwestern Medicine, Chicago, Illinois

It is estimated that at least 7.1% of the US population identifies as lesbian, gay, bisexual, transgender, or queer (LGBTQ).¹ Despite growing acceptance of this population, there is evidence to suggest that LGBTQ people remain medically underserved.^{2,3} Reasons for health care disparities in this population are multifactorial and include perceived discrimination, patients' expectations of rejection, and physicians' lack of awareness and responsiveness to cultural factors specific to LGBTQ patients.³⁻⁵

The Office of Disease Prevention and Health Promotion has included LGBTQ health in the Healthy People 2030 initiative,⁶ which aims to eliminate disparities and improve the health of all groups. A shortage of culturally competent physicians in LGBTQ health was identified as one of the social determinants impacting the health of LGBTQ individuals.⁶

There is some formal guidance from the AUA on how to care for transgender patients.⁷ However, outside of a document outlining differences in sexual health care for gay and bisexual men after treatment for prostate cancer (PCa), resources to guide clinicians remain limited.⁸

We constructed a 35-question survey to assess urologists' contemporary attitudes and practices

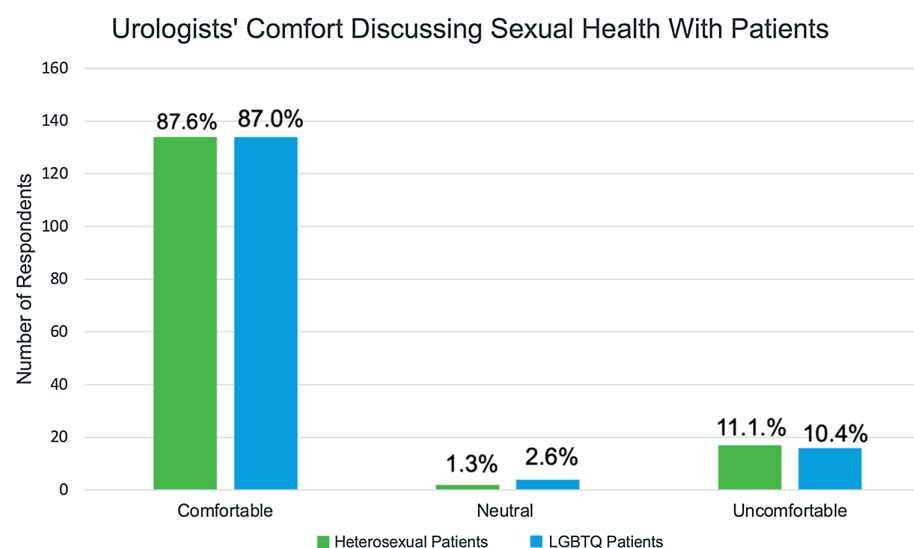


Figure 1. Responses of the entire cohort regarding comfort when discussing sexual health with patients stratified by sexual orientation of the patient (heterosexual vs lesbian, gay, bisexual, transgender, or queer [LGBTQ]).

Table 1. Responses of the Entire Cohort on Beliefs and Practices Surrounding Sexual History Taking

History-taking of LGBTQ patients		
Question	No.	%
On first encounter, I assume patients are heterosexual		
Agree	44	28.8
Disagree	83	54.2
Don't know	26	17
It is important to know my patients' sexual orientation		
Agree	67	43.5
Disagree	66	42.9
Don't know	21	13.6
Your intake forms ask about sexual orientation?		
Yes	35	22.7
No	89	57.8
Don't know	25	16.2
N/A	5	3.2
I actively inquire about sexual orientation		
Agree	54	35.1
Disagree	94	60.4
Don't Know	7	4.5
It is important to know my patient's gender identity		
Agree	100	65.8
Disagree	32	21.1
Don't know	20	13.2

Abbreviations: LGBTQ, lesbian, gay, bisexual, transgender, or queer; N/A, not applicable.

toward sexual minority patients, and we surveyed urologists across the United States about knowledge, comfort, and practice patterns when treating LGBTQ patients and men who have sex with men (MSM). In addition to performing whole-cohort analysis, we also examined responses by various demographic subgroups.

One hundred fifty-four responses met inclusion criteria. Compared to the demographic of practicing US urologists as reported in the 2021 AUA Census,⁹ our cohort tended to skew younger, included more female-identifying and gay-identifying providers, and a greater proportion of academic urologists.

The first section sought to garner a sense of respondents' views toward LGBTQ care in urology. While the majority (88%) of responding practitioners feel comfortable discussing sexual health with LGBTQ-identifying patients (Figure 1) and they do not assume patients are heterosexual (54.2%), the majority do not elicit this information via intake forms (57.8%) or during history-taking (60.7%; Table 1), believing that this information may come up in a more organic manner should it relate directly to the patient's clinical problem. This practice puts the onus on the patient to bring up his or her sexual orientation and begs the question whether patients feel comfortable bringing up a potentially sensitive topic when there are no standardized structures in place for sharing this information.

This practice pattern seems to suggest that physicians believe that identifying as LGBTQ is only important in certain circumstances. Interestingly, this view appears to also be shared by some patients, who felt that their sexual orientation was not important or relevant to their cancer care or perceived their sexual orientation to be private.¹⁰ Both of these attitudes assume that provider and patient

→ Continued on page 43

PRACTICE PATTERNS, ATTITUDES, AND KNOWLEDGE BASE

→ Continued from page 42

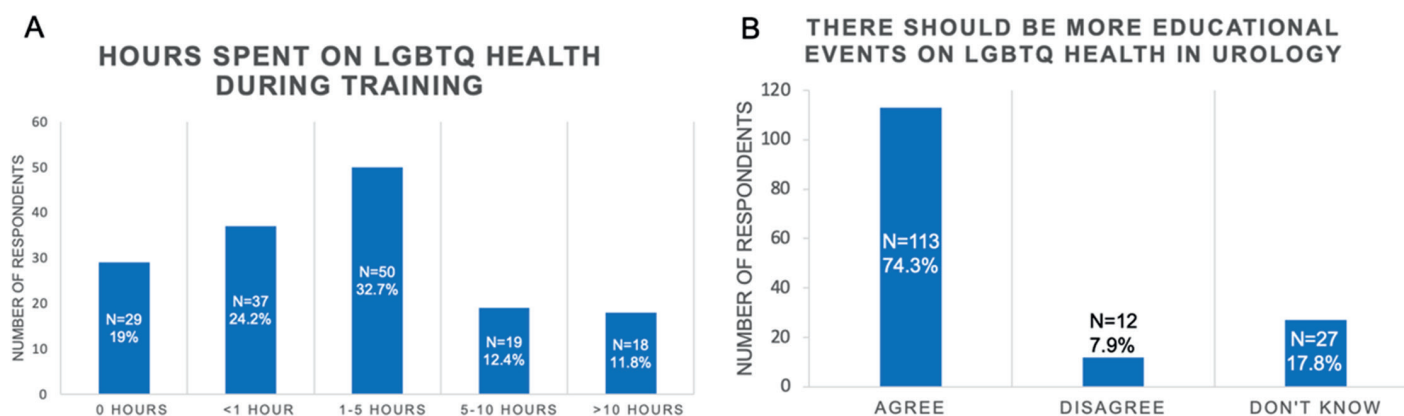


Figure 2. Estimated number of hours spent on lesbian, gay, bisexual, transgender, or queer (LGBTQ) health during training (defined as professional school and continuing education training; A). Responses to whether there ought to be increased educational events on LGBTQ health in urology (B).

Table 2. Practice Trends of Respondents Regarding Gay/Bisexual Men and Men Who Engage in Receptive Anal Intercourse When Discussing Prostate Cancer Diagnosis and Treatment

Practice patterns for MSM patients		
Question	No.	%
Do you think gay/bisexual men have different health concerns with regard to prostate cancer compared to straight patients?		
Yes	73	47.7
No	80	52.3
Do you think stimulation of the prostate anally is a source of sexual pleasure for men?		
Yes	98	63.6
No	8	5.2
I'm not sure	48	31.2
When ordering PSA, do you routinely ask your patients to abstain from receptive anal intercourse or sexual activity that may simulate the prostate rectally for 48 h prior?		
Yes	29	19
No	60	39.2
I ask patients to refrain from sexual activity but do not specify receptive anal intercourse	48	31.4
I do not routinely order PSA in my practice	11	7.2
I do so for gay and bisexual men only	3	2
Other	2	1.3
If a patient who engages in receptive anal intercourse undergoes treatment for prostate cancer, when would you say he could resume this activity?		
1-2 wk	4	2.6
2-4 wk	5	3.3
4-6 wk	41	27.0
6-8 wk	52	34.2
After 8 wk	50	32.9
How important is it to assess sexual satisfaction in men who have receptive anal intercourse when assessing sexual function after treatment for prostate cancer?		
Important	85	55.9
Neutral	61	40.1
Not important	6	3.9

Abbreviations: MSM, men who have sex with men; PSA, prostate-specific antigen.

alike are actively considering whether identifying as LGBTQ applies to a given clinical presentation and will broach the topic if necessary, which may not represent a best practice.

The second section of the survey focused on respondents' feelings toward LGBTQ health disparities education. A majority (32.7%) reported 1-5 hours of LGBTQ health training, 74.3% believe more training is needed (Figure 2), 74.5% agreed to being listed as an LGBTQ-friendly provider currently, and 65.8% felt they needed additional training.

Respondents were largely open to ongoing professional education on the care of LGBTQ patients. Academic urologists reportedly spent more time on LGBTQ health during professional school and continued training. This may be attributed to some degree of recall bias as academic urologists by definition engage in more didactic events during the course of their careers. Alternatively, academic urologists may more readily have access to LGBTQ-focused continuing education at their institutions.

The final section of the survey included both subjective and objective questions which focused on specific details of urological care for LGBTQ/MSM patients. While a significant percentage of physicians reportedly understand that the prostate may be a source of sexual pleasure (63.6%) and that MSM patients may have different health concerns related to prostate cancer, fewer implement this understanding during patient encounters. This is evidenced by lower reported rates of evaluating sexual satisfac-

tion after PCa treatment, a lack of knowledge in some specifics, and the tendency to avoid explicitly acknowledging that the prostate may be stimulated when counseling patients prior to testing (Table 2). This may in part be due to the fact that "PCa treatment" is a vague term and encompasses a growing number of modalities including radiation and focal therapy in addition to radical prostatectomy. It would have been helpful to understand how respondents might change counseling in response to the sexual orientation.

The results of our study demonstrate that urologists across subgroups are aware that LGBTQ patients may require variation of care from heterosexual patients. However, younger urologists engaged in academic practice appear better equipped to implement these beliefs into everyday practice. They are more likely to inquire about sexual orientation both in written and verbal form, agree to more formal education on LGBTQ care, and to be listed publicly as LGBTQ-friendly providers. Furthermore, when asked specific questions pertaining to LGBTQ patient care such as anal stimulation of the prostate or assessing sexual function of men who engage in receptive anal intercourse after PCa treatment, younger physicians appear to be more familiar with such scenarios.

While it is reassuring that there is overall a strong desire from practicing urologists to be educated and to create a safe space for their LGBTQ patients, ongoing education remains necessary. This education no longer needs to focus on the fact that differences exist between LGBTQ and heterosexual patients but on the specifics of these differences and how to apply this knowledge in order to implement LGBTQ-friendly best practices which are effective in addressing the needs of a rapidly aging LGBTQ population. ■

1. Jones JM. LGBTQ Identification in U.S. Ticks Up to 7.1%. Gallup, 2022. Accessed May 8, 2022. <https://news.gallup.com/poll/389792/LGBTQ-identification-ticks-up.aspx>
2. Simoni JM, Smith L, Oost KM, Lehavot K, Fredriksen-Goldsen K. Disparities in physical

→ Continued on page 44

PRACTICE PATTERNS, ATTITUDES, AND KNOWLEDGE BASE

→ Continued from page 43

- health conditions among lesbian and bisexual women: a systematic review of population-based studies. *J Homosex*. 2017;64(1):32-44.
- Jackson CL, Agenor M, Johnson D, Austin SB, Kawachi I. Sexual orientation identity disparities in health behaviors, outcomes, and services use among men and women in the United States: a cross-sectional study. *BMC Public Health*. 2016;16(1):807.
 - Kamen C, Palesh O, Gerry A, et al. Disparities in health risk behavior and psychological distress among gay versus heterosexual male cancer survivors. *LGBTQ Health*. 2014;1(2):86-92.
 - The Joint Commission. *Advancing Effective Communication, Cultural Competence, and Patient- and Family-centered Care for the Lesbian, Gay, Bisexual, and Transgender (LGBTQ) Community: a Field Guide*. 2011. Accessed May 8, 2022. https://www.jointcommission.org/-/media/tjc/documents/resources/patient-safety-topics/health-equity/lgbtfieldguide_web_linked_verpdf.pdf
 - Office of Disease Prevention and Health Promotion. Lesbian, Gay, Bisexual and Transgender Health. 2017. Accessed May 8, 2022. <https://health.gov/healthypeople/objectives-and-data/browse-objectives/lgbt>
 - Smith S. Genital Gender-Affirming Surgery and Urologic Care Overview. 2023. Accessed May 8, 2022. <https://university.auanet.org/core/care-of-transgender-and-gender-non-confirming-patients/genital-gender-affirming-surgery-and-care-of-transgender-and-gender-diverse-patients/index.cfm>
 - Agochukwu NQ, Wittmann D. Sexual health care in prostate cancer survivorship. *Update Series*. 2019;38:Lesson 13.
 - American Urological Association. *The State of the Urology Workforce and Practice in the United States*. 2021. Accessed October 23, 2022. <https://www.auanet.org/research-and-data/aua-census/census-results>
 - Lisy K, Peters MDJ, Schofield P, Jefford M. Experiences and unmet needs of lesbian, gay, and bisexual people with cancer care: a systematic review and meta-synthesis. *Psychooncology*. 2018;27(6):1480-1489.

AUA2023 BEST POSTERS

Tissue Resident Macrophages Are Associated With Randall's Plaques

Heiko Yang, MD, PhD

University of California, San Francisco

Marshall Stoller, MD

University of California, San Francisco

Randall's plaques lie at the heart of calcium oxalate kidney stone formation, yet how these plaques form at the tip of the renal papilla has been a century-old puzzle. Recent evidence suggests there may be parallels between Randall's plaque formation and atherosclerosis—mineralization that occurs within the wall of blood vessels—regarding the role of macrophages, an omnipresent immune cell type with diverse biological functions. It has been hypothesized that different kinds of macrophages (M1 or M2 polarized) can interact with the papillary microenvironment to either promote or inhibit mineralization. Too much of the “wrong” kind of macrophage might cause Randall's plaques to form.

To better understand the nature of these macrophages, we performed snRNAseq (single nucleus RNA sequencing) of human Randall's plaque tissue, which we obtained via endoscopic biopsy during kidney stone procedures. This powerful sequencing technology is used to profile and compare gene expression cell by cell. In our study, it allowed us to identify the macrophage populations and determine what makes those associated Randall's plaques different from

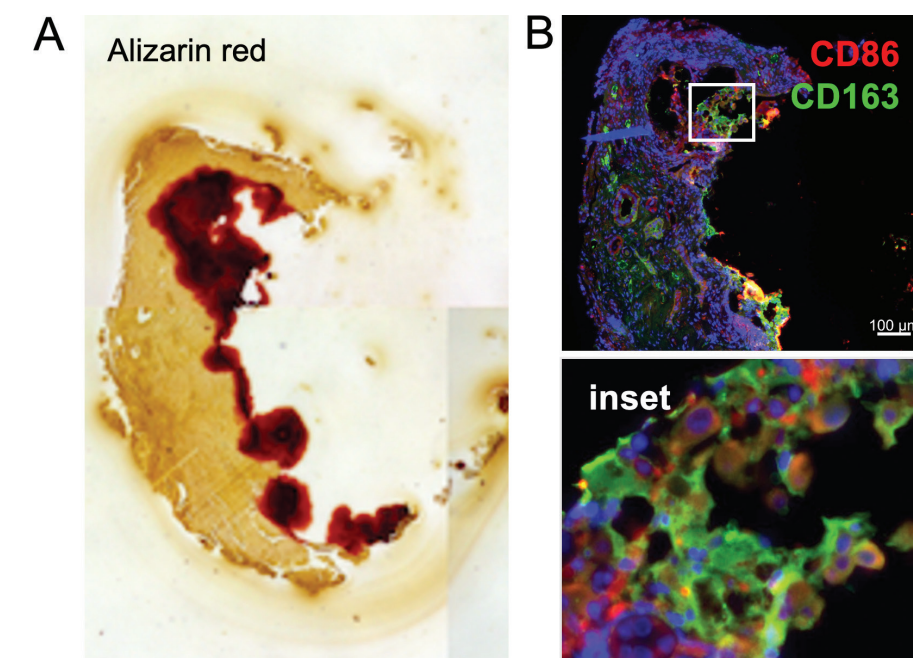


Figure. Colocalization of macrophages and mineral within a Randall's plaque. A, Alizarin red staining of Randall's plaque tissue identifying areas of calcification. B, Immunofluorescent staining of same tissue using CD86 (M1 marker) and CD163 (M2 marker).

other macrophages in the kidney. We found that rather than being derived from circulating monocytes, which would be typical for an inflammatory process, Randall's plaque macrophages are tissue resident with an embryonic origin.

This result is highly surprising. For one, this adds an interesting twist in the debate about how inflammation influences Randall's plaque formation. Studies of monocyte-derived macrophages in mouse models have demonstrated that pro-inflammatory (M1) polarization promotes renal mineralization more so than anti-

inflammatory (M2) polarization. Tissue resident macrophages are more M2-like in nature, however, and our snRNAseq data show that they express some M2-associated surface markers, which we confirmed with immunofluorescent staining (see Figure). Since they are not monocyte derived, they may be involved in an entirely separate activation pathway. Regardless, they do produce osteopontin, osteonectin, and collagen, genes that have been implicated in biomineral formation.

Another surprising aspect of our findings is that these macrophages

are not normally found at the papillary tip. In the landmark study that comprehensively mapped the immune cells in the kidney from embryonic development to adulthood, tissue resident macrophages were located exclusively in the cortex.¹ Understanding how these macrophages relocate from the cortex to the papilla may unlock clues about their physiological role and how this relates to Randall's plaque formation. Interestingly, our preliminary analyses suggest chemokine signaling from the loops of Henle may be responsible for attracting these cells to the papillary tip. One possible mechanism could be that chronic cellular stress at the loop of Henle recruits tissue resident macrophages to promote healing, and Randall's plaques are a byproduct of their activity in this location due to the high solute concentrations.

Our results call for new functional studies to understand how these macrophages influence biomineralization in the kidney. While our story generates more questions than answers, identifying this unexpected culprit was a critical step in solving this age-old mystery. Ultimately, unraveling the mechanism of Randall's plaque formation would enhance our understanding of kidney stone disease and highlight new targets for stone prevention therapy. ■

1. Stewart BJ, Ferdinand JR, Young MD, et al. Spatiotemporal immune zonation of the human kidney. *Science*. 2019;365(6460):1461-1466.

RADIOLOGY CORNER

Stereotactic Ablative Radiation for Primary Renal Cell Carcinoma: A Promising Alternative

Mohannad A. Awad, MD, MAS
University of Texas Southwestern, Dallas

Raquibal Hannan, MD, PhD
University of Texas Southwestern, Dallas

Jeffrey A. Cadeddu, MD, FRCS(Glasg)
University of Texas Southwestern, Dallas

Clinical Case

An 83-year-old gentleman with a history of intermediate-risk prostate cancer that was treated with definitive external beam radiation therapy 6 years ago presented with hematuria and underwent a full workup, which was negative aside from a right renal cyst and an incidental 1.7-cm enhancing left upper pole renal mass that was suspicious for renal cell carcinoma (RCC). After discussion with the patient, he was placed on active surveillance. Interval imaging in 6 months showed an increase in size of the mass to 2.1 cm. Interval imaging at 12 months revealed the mass increased in size to 3.1 cm in greatest diameter, extending to the renal sinus (Figure 1).

Treatment options were discussed with the patient and, given his age, life expectancy, and refusal to undergo any anesthesia, he elected to proceed with stereotactic ablative radiation (SAbR). He underwent a renal mass biopsy, which confirmed clear cell RCC, International Society of Urological Pathology nucleolar grade 2/4. A renal scan revealed split function of 53% to the left kidney. He then received the SAbR of 3600 cGy, delivered in 3 fractions of 1,200 cGy each (Figure 2). He tolerated the procedure well with mild (grade 1) fatigue.

He was followed with interval abdominal imaging every 6 months, which showed initial stability followed by a steady decline in tumor size, which stabilized to 1.1-cm scar tissue by 3 years (Figure 3). Interestingly, the mass continued to enhance. A repeat renal mass biopsy 1 year post-SAbR showed hyalinization, necrosis, and significantly decreased cellularity with rare in-

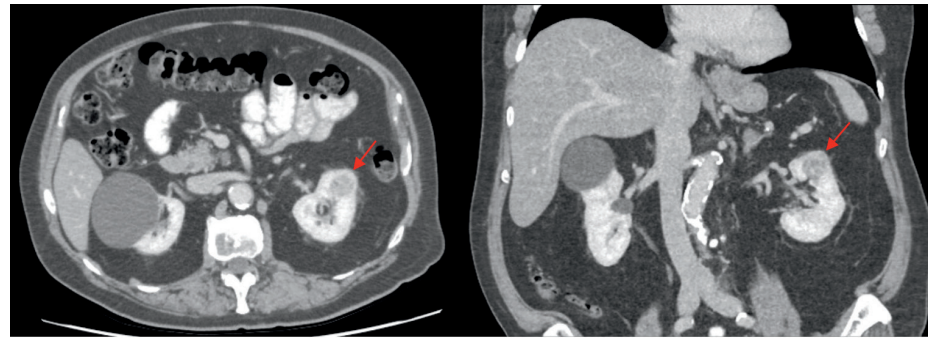


Figure 1. Pre-treatment CT images demonstrating the 3.1-cm left upper pole renal mass (red arrow).

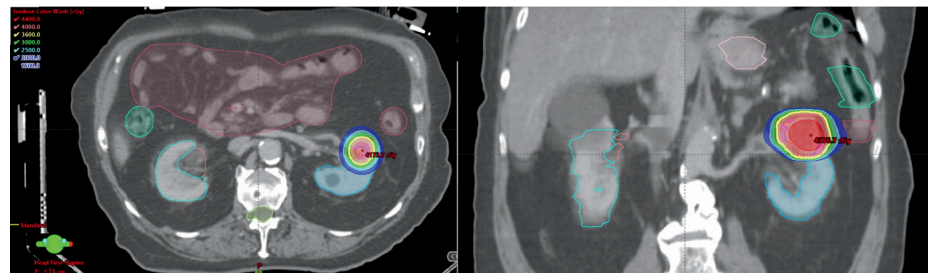


Figure 2. CT images demonstrating the stereotactic ablative radiation treatment.



Figure 3. CT images at 3 years post-stereotactic ablative radiation showing the decline of tumor to 1.1 cm with sustained enhancement (red arrow).

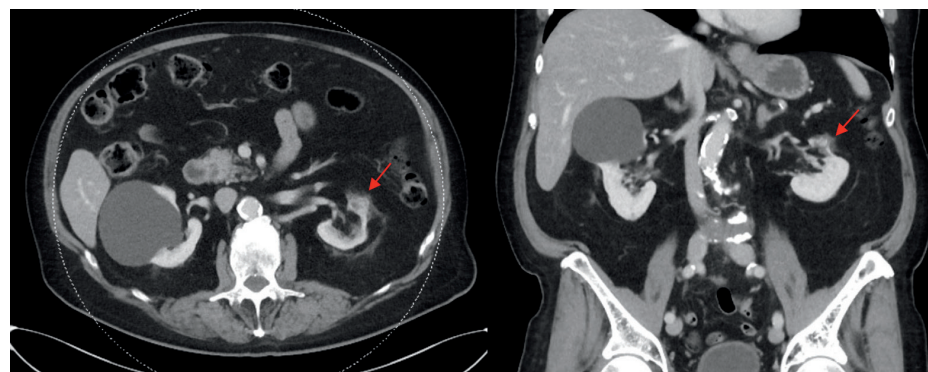


Figure 4. CT images 5 years post-stereotactic ablative radiation showing the heterogenous enhancement of the tumor area with scarring of the left upper pole (red arrow).

tact tumor cells that did not express Ki67, suggesting nonproliferation.

The last CT scan in 5 years post-SAbR showed left renal scarring, with central area of heteroge-

neous enhancement measuring 1.1 cm, which is not changed from the CT scan done a year prior (Figure 4). At last follow up 5.5 years post-SAbR he is doing well clinically without any

side effects. His creatinine and glomerular filtration rate remain stable at 1.1 mg/dL and 61 mL/min/1.73 m², respectively.

Discussion

Radiation therapy has historically been considered ineffective for treating RCC, possibly due to the radio-resistance to conventional radiation and limitations in radiation delivery. Treating kidney tumors poses technical challenges, including limited tolerance of the surrounding radiosensitive organs at risk (ie, small bowel), and difficulties in precisely targeting a tumor that is constantly moving with respiration.

SAbR is a modern treatment technique that delivers a highly precise and focused dose of radiation to the target, either in a single or few fractions.¹ Unlike conventional radiation techniques, SAbR uses multiple technological advances such as intensity modulation, image guidance, motion tracking or motion gating which compensates for respiratory movement and allows accurate radiation delivery. This enables the application of high-dose radiation precisely to the tumor, effectively ablating it while minimizing radiation dose to the nearby organs and maximally preserving overall renal function.²

Early studies on animals and small patient groups have shown the feasibility and safety of SAbR for renal tumors, with complete necrosis within the targeted area and no damage to adjacent tissues.^{2,3} A multi-institutional retrospective study by the International Radio-surgery Consortium of the Kidney involving 190 patients with primary RCC treated with SAbR with a median follow-up of 5 years showed a 5.5% local failure rate. The estimated 3-year, 5-year, and 7-year cancer-specific survival were 95.5%, 92%, and 92%, respectively.⁴ A recent large review of 87 studies

STEREOTACTIC ABLATIVE RADIATION FOR PRIMARY RENAL CELL CARCINOMA

→ Continued from page 45

that included 589 primary RCCs revealed a local control (LC) rate of more than 90%.⁵ Most of these studies focused on radiographic LC. Interestingly, as was observed in the above case, tumor enhancement on CT post-SAbR is typically not changed, suggesting that the long-term effect of SAbR does not disrupt the vasculature or tissue architecture within the tumor, as may be expected from other ablation techniques. The pathologic evidence of radiation effects, nonproliferation, and induction of terminal replicative arrest were recently demonstrated in one of the first prospective phase 2 trials of SAbR for primary RCC that enrolled 16 patients and reported a LC of 94.5% at 3 years. One-year post-SAbR tumor biopsy revealed radiation effects of reduced cellularity, hyalinization, and necrosis. Immunohistochemistry showed the rare remaining tumor cells to

be Ki67 negative and p16 positive suggestive of cellular senescence. The study further performed spatial transcriptomic analysis on pairs of pre- and posttreatment tumor tissue to demonstrate activation of senescence pathway in SAbR treated primary RCC.⁶

Considering its precision, SAbR is not limited to the tumor location within the kidney and is therefore able to effectively treat endophytic tumors including those adjacent to the renal pelvis.⁶ In addition, retrospective studies have shown SAbR to be effective in $\geq T1b$ renal tumors with LC rates $>95\%$.⁵ With regards to the effect on renal function, a systematic review and meta-analysis of SAbR for primary RCC demonstrated a mean change in estimated glomerular filtration rate before and after SAbR of -7.7 mL/min.⁷ The majority of SAbR toxicities are mild, including nausea, fatigue, and dermatitis. The mean rate of pos-

sibly related grade 3-4 toxicities is 1.5% including pyelonephritis and gastric and duodenal ulcers.^{5,7}

Given these results, the current guidelines from the European Society of Medical Oncology, European Association of Urology, and the National Comprehensive Cancer Network consider SAbR as an alternative treatment for patients with localized RCC who are unable to undergo surgery due to poor performance status or unsuitable clinical condition.⁸⁻¹⁰

We believe this emerging technique holds great promise, characterized by rapid evolution and encouraging outcomes. Our selected patient presented is currently 89 years old, doing well with no signs of progression up to 5 years after SAbR. ■

1. Potters L, Kavanagh B, Galvin JM, et al. American Society for Therapeutic Radiology and Oncology (ASTRO) and American College of Radiology (ACR) practice guideline for the performance of stereotactic body radiation therapy. *Int J Rad Oncol Biol Phys*. 2010;76(2):326-332.
2. Ponsky LE, Mahadevan A, Gill IS, Djemil T,

Novick AC. Renal radiosurgery: initial clinical experience with histological evaluation. *Surg Innov*. 2007;14(4):265-269.

3. Ponsky LE, Crownover RL, Rosen MJ, et al. Initial evaluation of cyberknife technology for extracorporeal renal tissue ablation. *Urology*. 2003;61(3):498-501.
4. Siva S, Ali M, Correa RJ, et al. 5-Year outcomes after stereotactic ablative body radiotherapy for primary renal cell carcinoma: an individual patient data meta-analysis from IROCK (the international radiosurgery consortium of the kidney). *Lancet Oncol*. 2022;23(12):1508-1516.
5. Ali M, Mooi J, Lawrentschuk N, et al. The role of stereotactic ablative body radiotherapy in renal cell carcinoma. *Eur Urol*. 2022;82(6):613-622.
6. Hannan R, McLaughlin MF, Pop LM, et al. Phase 2 trial of stereotactic ablative radiotherapy for patients with primary renal cancer. *Eur Urol*. 2023;10.1016/j.eururo.2023.02.016.
7. Correa RJ, Louie AV, Zaorsky NG, et al. The emerging role of stereotactic ablative radiotherapy for primary renal cell carcinoma: a systematic review and meta-analysis. *Eur Urol Focus*. 2019;5(6):958-969.
8. Escudier B, Porta C, Schmidinger M, et al. Renal cell carcinoma: ESMO clinical practice guidelines for diagnosis, treatment and follow-up. *Ann Oncol*. 2019;30(5):706-720.
9. Ljungberg B, Albiges L, Abu-Ghanem Y, et al. European Association of Urology guidelines on renal cell carcinoma: the 2019 update. *Eur Urol*. 2019;75(5):799-810.
10. National Comprehensive Cancer Network. *Kidney Cancer, Version 2.2022*. Accessed May 15, 2023. Available at: https://www.nccn.org/professionals/physician_gls/pdf/kidney.pdf

American Medical Association House of Delegates Annual Meeting

Hans Arora, MD, PhD

AUA Delegate, American Medical Association House of Delegates
Chair, Urology Caucus, American Medical Association
University of North Carolina, Chapel Hill

The 2023 Annual Meeting of the American Medical Association (AMA) House of Delegates—the principle policy-making body of the AMA—was held on June 9-13, 2023 in Chicago, Illinois. Your AUA was represented by Delegates Hans Arora, MD, PhD (Chapel Hill, North Carolina) and Richard Pelman, MD (Bellevue, Washington), Alternate Delegate Jason Jameson, MD (Phoenix, Arizona), and Resident & Fellow Section Delegate Ruchika Talwar, MD (Nashville, Tennessee). For several weeks prior to the meeting, our team, including the incredible staff of the AUA Governance & Policy Division, reviewed several hundred pages of reports and resolutions related to health policy, med-

ical education, medical ethics, and public health, in anticipation of this biannual meeting.

One of the most significant policy points from this year's meeting was the passage of a resolution introduced by a national sample of state medical societies that establishes fixing the Medicare physician payment system as the explicit primary national legislative priority of the AMA. While this has long been an AMA priority, this new policy puts the issue at the organization's very forefront. Organized medicine, including the AUA, has been challenged with lobbying for short-term patches that only temporize the problem. When adjusting for inflation, Medicare physician payment has declined by 26% from 2001 to 2023. Additional resolutions called for the physician payment schedule to be appropriately inflation adjusted in keeping with the Medicare Economic Index

and annual reporting by the AMA to its membership on the progress of congressional legislative activity on these issues. As urologists, we are no strangers to the challenges associated with a broken Medicare payment system that is clearly unsustainable in the longer term. Further information on this initiative can be found at <https://fix-medicarenow.org/>.

“As urologists, we are no strangers to the challenges associated with a broken Medicare payment system that is clearly unsustainable in the longer term.”

There were several policies related to public health, science, and technology related to the practice of urology that were passed at this meeting as well. The AUA, in collaboration with the American Association of Clinical Urologists presented and successfully passed a resolution titled “Pharmacists Prescribing for Urinary Tract Infections,” which directed the AMA to take advocacy action against the practice of pharmacists diagnosing and treating urinary tract infections without the oversight of a physician. This is an issue that is currently being faced by the AUA State Advocacy Committee, as there has been proposed legislation that would permit pharmacists to do this (as well as diagnose and treat a number of other health conditions) in several states, including Connecticut, Mississippi, Montana, New

→ Continued on page 47

AMERICAN MEDICAL ASSOCIATION HOUSE OF DELEGATES ANNUAL MEETING

→ Continued from page 46

Mexico, Oklahoma, and Virginia. As urologists, we know very well how this could result in and further exacerbate issues of overtreatment, over- and underdiagnosis, and misdiagnosis of urinary tract infections without proper physician oversight.

One topic of particular interest to our academic colleagues was related to the proposed National Institutes of Health Public Access Plan. Currently, federally funded research is embargoed by scientific and medical journals for 12 months prior to public release. During this 12-month period, published articles are accessible to individuals with a subscription to a medical journal, as all AUA members have access to *The Journal of Urology*[®] as a benefit of membership. The proposed plan would do away with the 12-month embargo, the unintended consequence of which would be a substantial disruption of the financial structure of many major medical journals which rely heavily on subscription revenue to support the publication and dissemination of high-quality scholarly activities. The AUA, along with many other national medical specialty societies, introduced and successfully passed policy asking the AMA to work with Congress to raise awareness of the potential adverse consequences of this plan and work to mitigate these issues while ensuring continued equi-

table access to clinical research.

Telemedicine and artificial intelligence continue to be topics of interest at the AMA, and policy was introduced asking the AMA to advocate for the preservation of the physician telemedicine waiver and reimbursement at parity with in-person visits beyond December 31, 2024, as well as encourage research to determine how telehealth can improve health outcomes particularly for patients who are underserved and seniors with chronic health conditions.

Gender-affirming care was another topic of discussion. A resolution introduced by the Endocrine Society and supported by the AUA titled “Protecting Access to Gender Affirming Care” called on the AMA to advocate for opposition at the national and state levels to any and all criminal and legal penalties levied against physicians, institutions, patients, and their families who provide, seek, or receive gender-affirming care. Our AUA Transgender Working Group has been heavily involved in tracking legislation state by state on restrictions related to the provision of gender-affirming care, as urologists are one of the major medical specialties involved in gender affirmation surgeries.

Finally, several elections took place as part of the Annual Meet-



Figure. Members of the urology delegation to the American Medical Association. Left to right: Willie Underwood III, MD, MSc, MPH, American Medical Association Board of Trustees; William Reha, MD, American Association of Clinical Urologists Delegate; Hans Arora, MD, PhD, AUA Delegate; Ruchika Talwar, MD, AUA Resident & Fellow Section Delegate and AUA H. Logan Holtgrewe Legislative Fellow; Richard Pelman, MD, AUA Delegate; Denise Asafu-Adjei, MD, AUA Gallagher Scholar; Jason Jameson, MD, AUA Alternate Delegate.

ing business. Jesse Ehrenfeld, MD, MPH, an anesthesiologist from Milwaukee, Wisconsin, was elected President of the AMA, and Bruce Scott, MD, an otolaryngologist from Louisville, Kentucky, was elected President-elect. Most excitingly for the field of urology, this year we saw the reelection of fellow urol-

ogist Willie Underwood III, MD, MSc, MPH (Buffalo, New York), to the AMA Board of Trustees. Dr Underwood will be serving as Chair of the AMA Board of Trustees this year and is only the second urologist to have served on the AMA Board of Trustees. Please join us in congratulating Dr Underwood! ■

UROLOGY CARE FOUNDATION 2023 RESEARCH AWARDS OF DISTINCTION

Distinguished Scholar Alumnus Award

Seth P. Lerner, MD

Baylor College of Medicine, Dan L. Duncan Cancer Center, Houston, Texas

I am honored and humbled for the tremendous honor of receiving the 2023 Urology Care Foundation Distinguished Scholar Alumnus Award. I was an AUA AFUD (American Foundation for Urologic Disease) scholar during my oncology fellowship at the University of Southern California with Don Skinner and Peter Jones as my clinical and research mentors. The AUA's long-standing commitment to support young in-

vestigators with these awards and peer-reviewed research funding is

“We all face daily challenges balancing the demands of a busy clinical practice and establishing oneself as an independent investigator.”

critical to the success of urological surgeon-scientists. We all face daily challenges balancing the demands of a busy clinical practice and establishing oneself as an independent investigator. Dr Skinner and other mentors encouraged me to be a finisher, noting that it is not research until it is published. Peter Jones fostered a vibrant collaborative lab experience where I honed the basics of translational research. He coined the term “molecular urologist,” which perhaps presaged my involvement 2 decades later in The Cancer Genome

Atlas Project in Bladder Cancer. This experience provided me a foundation to build upon, and when I returned to Baylor to start my academic career I was encouraged by many basic science and clinical faculty who shared a similar vision of supporting young investigators in their mission to build a research program.

We have been successful in building a multidisciplinary team focused on translational and clinical research focused on bladder and upper tract

→ Continued on page 48

DISTINGUISHED SCHOLAR ALUMNUS AWARD

→ Continued from page 47

“The AUA’s long-standing commitment to support young investigators with these awards and peer-reviewed research funding is critical to the success of urological surgeon-scientists.”

cancers. I initiated and continue to lead the Partnership for Bladder Cancer Research program, which is funded in part by extraordinary philanthropic support including the Beth and Dave Swalm Chair in Urologic Oncology. As Vice-chair for Faculty Affairs, I mentor our younger facul-

ty to help them develop and achieve their personal and professional missions and to integrate them into the department. My research interests include use of selective estrogen receptor modulators for treatment of bladder cancer, gene therapy, surgical quality and outcomes, and integrated proteogenomic characterization of bladder and upper urinary tract cancers. I have 3 decades of experience as a clinical investigator for both National Cancer Institute and industry-funded clinical trials.

Through the support of countless mentors and professional colleagues I have been continuously engaged in clinical trials and hold leadership positions in SWOG (the Southwest Cancer Chemotherapy Study Group) where I have personally led practice-changing phase III trials and mentored several young investigators leading their own large phase II and phase III trials within SWOG and across the National Clinical Trials Network. For the last 10 years I have been active-

ly engaged with the FDA (Food and Drug Administration), collaborating with many leaders in the bladder cancer field to engage the FDA to organize and hold workshops to address several disease states in bladder cancer. We also collaborated on the development of guidance documents for drug development and defining a registration pathway for patients with bacillus Calmette-Guérin-unresponsive nonmuscle-invasive bladder cancer. This led to the first new drug approval in 2020 for any nonmuscle-invasive disease state since 1998. I was the founding cochair of the Bladder Cancer Task Force, which is a National Cancer Institute/Cancer Therapy Evaluation Program Committee charged with helping investigators in the cooperative groups develop clinical trial concepts, and review and approve for submission to the Genitourinary Steering Committee.

I have had a long-standing desire to bring the multidisciplinary re-

search field together to characterize bladder cancer at the genomic level. The Cancer Genome Atlas Project was planning to do this for bladder cancer, and I co-lead this effort with a team of world-class genomics and bioinformatic experts. We published our first marker paper in 2014, and I kept the team together and published a more comprehensive analysis tripling the cohort size in 2018. We are now building on these efforts to describe the bladder proteome focusing on patients with a high unmet need who do not respond to standard of care neoadjuvant chemotherapy. This will be the first integrated analysis at the DNA, RNA, and protein level interrogating prechemotherapy tumor tissue using fresh tissue, and we expect to publish these findings in the next few months. I am forever grateful to the AUA and its leaders for paving the way for my career and supporting these programs vital to our specialty and our patients and caregivers. ■

AUA LEADERSHIP PROGRAM

Piyush Agarwal, MD

Piyush K. Agarwal, MD
The University of Chicago, Illinois

I was pleasantly surprised to find out that I had been selected to the 2023-2024 AUA Leadership class. Each year, the applicant pool reflects the best and the brightest rising stars of the AUA, and to be selected among this cohort is truly a privilege. This was especially sweet in that I had applied in a previous year and was not selected. So, either my waning period of eligibility or my perseverance paid off! Either way, I am truly thankful to my colleagues and advocates in the North Central Section and the National Leadership who bestowed me with this honor.

Selection into the AUA Leadership Program is affirmation of my capabilities as a leader. Throughout

our training as urologists, we have had to be leaders within our various organizations in college, medical school, and residency. We are leaders every day in our clinic, the operating room, and our research endeavors as we direct a group of individuals to work cohesively as a team. Leadership is natural to the practice of our careers and all urologists possess this attribute. However, along the way, some of us are blessed by amazing colleagues and mentors who provide us with unique opportunities to lead on a greater scale beyond the scope of our clinical and research practices. For me, serving on national advisory and guideline panels, journal editorial boards, and various hospital committees have been some of these opportunities. However, the hardest and most rewarding chal-

lenge has been to serve as the University of Chicago’s urologic oncology fellowship director as I help to mold the future leaders of urologic oncology. I appreciate the AUA for

“Leadership is natural to the practice of our careers and all urologists possess this attribute.”

recognizing my leadership in these various activities.

As a participant in this year’s Leadership Class, I am grateful for being acknowledged for my current leadership skills but am looking for-

ward to developing them further. I am eager to interact with my peers to address challenges that face the AUA and to learn from leaders both within the AUA and from outside sectors such as industry and the government. This networking and collaboration will allow me to learn from the diverse experiences of others. The AUA Leadership Program has a track record of success in having trained current leaders within our field who I admire and emulate. As did my predecessors, I aspire to gain skills and insights into management that will augment my personal growth as a leader. Ultimately, I hope this experience will impact my professional growth by allowing me to consider strategic health care management and leadership positions within my organization, the North Central Section, and the AUA. ■

AUA LEADERSHIP PROGRAM

Janet Kukreja, MD, MPH, FACS

Janet Kukreja, MD, MPH, FACS
University of Colorado, Denver

I am so honored to represent the South Central Section (SCS) of the AUA as a member of the 2023-2024 Leadership Class. Although, I have only been an official SCS member for a few years, I was actually introduced to the SCS when I was a medical student doing research with the University of Kansas. My first abstract presentation was at SCS in 2008. I think it is

safe to say without my foundation and support from some prominent SCS members I would not have

“Acceptance to this leadership class will help improve our gender diversity and advance the AUA as an organization.”

found my residency spot. While I left the SCS for residency, I quickly returned for fellowship at MD Anderson Cancer Center.

I am so grateful to the SCS for my foundation and continued development of both myself and career. Joining the AUA Leadership Class of 2023-2024 will provide me with the next steps in developing my skills to enable me to rise to the leadership roles that I desire. I sincerely want to shape and lead the future of urology.

I am particularly excited to be a role model and mentor to other women in the field of urology. Many women ahead of me have paved the way, but I feel very strongly about mentoring the women around me and helping them lead as well. Acceptance to this leadership class will help improve our gender diversity and advance the AUA as an organization.

I am so thankful for this opportunity and cannot wait to serve in further leadership roles of the SCS as well as the AUA! ■

FIVE QUESTIONS WITH...

5 Questions With Jaime Andrés Cajigas Plata, MD

Jaime Cajigas, MD
Clínica de Marly, Bogotá, Colombia
President, Colombian Society of Urology

1. Why Did You Choose Urology?

I chose urology because it is a field that involves both clinical and surgery skills, and provides relief and cure for very common diseases. My father was a urologist, so I was able to be exposed from a very young age.

2. What Was the Best Advice You Received As a Resident/Trainee?

One of my professors once told me, “Never be the first one to do a procedure that just came out, and never be the last to do something

“One of my professors once told me, ‘Never be the first one to do a procedure that just came out, and never be the last to do something that is not supposed to be done anymore.’ ”

that is not supposed to be done anymore.” So I understand that you have to be patient with new technologies, but you can’t let time

pass to learn what is better for your patients.

3. If You Were Not a Urologist, What Would You Be?

I can’t imagine doing something else. Urology is a fulfilling area of medicine.

4. What Do You See as the Biggest Clinical Challenge in Urology Today? What Is the Biggest Opportunity?

To keep in touch with all the evolution in the field, that at the same time is the biggest opportunity.

5. It’s the Year 2030—What Do You Think Will Be the Biggest Change/Innovation in Urology?

We are seeing right now the change to a decreased need for surgery in most of our field of work, and understanding the causes of most of our diseases for sure will lead to more streamlined treatment. We are going to be exposed to artificial intelligence in the pathways to decisions in both diagnostics and treatments. ■

The AUA is proud to work with partner societies around the world to advance urology. This column spotlights members from our International Member Committee (IMC) and showcases their unique perspectives on the specialty.

FROM THE RESIDENTS & FELLOWS COMMITTEE

Is Laparoscopy Dead in the Era of Robotic Surgery?

José Iván Robles-Torres, MD

Hospital Universitario, Universidad Autónoma de Nuevo León, Monterrey, México

Fred Alain Montelongo-Rodríguez, MD

Hospital Universitario, Universidad Autónoma de Nuevo León, Monterrey, México

José Antonio Zapata-González, MD

Hospital Universitario, Universidad Autónoma de Nuevo León, Monterrey, México

Adrián Gutiérrez-González, MD, PhD

Hospital Universitario, Universidad Autónoma de Nuevo León, Monterrey, México

Introduction of Laparoscopy and Robotics in Urology

Minimally invasive surgery, laparoscopic or robotic, is the preferred approach for many urological procedures. The da Vinci Surgical System was first introduced in 1999, offering innovative technology including 3D vision, EndoWrist instrumentation, ergonomic superiority, and surgical precision; features that, theoretically, surmounted the difficulties preventing the widespread adoption of laparoscopy.¹

These features may specifically help in performing surgeries in fixed narrow cavities such as the pelvis, and, therefore, robot-assisted radical prostatectomy was the index case suited for robotic surgery due to the technical difficulties described in the laparoscopic approach. This technology

“Despite all the technological advantages of robotic surgery, no clear superiority has been demonstrated compared to other approaches in different urological procedures.”

combined the minimally invasive advantages of laparoscopic radical prostatectomy with improved surgeon ergonomics and greater technical ease of suture reconstruction of the vesicourethral anastomosis, and has now become the preferred minimally invasive approach when available.² Surprisingly, a difference of only 3 years separates the first laparoscopic radical prostatectomy, reported by Schuessler et al in 1997, from the first robot-assisted radical prostatectomy, performed by Binder and Kramer in 2000. Since then, simultaneously with the development of robotic surgery, laparoscopic surgery has also undergone considerable development over the years. In fact, the 2 techniques have had a parallel development influencing each other with the technological improvements introduced in one or the other.³

Laparoscopy or Robotics: Which Is Better?

Despite all the technological advantages of robotic surgery, no clear superiority has been demonstrated compared to other approaches in different urological procedures. Several reviews comparing robotic, laparoscopic, and open radical prostatectomy have not shown significant differences in oncologic, urinary, and sexual-function outcomes. Therefore, no surgical approach can be recommended over another. More relevant, the outcomes after radical prostatectomy have been shown to be more related to the surgeon experience and hospital volume. We must not forget that robotic surgery also has important limitations, including its high costs, the absence of haptic feedback, and its limited availability in many countries.

Another important disadvantage of concern of laparoscopy is the learning curve. As mentioned before, radical prostatectomy remains a complex laparoscopic procedure with a steep learning curve. The in-

troductory of the robotic platform and all its features came to simplify the learning of this complex procedure, causing rapid adoption of the robotic technique worldwide. However, laparoscopic surgery is still routinely performed at many centers in Europe, Asia, and Latin America.

Laparoscopic radical and partial nephrectomy is still considered the gold standard treatment for localized renal cancer. The robotic platform has failed to demonstrate any specific advantage over laparoscopy for these procedures and has not been found to be cost-effective. However, the laparoscopic approach is both mentally and physically challenging due to the stress of performing a complex laparoscopic procedure with intracorporeal suturing within a restricted time frame to avoid prolonged warm ischemia, while ensuring the quality of the nephrorrhaphy. The robotic approach enables improved dexterity for tumor excision and easier intracorporeal suturing. However, once again, there is no clear evidence of superiority of one technique over another. Even though the learning curve of robotic partial nephrectomy has been suggested to be lower than the laparoscopic approach, it remains a much more expensive option, which limits its widespread

“In an era when robotic surgery is not globally available and free from flaws, alternative options must be available so we can still offer the benefits of a minimally invasive procedure, and laparoscopy is still the answer.”

application, particularly in developing countries.

Although robotic assistance may help in reducing the learning curve of a procedure, this advantage needs to be viewed in terms of health care economics and patient finances in developing countries. The learning curve of laparoscopy may also be shortened if laparoscopic training is structured and properly incorporated in residency and fellowship programs similar to robotic training programs. Important improvements in the field of laparoscopy, such as 4K ultrahigh definition, 3D vision, advanced sealing devices, laparoscopic robotized wristed instruments, ergonomic platforms with chest supports, armrests, and camera holders, may prove to be more cost-effective with similar results compared to the robotic technology.

Robotic Surgery Remains Technology Not Uniformly Available

Nowadays there are more than 6,500 da Vinci Systems installed in over 67 countries and more than 55,000 surgeons trained to use this system,⁴ about 4,139 in the United States, 1,199 in Europe, 1,050 in Asia, and 342 in the rest of the world.⁵ In Latin America, a total of 88 da Vinci systems are registered, Brazil having the greatest number of systems with 37, followed by Mexico with 10. Many resource-limited countries do not have a robotic platform. This clearly reflects the lack of systems that low-income countries have and is a very strong reason why laparoscopic surgery cannot be discarded.

Robotic Surgery Is Not Exempt From Technical Flaws

Several studies have reported technical problems of the robotic platforms. A recent study

IS LAPAROSCOPY DEAD IN THE ERA OF ROBOTIC SURGERY?

→ Continued from page 50

demonstrated that the incidence of malfunction of the console was very low, with only 0.4% to 3.5%, being only 1% of critical mal-

“Although robotic assistance may help in reducing the learning curve of a procedure, this advantage needs to be viewed in terms of health care economics and patient finances in developing countries.”

function. Various technical issues have been reported, including software and hardware malfunctions, robotic arm joints, optical and power systems, and connector flaws. The most common failure component was the robotic arm and joint systems with 71.4% of all malfunctions. In this scenario, having laparoscopic training makes surgeons confident if they must convert the procedure and still perform a minimally invasive procedure instead of convert to an open procedure.⁶

We personally believe that laparoscopy is an important discipline that cannot just disappear. In an era when robotic surgery is not globally available and free from flaws, alternative options must be available so we can still offer the benefits of a minimally invasive

procedure, and laparoscopy is still the answer.

Returning to the initial question, our answer is: No. Currently, laparoscopy remains the preferred approach for many urologists, especially in the resource-limited settings of developing countries. Even though robot-assisted surgery has been found to be feasible in many urological procedures, it is important to note that feasibility by itself should not be translated into superiority.

Since its inception in 2002, the Residents and Fellows Committee has represented the voice of trainee members of the AUA. The Committee’s mission is to address the educational and professional needs of urology residents and fellows, and promote engagement between residents and fellows and

the AUA. The Committee welcomes your input and feedback! To contact the Committee, or to inquire about ways to get more involved, please email rescommittee@AUAnet.org. ■

1. Bansal D, Chaturvedi S, Maheshwari R, Kumar A. Role of laparoscopy in the era of robotic surgery in urology in developing countries. *Indian J Urol.* 2021;37(1):32-41.
2. De Marchi D, Mantica G, Tafuri A, Giusti G, Gaboardi F. Robotic surgery in urology: review from the beginning to the single-site. *AME Med J.* 2022;7:16.
3. Yates DR, Vaessen C, Roupret M. From Leonardo to da Vinci: the history of robot-assisted surgery in urology. *BJU Int.* 2011;108(11):1708-1713.
4. Intuitive Surgical. *Intuitive Reaches 10 Million Procedures Performed Using da Vinci Surgical Systems.* 2021. Accessed June 27th, 2023. <https://isrg.intuitive.com/news-releases/news-release-details/intuitive-reaches-10-million-procedures-performed-using-da-vinci>
5. Intuitive Surgical website. 2023. Accessed June 27th, 2023. <https://www.intuitive.com/en-us/about-us/company>
6. Chen CC, Ou YC, Yang CK, et al. Malfunction of the da Vinci robotic system in urology. *Int J Urol.* 2012;19(8):736-740.

FROM THE AUA EDUCATION COUNCIL

Institute for Leadership and Business

Jay D. Raman, MD, FACS,
FRCS(Glas)
Chair, AUA Office of Education

The function of leadership is to produce more leaders, not more followers.

Ralph Nader

In 2022, recognizing the need for additional leadership opportunities and business education to support our membership, the AUA Board of Directors approved creation of the new AUA Institute for Leadership and Business.

One year later, the AUA now has a library of education available! For convenience, all of AUA’s leadership activities and business-related education are housed in 1 location on the AUA’s website (<https://www.auanet.org/leadership-and-business>). Beyond educational content, this site also includes information on the AUA’s Leadership Program, which just launched its 10th Leadership Class in this year-long program.

To support the Leadership Program, a new leadership and busi-

ness education track was offered at AUA2023 and included a kickoff 4-hour course titled “Leading with a Purpose: Perspectives in Successful Leadership.” Moderators Sanford Siegel, MD, Chairman of United Urology Group, and Jennifer Miles-Thomas, MD, President and CEO of Urology of Virginia hosted a dynamic faculty discussion focusing on the varying perspectives of leadership including:

- Medical Leadership: Past, Present and Future (Kevin Loughlin, MD)
- The Essentials of Successful Clinician Leadership (Larry Kaiser, MD)
- Leadership in a Challenging Medical Landscape (J. Stephen Jones, MD)

In addition to the above-mentioned activity, AUA2023 also had 12 additional hours of programming covering a range of topics including:

- Work Smarter, Not Harder: Improving Clinic Efficiency
- Understanding Compensation Models in Urologic Practice:

Academics, Employed, and Private Practice

- Avoiding Medical Malpractice—What You Need to Know, What You Can Do
- Teleurology: Practical Guide to Improve Patient Access to Urologic Care
- Time Efficiency and Productivity Hacks for the Busy Urologist
- Personal Finance Boot Camp

“To ensure that our leadership and business-related offerings are available to everyone, the brand new, and free, AUA Leadership and Business podcast was launched in January 2023.”

and Financial Independence for the Urologist

Importantly, all of this great content is not just for those who made the trip to AUA2023 in Chicago. All 16 hours of programming for this leadership and business education track is available on demand at *AUA University*.

The AUA Leadership and Business Education Committee, led by Kenneth Berger, MD, JD, is currently reviewing the course submissions for AUA2024. Our intent is to offer a new set of courses which builds on the foundation provided in 2023.

To ensure that our leadership and business-related offerings are available to everyone, the brand new, and free, AUA Leadership and Business podcast was launched in January 2023. It focuses on content to help residents transition into practice and for all urologists to be successful leaders and managers.

If you were not aware, the AUA also offers education to support

→ Continued on page 52

INSTITUTE FOR LEADERSHIP AND BUSINESS

→ Continued from page 51

your practice managers and coders. New this year, AUA Coding^{Plus} is a series of quarterly virtual courses providing timely updates in the coding, reimbursement, insurance, and public policy topic space. It is essential that urological practices

keep abreast of this ever-changing content to maintain relevant, current coding, reimbursement, and billing procedures. These courses conveniently deliver essential, timely education to practice administrators, coders, and other practice

professionals for direct implementation into their urology practices to maintain, optimize, and improve business operations.

The Institute of Leadership and Business continues to expand its offerings to provide the most value to

our membership. We encourage you and your team to look into the new resources being offered by the AUA. If you have any questions or recommendations, please email education@auanet.org. We welcome an open dialogue with our members. ■

FROM THE AUA RESEARCH COUNCIL

Scientific Research: Can the Results Be Trusted?

Steven A. Kaplan, MD

Icahn School of Medicine at Mount Sinai,
New York, New York

The Office of Research at the AUA is committed to furthering discovery and innovation with the goal of helping urological patients. This commitment manifests in many ways, including creation of the AUA Innovation Nexus, partnerships with various stakeholders, and the creation of Diversity, Equity, and Inclusion, Independent Practice, and International Research work groups.

A key part of these efforts is to critically and honestly evaluate our progress; what we are doing well, and more importantly, what we are not. However, we live in a world beyond urology and need to recognize, adapt, and change based on events around us. Over the past 5 years, and accelerated during the COVID-19 crisis, there has been a significant diminution of trust in scientific research. Some of this distrust was driven by political agendas and some by fear, but it is clear and worrisome how often medical and scientific findings which are initially met with large fanfare are later found to be nonreproducible in other settings. This is not new!

“Much of the scientific literature, perhaps half, may simply be untrue,” stated Richard Horton, editor of *The Lancet*, a peer-reviewed medical journal.¹ “Afflicted by studies with small sample sizes, tiny effects, invalid exploratory analyses, and flagrant conflicts of interest, together with an obsession for pur-

suage fashionable trends of dubious importance, science has taken a turn towards darkness.” He also posits that “something has gone fundamentally wrong with one of our greatest human creations.” There are many plausible reasons why this phenomenon is occurring, and one would argue, accelerating. As Horton points out, these include but are not limited to (1) sculpting or retrofitting of data to align with a preferred or popular theory, (2) the often statistical fairy tale of scientific “significance,” and (3) the pressure of “publish or perish.”

Given the skepticism the public now has for medical research, how should we approach our own scientific work and discovery? Moreover, given a new era of widely available artificial intelligence outlets that can be used to write journal articles and perhaps even report new findings, what strategies can we impart to the next generation of scientists and discoverers?

A prescient article written in 2005 discusses the approach to designing clinical trials then, and more so now, as fraught with landmines.² The author painstakingly reviews study designs and settings and concludes it is more likely for research findings to be false than true. He almost eerily notes that for many scientific fields, claimed research findings may simply be accurate measures of prevailing bias. Sound familiar? The author posits reasons why research bias occurs, becomes accepted, and is repeated in a wash, rinse, repeat phenomena. These include: (1) the smaller the studies

conducted in a scientific field, the less likely the research findings are to be true; (2) the smaller the effect sizes in a scientific field, the less likely the research findings are to be true; (3) the greater the number and the lesser the selection of tested relationships in a scientific field, the less likely the research findings are to be true; and (4) the hotter a

“To correct a fundamental and structural problem, there needs to be wide recognition that a problem, in fact, does exist. While to some degree the scientific community knows that this is a significant challenge, there is little motivation by stakeholders to create fundamental change.”

scientific field (with more scientific teams involved), the less likely the research findings are to be true. More explicitly, with many teams working within the same fields with massive amounts of experimental

data, beating the competition in delivering findings is emphasized. Disseminating the most impressive positive results becomes the priority rather than the truth.

There is a term, the Proteus Phenomenon, for situations where rapidly alternating research claims occur with extremely opposite refutations. Again, this sounds like cable TV and social media during the COVID-19 crisis! Ironically, this author was criticized for questioning COVID-19 mortality data with incredible scientific overreaction. The author recommends that at minimum we should learn from other scientific experiences where biases drove the research field rather than actual scientific truths. Horton suggests that “those who have the power to act seem to think somebody else should act first.” To correct a fundamental and structural problem, there needs to be wide recognition that a problem, in fact, does exist. While to some degree the scientific community knows that this is a significant challenge, there is little motivation by stakeholders to create fundamental change. Money, politics, and science make for strange bedfellows. I do not envy the next generation of discoverers and researchers who have access to so much information but need to develop the discipline and humility to accurately analyze their findings. We can only hope to start the process of creating a better and more sustainable legacy. ■

1. Horton R. Offline: what is medicine's 5 sigma? *Lancet*. 2015;385(9976):1380.

2. Ioannidis JPA. Why most published research findings are false. *PLoS Med*. 2005;2(8):e124.

FROM THE UROLOGY CARE FOUNDATION

Urology Care Foundation Board of Directors: Dynamic, Diverse, Dedicated, and Seeking New Members

Harris M. Nagler, MD, FACS
President, Urology Care Foundation

The Urology Care Foundation (UCF) is currently recruiting AUA members to join its Board of Directors for the open positions of Secretary and Member at Large. Applications will be accepted through September 30, 2023.

The Board is comprised of both AUA members and community (lay) members who represent a dynamic, diverse, and dedicated group of professionals. The Foundation's vision has expanded and is worldwide in scope with each of the Foundation's 3 pillars—research, patient education, and humanitarianism—positioning the UCF to gain global recognition.

Secretary

The Secretary provides leadership and guidance for the Foundation by participating in board ac-

tivities and, importantly, leading the fundraising activities of the Foundation in collaboration with UCF development staff. The Secretary represents the Foundation and supports the promotional and branding efforts of the UCF within the urology community and among the public. The Secretary builds relationships, participates in pursuing philanthropic support for the Foundation, and sets an example for other board members' networking and fundraising efforts.

Member at Large

The Members at Large provide leadership and actively advocate for the Foundation's priorities and philanthropic efforts. They help establish and review strategies and organizational goals, and work closely with fundraising staff to raise funds and foster relationships with donors.

Board of Directors

The UCF funds research for medical students, residents, early career researchers, scientists, and surgeon-scientists on the cusp of becoming independently funded—all with the goal of ultimately improving patient care. Board members strengthen the urology research community by identifying individual donors to support programs, utilizing their personal relationships with past scholars to pay it forward, and by attending research honors events.

The UCF's patient education focus is a fundamental element of the Foundation's goal of improving health care worldwide. Education helps eliminate dis-

parities in information, allowing patients to be better informed and able to participate more meaningfully in their health care choices. The Board works closely with the Public Education Council to identify a strategic direction and garner support for this work.

The leadership provided by the Board allowed for the formulation of our humanitarian initiatives. Humanitarian programs focus on the needs of the underserved and addressing disparities within special populations, geographical areas, or regions. The Board also supported the introduction of the new Health Equity Fellowship. This program is designed to train early career urologists who are passionate about humanitarian work within the United States so that they may be effective in engaging with diverse communities, especially those most marginalized.

The Foundation is also embedding diversity, equity, and inclusion (DEI) initiatives into all of our education, research, and development programs. Councils and committees are diversifying, patient education materials are being tailored to meet the needs of underrepresented patients, and new research programs are being established to support underserved participants. A Diversity and Inclusion subject matter expert and Special Advisor helps the Board identify new programmatic opportunities and allows Board members to work outside of their normal networks to build a stronger, more inclusive organization. Board members who themselves have diverse backgrounds and expe-

“If you consider yourself a creative leader and can help drive our philanthropic efforts, please consider applying to join the UCF Board in the role of Secretary or Member at Large.”

rience are serving in key liaison roles with AUA's DEI efforts, enhancing relationships with other organizations to map out new programs, such as the FUTURE in Urology program introduced at AUA2023 in Chicago. Board members are often sought after or otherwise volunteer to represent the Foundation at meetings and to forge new relationships in the urology community.

Research, education, and humanitarian initiatives all require philanthropic support. The Board is actively engaged in identifying potential donors to allow the UCF to fulfill its mission.

If you consider yourself a creative leader and can help drive our philanthropic efforts, please consider applying to join the UCF Board in the role of Secretary or Member at Large. Find more information, including the full job descriptions, on the UCF website at UrologyHealth.org/Board-Positions. I hope you'll join us. ■

“The Foundation's vision has expanded and is worldwide in scope with each of the Foundation's 3 pillars—research, patient education, and humanitarianism—positioning the UCF to gain global recognition.”

FROM THE CHIEF EXECUTIVE OFFICER

Keeping the Momentum With Innovation Nexus

Michael T. Sheppard, CPA, CAE
CEO, AUA

As you know, AUA Innovation Nexus, the urology research incubator powered by the AUA, held its inaugural event prior to the AUA Annual Meeting in April. The 1-day event gave startups, entrepreneurs, venture capitalists, investors, and urologists the opportunity to come together to advance urological discovery to improve patient care.

We were really pleased with the energy at the April event (and in the following days). There was a buzz around the Innovation Nexus, and it served to reinforce that there is a need for this type of incubator and the connections that it can and will facilitate. And we've continued to receive feedback—both in terms of new ideas and areas of improvement as well as kudos for an exciting new program. In fact, well over half of the attendees said they would be back for Innovation Nexus 2.0 in San Antonio in 2024.

But before that, we'll turn our attention to the companion event—the AUA Innovation Nexus Boot Camp to be held September 22-23, 2023, at AUA headquarters in Linthicum, Maryland. In the capable hands of co-chairs Amarpreet S. Sawhney, PhD, CEO of Instylla (embolic therapies), Rejoni (uterine health), and Pramand LLC (biosurgery products), and Ganesh Raj, MD, PhD, professor of urology at UT Southwestern, the 2-day pro-

“There was a buzz around the Innovation Nexus, and it served to reinforce that there is a need for this type of incubator and the connections that it can and will facilitate.”



Innovation Nexus panelists speaking about the importance of an AUA incubator. Left to right: John Flavin, MBA; Brian Friedman, JD, MBA; Jim Robinson; and Patrick Flavin, JD.



One of many networking opportunities at AUA Innovation Nexus.



Showcase presentation from Duke Herrell of Virtuoso Surgical during AUA Innovation Nexus.

gram will move innovative ideas from concept to realization by preparing and empowering attendees to take their designs and develop them into marketable products.

This intimate event will consist of concentrated workshops, the opportunity to hear from successful inventors, intimate roundtable discussions, mentoring sessions, and networking with others on a

“We hope you’ll join us later this month for 2 full days of sharing expertise, learning, ideation, and networking.”

more individual level. Day 1 will focus on didactic lectures and other presentations that introduce the concepts and foundations of taking an idea through to production. Day 2 will feature small group activities with individualized feedback from experienced experts.

The September timeline is intentional to allow sufficient time for participants to continue to refine their ideas and prepare for the next Innovation Nexus Showcase in 2024.

We plan for this boot camp to appeal to a wide variety of attendees: residents, postdoctoral and clinical fellows, early-career urology researchers, early-stage innovators, Office of Innovation professionals, urology-focused small business/start-up professionals, independent practice and community urologists, urology department chairs, research scientists, and physician scientists—there’s something for everyone. Whether you’re at the beginning or well into your urology career, there’s ample opportunity to transition to the world of innovation!

We hope you’ll join us later this month for 2 full days of sharing expertise, learning, ideation, and networking. Visit auanexus.org for more information and to register. ■

AUA SECTION MEETINGS

Mid-Atlantic Section of the AUA Annual Meeting

Costas D. Lallas, MD, FACS
President, AUA Mid-Atlantic Section

In the Mid-Atlantic Section of the AUA (MAAUA), we pride ourselves on the urology-charged phrase “size doesn’t matter.” Although the smallest of the 8 sections, we take advantage of our central location, having the AUA Headquarters in-section in Linthicum, Maryland, and boast several world-class urologists, including many recent recipients of AUA honors and awards. This year, we have continued our trend of pioneering several educational outreach programs that we feel will have major impact in the world of urology. Included in this is the Pre-medicine Enrichment Program, in which we fund undergraduate underrepresented minority students to shadow an MAAUA urologist/urology program over the summer. We believe that this exposure will help infuse much-needed diversity not only into medicine, but into urology as a specialty. We piloted this program last year with 6 student recipients and have expanded it to 8 this year. To highlight our commitment to Graduate Medical Education, we host an



annual Resident Day in Linthicum. On Resident Day we invite all in-section residents to attend without cost a 1-day program constructed by in-section junior faculty members and comprised of topics that will be helpful to residents on the boards, in practice, and in life. Resident Day is strategically scheduled just prior to the AUA Summit in Washington, DC, which is also heavily attended by our members. I would be remiss if I did not brag about our residents having taken home the Finals Trophy for the second year in a row at the Residents Bowl during the annual AUA meeting in Chicago this past May. Dynasty, anyone?!! Finally, for practicing urologists, we also sponsor 2 virtual Continuing Medical Education talks per year on hot topics in urology. These online programs are called Mid-Atlantic Mondays, and this year we utilized in-section talent to speak on subtopics in

nonmuscle-invasive bladder cancer and management of complex urethral stricture disease.

This year, the MAAUA Annual Meeting will be held in historic Colonial Williamsburg, Virginia, from October 19-21. Nestled in the southeast corner of our section, this picturesque location contains a fully restored colonial town, replete with shops, administrative buildings, and a full complement of in-costume inhabitants living and teaching about 18th-century colonial life. In a standard day, George and Martha Washington and Thomas Jefferson can be seen wandering along Duke of Gloucester Street, the main avenue of Williamsburg. Just adjacent and within walking distance of the town is one of the oldest institutes of higher learning in the country, the College of William and Mary. The meeting hotel is actually situated within Colonial Williamsburg, providing a family-friendly

venue. Our section will take advantage of many of the available settings and backdrops to hold our social events, including a Colonial Theme Night, Night Golf, a 5K Fun Run through town, and a guided tour of Historic Williamsburg. Our educational program will be a full 3 days, during which we’ll have 4 invited speakers, more than 15 panel and plenary sessions, concomitant poster sessions, and a full-day program for the advanced practice provider members of our section. Our named speakers are Glenn Preminger from Duke as our Paul Schellhammer Lecturer and Paul Andrews from Mayo Arizona as our Hugh Hampton Young Lecturer. In addition to updates on more standard clinical topics, including oncology, robotic surgery, and endourology, our program committee has used significant thought when structuring the 3 days, taking advantage of some of our in-section specialists who also focus on less common pursuits. Accordingly, we will have a panel on global medicine, a series of lectures targeted toward resident education, and talks on less-common clinical scenarios, such as transgender medicine and transitioning a pediatric patient into adult management. We are confident that it will be a wonderful experience for all, and we encourage those who are coming to make their reservations early and to bring their families. Who knows—you may even get to meet one of our Founding Fathers. ■



Costas D. Lallas, MD, FACS
President, Mid-Atlantic Section
American Urological Association



Glenn M. Preminger, MD
Paul Schellhammer
Lecturer



Paul E. Andrews, MD
Hugh Hampton Young
Lecturer



Residents Bowl Team,
Fomier's Gang
and Costas Lallas, MD



Special Event
Young Urologists
Glow in the Dark Golf



Special Event
5K Fun Run
Step for PEP

AUA SECTION MEETINGS

The Northeast Section 2023: Looking Forward

David A. Corral, MD, FACS
President, AUA Northeast Section

Dear Friends:

Thankfully, the brunt of the pandemic is behind us and it is truly a relief to return to in-person

medical meetings where we can once again interact and exchange ideas with our colleagues face-to-face. I am excited to invite you to make plans to attend the AUA Northeast Section (NSAUA) 75th

Annual Meeting at The Westin in Pittsburgh, October 20 through 22, 2023. Our program director, Dr Bruce Jacobs, and I have compiled an impressive speakers list. The theme of the meeting will be

“Looking Forward,” a welcome change after the pandemic years, with emphasis on the future direction of the practice of urology.

→ Continued on page 56

THE NORTHEAST SECTION 2023: LOOKING FORWARD

→ Continued from page 55

“I am excited to invite you to make plans to attend the AUA Northeast Section (NSAUA) 75th Annual Meeting at The Westin in Pittsburgh, October 20 through 22, 2023.”

We’ve broadened the subjects for discussion during the meeting to make the content appealing and informative for all members of our urologic community: private practitioners, employed urologists, academic urologists, nurses, advanced practice providers, and, of course, our urology residents. Talks, discussions, and debates will include biotechnology updates, future directions of health policy, the challenges facing urologists who practice in a rural setting, the current state and the need for reform of medical malpractice law, physician health, and new frontiers such as xenotransplantation, artificial intelligence, and others. Each session will emphasize what we can expect going forward and how best to adapt, with the goal of keeping every talk and discussion both fun and informative.

One of the highlights of our meeting is the annual Slotkin Lecture, delivered by an internationally recognized member of the urology community who has made exceptional contributions to the advancement of our field. This year it will be delivered by Neal D. Shore, MD, FACS. Dr Shore has conducted more than 350 clinical trials and serves on the boards of multiple urological societies and publications. He will be speaking on both the current state-of-the-art treatment of advanced genitourinary malignancies, as well as the incorporation of clinical trials into your busy practice. We look forward to hearing his advice on expanding clinical trial participa-



tion, an area in which he has had tremendous success.

Also, some of the other highlights of the itinerary include talks on the impact of artificial intelligence on urology and society in general by Drs Khurshid Guru and Bryan Wilder; developments in genital cancer and reconstruction by Drs Paul Perrotte, Mark Smaldone, and Paul Rusilko; urologist health and well-being by Drs Andrew Miller and Jennifer Berliner; and the latest developments in surgery, radiation, and surveillance for prostate cancer by Drs Seetharam Bhat, Ahmed Ghazi, Zachary Horne, and Melissa Huyn. The state-of-the-art management of bladder cancer will be addressed by Drs Jodi Maranchie, Khurshid Guru, and

Cheryl Lee. We are looking forward to a free-for-all cage-match discussion on the state of medical malpractice systems in the United States and Canada, which will include addresses by both defense and plaintiff attorneys and medical experts. Four experts will also discuss the challenges facing rural urologists and the potential for public policy decisions to address these needs. Dr Stephen Emery will speak on current in utero management of fetal urological disorders, and Drs Rajiv Choudry and Alexandra Rehfus will bring us up to date on the most recent advances in pediatric urology. Drs Chris Chermansky and Teresa Danforth will give us updates on the management of voiding dysfunction, and

the AUA Course of Choice Lecture will feature Dr Wayne Hellstrom speaking on current concepts and controversies in male hormone replacement therapy. Additionally, we look forward to spirited resident debates on current management of benign prostatic hyperplasia and calculi. These segments are traditionally some of the most entertaining and fun portions of the meeting. Fun Night at the Heinz History Center promises to include some distinctive local flavor, including a bluegrass band known for interacting with their audience.

Please join us for what promises to be a great meeting. You can register at nsaua.org.

Additionally, in order to help the NSAUA grow and strengthen, we understand the importance of cultivating our relationships with those who will be the section’s future leaders. The board of directors of the NSAUA is committed to increasing engagement and participation of our resident members on both sides of the border. To accomplish this, we are moving forward with the formation of the NSAUA Resident Committee, as well as the establishment of 2 new positions on the board of directors for urology residents from the United States and Canada. The board aims to gain greater insight into the needs and challenges of our resident members that may help guide and direct future policy decisions. Along with the committee formation and establishment of board of directors positions, we will continue to support the works of residents, fellows, and researchers from our section through scholarships and funding, and by showcasing their results at our meetings. We hope that, by providing this exposure and experience for young section members, we can increase their overall interest and participation in section activities.

Lastly, on behalf of the NSAUA board of directors, I would like to personally thank the staff of WJ Weiser and Associates for their outstanding efforts during our transition over the past couple of years. Your work has helped keep us on track through the pandemic and allowed us to continue to grow and thrive. ■

SPECIALTY SOCIETIES

The International Neuro-Urology Society Annual Congress

Blayne Welk, MD, MSc
Western University, London, Canada

Glenn Werneburg, MD, PhD
Cleveland Clinic Foundation, Ohio

The International Neuro-Urology Society (INUS, www.neuro-uro.org) was established in 2015, and is a medical society with the aim to improve and promote the medical care for patients suffering from neuro-urological disorders worldwide. Its current president, Dr Thomas Kessler, and the scientific committee (Dr Jorge Moreno-Palacios and Dr Apostolos Apostolidis), in partnership with the local organizers (Dr Charalampos Konstantinidis and Dr Michael Samarinas) were honored to host researchers and clinicians from around the world in Athens, Greece, from June 8-10, 2023.

The scientific program started with specialized multidisciplinary workshops (urodynamics, neuro-modulation, neurosciences, translational research, and pediatrics) that brought together smaller groups with a shared interest in these focused and in-depth programs (Figure 1). Importantly, a workshop specifically for urological nurses was also hosted, and covered topics such as teaching intermittent catheterization and counselling people with frequent urinary tract infections. The main program included 3 keynote lectures. The first, given by Dr Lori Birder, examined the role of purine nucleoside phosphorylase in age-related changes and detrusor underactivity, and the results of some fascinating preclinical studies that demonstrated these changes can be prevented with 8-aminoguanine. Second, Dr Andrei Krassioukov (physical medicine and rehabilitation specialist) explored the detailed impact of autonomic dysreflexia on people living with spinal cord injury, and how to best manage this condition when it is triggered by urological procedures or complications. Finally, Dr Karl-Dietrich Sievert reviewed clinical targets and unmet needs for neuromodulation in the neurological population.

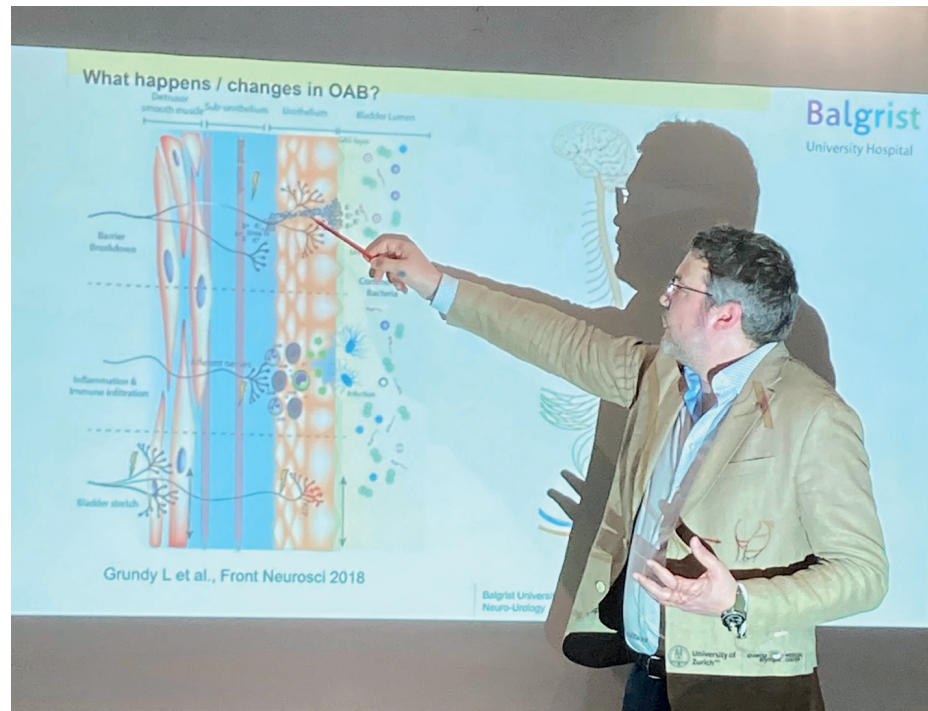


Figure 1. Dr Ulrich Mehnert presenting on the neural pathophysiology of overactive bladder during the Neurosciences Workshop of the 2023 International Neuro-Urology Society Annual Congress in Athens, Greece.



Figure 2. Dr David Ginsberg presenting the Society of Urodynamics, Female Pelvic Medicine & Urogenital Reconstruction-International Neuro-Urology Society lecture.

This congress also represented the first time INUS hosted the Society of Urodynamics, Female Pelvic Medicine & Urogenital Reconstruction lecture, which was given by Dr David Ginsberg (Figure 2); Dr Ginsberg discussed the significant economic burden of

treatment and rehabilitation for neurogenic lower urinary tract dysfunction, and its associated bladder drainage assistance. Other partner societies were also invited to participate in the program, including the Turkish Association of Urology (Dr Taahra, “Which urodynamic parameters matter in the neurogenic population”), the International Continence Society (Dr Konstantinidis, “Highlights on neurogenic incontinence and sexual dysfunction”), the Pan-Arab Continence Society (Dr al Mousa, “Bladder augmentation and renal transplant in the neurogenic population”), the Iranian Urology Association (“Challenges in the treatment of neuro-urological sexual dysfunction in women in the Islamic world”), the Société Internationale d’Urologie (Dr Principe, “Management of urethral and stoma complications in neuro-urological patients”), and, finally, the Urodynamic, Neurourology & Female Urology section of the Hellenic Urological Association lecture (Dr Apostolidis, “QoL, decision-making for treatment and

“This congress also represented the first time INUS hosted the Society of Urodynamics, Female Pelvic Medicine & Urogenital Reconstruction lecture, which was given by Dr David Ginsberg (Figure 2); Dr Ginsberg discussed the significant economic burden of treatment and rehabilitation for neurogenic lower urinary tract dysfunction, and its associated bladder drainage assistance.”

treatment adherence in patients with multiple sclerosis/NLUTD”). All of these societal partnerships help bring together experts from around the world, and contribute to the rich and highly specialized neuro-urology program.

The program also included a series of nonsociety lectures and panel discussions. For the first time, there was a session dedicated to pediatric neurogenic lower urinary tract dysfunction (NLUTD). Dr Stacy Tanaka discussed the workup and management of neurogenic incontinence in children and adolescent patients. This was

THE INTERNATIONAL NEURO-UROLOGY SOCIETY ANNUAL CONGRESS

→ Continued from page 57



Figure 3. Dr Claire Hentzen was the recipient of the 2023 Swiss Continenence Foundation for her work on the utility of pelvic neurophysiology in the assessment of Tarlov cysts and their relationship with pelvic symptoms. Left to right: Prof Dr Thomas M. Kessler, International Neuro-Urology Society President and Chairman of the Swiss Continenence Foundation Board; Dr Claire Hentzen; Dr Ulrich Mehnert, Vice-Chairman of the Swiss Continenence Foundation Board.

followed by an engaging panel for the discussion of challenging cases moderated by Dr Anastasios Karatzaz. Joining Dr Tanaka were panelists Dr Stuart Bauer, Dr Carlos Estrada, Dr Giovanni Mosiello, and Dr Christian Sager. An additional session focused on sexual dysfunction associated with spinal cord injury and other neurogenic pathology and a panel moderated by Dr Desiree Vrijens with panelists Dr Nikolaus Sofikitis, Dr Bertil Blok, Dr Razvan Bardan, Dr Claire Hentzen, and Dr Charalampos Konstantinidis. An additional highlight of the scientific program was a lecture by Dr John Stoffel on the value and utility of the postvoid residual volume in individuals with NLUTD who do not catheterize. He discussed the importance of risk stratification and careful assessment of symptomatology

in the clinical decision-making of those with elevated postvoid residual volumes. Neurologist Dr Jalesh Panicker discussed recent research and advances in the understanding of the central control of micturition, and medical physicist Dr Gergely David discussed novel MRI techniques to investigate the pathophysiological mechanisms of spinal cord injury and its relationship to NLUTD. Dr Blayne Welk moderated a Balloon Debate: “Clinical Conundrums in Neuro-Urology.” The premise of the debate is that each panelist presents and supports his or her response to a clinical case question regarding workup or management. The audience then votes for the favorite response, and the panelist with the fewest votes leaves the balloon. The process continues until the balloon only contains the



Figure 4. The International Neuro-Urology Society Board. Left to right: Drs Glenn Werneburg (United States), Emmanuel Braschi (Argentina), Mehri Mehrad (Iran), Jalesh Panicker (United Kingdom), Helmut Madersbacher (Austria), Thomas Kessler (Switzerland), Stefania Musco (Italy), Márcio Averbeck (Brazil), Kadir Önem (Turkey), Jorge Moreno-Palacios (Mexico), Blayne Welk (Canada).

winner. There was robust audience engagement in the session, and multiple votes for all panelists: Drs Emmanuel Braschi, Giulio Del Popolo, Michael Samarinas, and John Stoffel.

Forty-five posters were presented during the Congress. The poster sessions provided a venue for selected abstract submitters to present their latest work. The work ranged from basic science, including a study of a novel reporter-bacteriophage bioluminescent assay to detect bacterial urinary tract infections as presented by Dr Lorenz Leitner, to clinical studies such as the validation of the irritable bowel syndrome quality of life questionnaire in the spinal cord injury population, presented by Dr David Ginsberg.

On the final day of the Congress, the Swiss Continenence Foundation selected its 2023 awardee. The Swiss Continenence Foundation seeks to support and advance the research and education within the field of neuro-urology and functional urology to improve the quality of care and quality of life with those afflicted with neuro-urological conditions. Its award, which

totals 10,000 Swiss francs (approximately \$11,200 USD), is awarded annually to the best contribution by a young neuro-urology talent. To select the winner, the Swiss Continenence Foundation assembled an independent jury consisting of Drs Martina Liechti, Andrea Sartori, John Stoffel, Jalesh Panicker, and Glenn Werneburg. The jury was moderated by Dr Ulrich Mehnert. The awardee was selected based on the curriculum vitae and a submitted abstract, as well as a research presentation and responses to inquiries of the jury and the general audience. The winner of the 2023 Swiss Continenence Foundation Award was Dr Claire Hentzen for her work on the utility of pelvic neurophysiology in the assessment of Tarlov cysts and their relationship with pelvic symptoms (Figure 3).

Finally, the next INUS Annual Congress location was announced. For its 10th anniversary, the INUS Annual Congress will take place back at the location where it was established: Switzerland. The INUS Board (Figure 4) welcomes all those with neuro-urological interest to attend in the winter of 2025. ■

SPECIALTY SOCIETIES

Leveraging Allied Health Professionals

Jessica Nelson, MPAS, PA-C

University of Texas Southwestern Medical Center,
Dallas

Heidi Turpen, MPAS, PA-C

University of Texas Southwestern Medical Center,
Dallas

For years, we have been battling a workforce shortage in medicine. The Association of American Medical Colleges projects a national shortage of up to 124,000 physicians by 2033.¹ According to the AUA, 28.5% of urologists are over the age of 65, nearing retirement, and the median age is 55. One

“According to the AUA Census 2022, 81.5% of urologists already utilize at least 1 APP in their practice, and patients demonstrate a growing acceptance of APPs in urology.”

way to help address it is by leveraging advanced practice providers (APPs) into urology practices. An APP is a health care professional who is not a physician but has advanced education, training, and certification to provide medical and/or surgical care. APPs include nurse practitioners, physician assistants, and nurse anesthetists. According to the AUA Census 2022, 81.5% of urologists already utilize at least 1 APP in their practice, and patients demonstrate a growing acceptance of APPs in urology. Currently, APPs are utilized more in metropolitan areas and academic centers (96.4%) than private practice (64.7%). Overall, 75.9% of

urologists feel APPs help improve wait times for patients.

Incorporating APPs into practice can decrease wait times for patients but can also increase the patient volume seen by the practice, thus increasing surgical cases and revenue. APPs can bill independently utilizing their own provider ID, or bill as “incident to” services, which are billed at 100% of the physician fee schedule. In the latter scenario, the patient is seen by the APP and the physician.

Regarding Centers for Medicare & Medicaid Services reimbursement, the APP who bills independently will bill 85% of the physician fee schedule. However, this is not the case with third-party payers. Third-party payer reimbursement depends on contract negotiations with those payers. Example of reimbursement is provided in the Table. This shows the average collections for APP vs MD at University of Texas Southwestern Medical Center in Dallas from September 1, 2021, to September 1, 2022, for the listed Current Procedural Terminology (CPT) codes. On average, the APP billed 90% of the MD for a new level 4 visit. In the case of cystoscopy (CPT code 52000), this was 100%. One potential explanation for this surprising finding is that APPs may have performed cystoscopies on more patients with third-party insurance and higher negotiated reimbursement rates for this CPT code compared to their MD colleagues.

At University of Texas Southwestern Medical Center, urology APPs bill independently and do not routinely bill “incident to.” For the 2022 fiscal year, collections were \$4 million for 8.95 full-time equivalents.

One of the most frequently asked questions is how to find and train an APP in urology. One opportunity would be to reach out to a nurse

Table. Average Collections at University of Texas Southwestern Medical Center in Dallas, FY2022

CPT code	Average APP reimbursement	Average MD reimbursement
99204	\$202.58	\$224.57
99214	\$129.48	\$150.95
52000	\$254.08	\$253.58

Abbreviations: APP, advanced practice provider; CPT, Current Procedural Terminology; FY, fiscal year; MD, Doctor of Medicine.

practitioner or physician assistant program in your area and serve as a preceptor. This would give you an opportunity to educate APPs in urology and look for potential job applicants. Another option is hiring a urology fellowship trained APP. This may be harder to come by as there are only approximately 7 APP urology fellowships nationwide (at time of publishing). However, these fellowships provide a tremendous amount of education in all aspects of clinical urology, including procedure and operating room training.

“Incorporating APPs into practice can decrease wait times for patients but can also increase the patient volume seen by the practice, thus increasing surgical cases and revenue.”

There are several urology associations targeted for urological APPs as well. These include AUA with their APP track, the Society of Urologic Nurses and Associates, and the Urological Association of Physician Assistants. These organizations provide membership and annual

conferences to advance urological knowledge and skill. By encouraging the APPs to actively participate with these organizations and attend conferences, their urological knowledge and expertise will continue to expand. Typically, these conferences will have hands-on training, such as workshops in cystoscopy, posterior tibial nerve stimulation, percutaneous nerve evaluation, and ultrasound. Additionally, AUA University provides an APP Core Curriculum, an online community, webcasts, and podcasts which are great resources for education and networking.

In conclusion, leveraging APPs provides one means of tackling the growing workforce shortages in urology. Many urologists work with at least 1 APP and feel that APPs are an asset to their practice by shortening wait times and increasing patient volumes. Finding an APP who is interested and trained in urology can be a challenging task. However, having an APP on the clinical team can help expand our reach to the urological patient population. As with any clinical practitioner, it is important to support continued learning through training opportunities, conference attendance, and workshops. This will help not only train but increase APPs’ urological fund of knowledge to better serve our patients. ■

1. American Heart Association. *Fact Sheet: Strengthening the Health Care Workforce*. 2021. <https://www.aha.org/fact-sheets/2021-05-26-fact-sheet-strengthening-health-care-workforce>

2. American Urological Association. *Census Results: AUA Section Comparisons*. 2023. <https://www.auanet.org/research-and-data/aua-census/census-results>

2023 USMART Mentee: Hong Truong, MD, MS

Hong Truong, MD, MS

Penn State Health Milton S. Hershey Medical Center, Hershey, Pennsylvania

I am a urologic oncology surgeon and a research investigator at Penn State Health Milton S. Hershey Medical Center. My goal is to become an independently funded surgeon-scientist with a strong focus on translational research in the field of cancer genomics. By investigating the inherited genetic variations, the somatic mutational landscape, and the interplay between germline and somatic alterations in cancer development, my aim is to methodically unravel the genetic underpinnings of urological cancers. This knowledge will directly translate into tangible benefits for patients, such as implementing high-risk screening protocols for early detection of cancer and developing innovative genotype-directed treatment strategies.

My current research focuses on the inherited genetics of patients with upper tract and bladder urothelial cancer. Urothelial cancer has a substantial hereditary component, with an estimated heritability of 30%,¹ but the genetic mechanisms underlying familial aggregations and urothelial cancer development remain unknown. Recent large cohort studies demonstrated the likelihood of finding pathogenic germline vari-

ant in a cancer susceptibility gene in patients with urothelial cancer is high, ranging from 11% to 24% across the full spectrum of the disease.²⁻⁴ The causal effect of germline variant in DNA mismatch repair genes and the development of upper tract urothelial carcinoma is well known. Despite being a rare cancer, upper tract urothelial carcinoma is the third most common Lynch syndrome-associated cancer after colorectal and endometrial cancer.⁵ However, patients with upper tract urothelial carcinoma are infrequently referred for genetic evaluation. A hallmark of tumors in patients with Lynch syndrome is mismatch repair protein deficiency and microsatellite instability, which are important biomarkers of response to immunotherapy in various tumor types.⁶ Exploiting the therapeutic vulnerability of mismatch repair deficient/microsatellite unstable tumors in the management of upper tract urothelial carcinoma remains an untapped opportunity.

Over the next 3 to 5 years, my overarching goal is to build a comprehensive urological cancer genomics program at Penn State. This program will serve 2 critical purposes: (1) to decipher the genetic mechanisms of urothelial cancer and (2) to translate cutting-edge research into rational personalized care of patients with urological

cancers. To achieve this, I plan to conduct pilot projects that provide genetic services including counseling, germline testing, and longitudinal follow-ups for patients who live outside of urban centers. Additionally, I aim to engage patient advocates and clinical stakeholders through focus groups to refine and improve research questions with the goal of incorporating genetic evaluation in the clinical care of patients with bladder and upper tract urothelial cancer.

The career path of a surgeon-scientist is both highly rewarding and persistently challenging. To excel in this field, I recognize the importance of maintaining surgical competency while pursuing cutting-edge research. I must learn to navigate patient care, secure research funding, lead a multidisciplinary research team, teach trainees, and balance ever-increasing administrative duties. I understand that I cannot embark on this journey alone. Just like an athlete, success cannot be achieved solely by understanding the process and emulating other surgeon-scientists. In order to thrive, I need the guidance of a coach and mentor who can impart the art and methodology of science and academia, helping me set realistic and attainable scientific and career goals.

Therefore, I consider myself incredibly fortunate to be a part

of the AUA USMART (Urology Scientific Mentoring and Research Training) Academy. Through this program, I have been paired with Dr Ashish Kamat, an engaged and supportive mentor who possesses a wealth of knowledge and accomplishments as a physician-scientist. Dr Kamat has provided invaluable career support and guidance, assisting me in navigating the complexities of an academic career. Moreover, the USMART Academy fosters a vibrant community among early-career investigators through creative networking events. These occasions not only allow us to celebrate research achievements, but also provide a platform to share setbacks and challenges as we embark on our respective academic journeys. ■

1. Mucci LA, Hjelmborg JB, Harris JR, et al. Familial risk and heritability of cancer among twins in Nordic countries. *JAMA*. 2016;315(1):68-76.
2. Carlo MI, Ravichandran V, Srinivasan P, et al. Cancer susceptibility mutations in patients with urothelial malignancies. *J Clin Oncol*. 2020;38(5):406-414.
3. Nassar AH, Abou Alaiwi S, AlDubayan SH, et al. Prevalence of pathogenic germline cancer risk variants in high-risk urothelial carcinoma. *Genet Med*. 2020;22(4):709-718.
4. Pietzak EJ, Whiting K, Srinivasan P, et al. Inherited germline cancer susceptibility gene variants in individuals with non-muscle-invasive bladder cancer. *Clin Cancer Res*. 2022;28(19):4267-4277.
5. Koornstra JJ, Mourits MJ, Sijmons RH, Leliveld AM, Hollema H, Kleibeuker JH. Management of extracolonic tumours in patients with Lynch syndrome. *Lancet Oncol*. 2009;10(4):400-408.
6. Le DT, Durham JN, Smith KN, et al. Mismatch repair deficiency predicts response of solid tumors to PD-1 blockade. *Science*. 2017;357(6349):409-413.

MEDICAL STUDENT COLUMN

Taking the Plunge: My First AUA Annual Meeting

Sasha Vereecken, BScN, RN
Saint James School of Medicine, Anguilla

With encouragement from my mentor, I decided this year to take the plunge and attend AUA2023. As an international medical graduate from a small Caribbean school, getting onto a plane, traveling across the country, and walking

into a massive room where you don't know anyone can be daunting. However, attending AUA2023 was one of the best decisions I have made in my journey to becoming a future urologist. From attending enlightening poster presentations to interacting with professionals in the field of urology, the AUA Annual Meeting felt like attending the

Super Bowl of Urology. Personally, I was able to confirm my love for the field, gain a deeper sense of the role of a urologist, and expand my current base of knowledge.

Upon arriving at the main Science & Technology Hall, I was immediately impressed by the sheer size of the event. I started by attending a poster presentation

on Diversity, Equity & Inclusion, during which I gained a profound understanding of how these principles play in patient health care today. I was most astounded to learn the robust amount of research presented demonstrating how race and socioeconomic status continue to

TAKING THE PLUNGE: MY FIRST AUA ANNUAL MEETING

→ Continued from page 60

negatively impact mortality rates in patients with prostate cancer. With this knowledge, I hope that within my career, we can adjust these rates to meet the norm through increased patient advocacy, accessibility, and continued research on these topics. Additionally, learning about the implications of removing the race factor on estimated glomerular filtration rate equations gave me a sense of hope for the future. It is amazing to see health care being rewritten by the bright minds around me.

By attending the various poster presentations, I was able to gain an idea of the expectations for a great poster. As a medical student, I was initially apprehensive about presenting; however, after seeing the other posters on display, I began to feel more confident about my ongoing projects back in my clerkships. As I walked around the exhibition hall, I was struck by the creativity and originality of the posters. Overall, attending the poster presentation sessions at the AUA Annual Meeting helped demystify any doubts I had about presenting urological topics. One of the highlights of the conference for me was attending a talk on patient perspectives on Saturday afternoon. As a future health care provider, it is crucial to understand the experiences and needs of our patients. Incorporating patient perspectives into our clinical practice can help us provide more personalized care and improve patient outcomes. By attending this session, I was pleasantly reminded of where my passion for urology lives.

To cap it off, on Sunday, I was able to meet with other medical students and gain further insights at the Medical Student Forum. The forum provided an excellent opportunity to learn more about the field of urology, network with other students and health care professionals, and gain valuable insights into successfully matching into residency. The importance of one's performance on subinternships, knowing the AUA Guidelines, and the value of teamwork were all held in regard by the panelists. During the forum, I learned how to appropriately obtain active and ongoing feedback from my advisors to grow as a professional during my rotations. I believe that attending the medical student forum



Figure 1. Reconnecting with old classmates in the area and introducing them to the world of Urology.



Figure 2. Connecting with other medical students interested in urology, Douvae Miller, Saint George's University (middle) and Jacqueline Maya-Silva, USC Keck School of Medicine (right) over some deep dish pizza.

has been an invaluable experience for me and has helped me develop the skills and knowledge necessary to become a successful match applicant. From there, I was able

to connect with other students and establish a new network of friends who share the same passion for the field of urology and deep-dish pizza (Figures 1 and 2). The student fo-

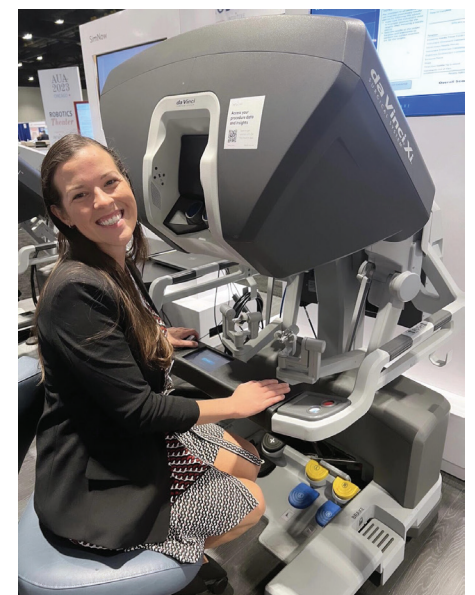


Figure 3. Students and residents all flocked to get some time on the da Vinci Robotic Trainers.

rum was paramount in helping me establish connections for future research opportunities, electives, and urology mentors.

During AUA2023, the AUA Diversity & Inclusion Committee launched the highly anticipated FUTURE in Urology Program, and its inaugural weekend surpassed all expectations. The medical students who participated in the FUTURE in Urology Program were paired with experienced mentors on Friday morning, granting them invaluable guidance, and were provided with numerous networking opportunities throughout the entire weekend. Adding to the memorable experience, the R. Frank Jones Urological Society hosted a beautiful evening reception at the City-Point Loft, providing an opportunity for continued networking among medical students and esteemed urologists.

For medical students interested in attending the upcoming AUA2024 in San Antonio and seeking guidance on how to get started, I highly recommend becoming an AUA member. By enrolling for free, you will receive email notifications regarding future annual meetings and essential dates for abstract submissions. To plan for travel expenses, you can directly contact your academic institution, as many schools provide funding to support students' attendance at conferences. In my personal experience, I reached

→ Continued on page 62

TAKING THE PLUNGE: MY FIRST AUA ANNUAL MEETING

→ Continued from page 61

out to alumni and secured accommodation at their apartment for the duration of the weekend. However, if funding continues to pose a challenge, numerous assistance programs are available to offer support. Notably, Urology Unbound demonstrated its commitment to supporting medical students this year by awarding 3 Medical Student Travel Awards for attendance at the AUA Annual Meeting.

To make the most of next year's visit, you can begin by working on

the abstract for your poster presentation as early as possible. As a valuable starting point, I recommend reading a past AUA Medical Student Column titled "A Guide for Medical Students Without Home Residency Programs or Strong Research Opportunities." This comprehensive guide offers a wide range of ideas for medical students to actively immerse themselves in research. My biggest takeaway from attending the AUA Annual Meeting is to put away your fear. Submit that abstract. Volunteer to give a

talk at a journal club. Write for the AUA Medical Student Column. Take the initiative to reach out and connect with others in your field. While it is possible that you may not always receive the result you hoped for, it is also possible (with thoughtfulness, passion, and persistence) that you could connect with the right mentor or fellow student who will provide invaluable guidance and support throughout your entire career.

Overall, attending the AUA2023 as a medical student was an incred-

ible and unforgettable experience. The conference provided me with the opportunity to learn about the latest developments in urology, connect with professionals in the field, and gain a deeper understanding of the challenges facing patients with urological conditions. I left the conference feeling inspired and energized about the future of urology, and I look forward to continually attending future AUA Annual Meetings as my career progresses (Figure 3). ■

Beware! ChatGPT Makes Up References!

James C. Williams Jr, PhD

Indiana University School of Medicine, Indianapolis

The *AUANews* article in the May 2023 issue, "ChatGPT: A Time-saving Companion for Physicians," by Gabrielson et al, is excellent and gives a good introduction to this emerging technology. The authors are completely correct about how using these new artificial intelligence (AI) tools can benefit physicians and researchers.

However, readers need to be aware that one of the limitations of the present ChatGPT system is that it does not give accurate citations of scholarly articles. No, correct that: It often lies, and it produces fake references that are scarily good.

To be fair, if you ask ChatGPT directly: "Give me scholarly articles," it will respond by saying, "I apologize, but as an AI language model, I don't have direct access to specific scholarly articles or the ability to browse the Internet. I can provide general information and answer questions based on my training up until September 2021." Very polite, and very accurate.

But ChatGPT is not always careful in following its own stated limitations. When I asked ChatGPT to provide me with some older articles on healing in the renal papilla, it gave me a list (see Figure). The paper titles provided look great! But 2 of these citations are completely fake, and the other 2 citations have odd errors.

If you go to *Physiological Reviews* and pull up volume 72 in 1992, the page numbers 693-732 overlap

with existing papers. In PubMed, it is easy to find out that Drs Jacobson and Fogo have never actually published together, but they both work in the areas of renal biology and pathology, so their names are not randomly assigned to this fictitious paper. For the second citation, checking in the *American Journal of Physiology-Renal Physiology* shows that, again, the page numbers overlap with existing papers, but ChatGPT appropriately cites page numbers beginning with the letter F, as they always do in that journal. In checking the author names on this citation, there are too many published authors named Z Xu to be certain of that name, but Drs Ong and Moldovan are real biomedical researchers who also have never published together.

The third citation is not fake: The Dagher et al paper is in *Journal of the American Society of Nephrology*, but the ChatGPT citation gives the wrong issue number and leaves off the final author name. The fourth citation is also a real paper, but the ChatGPT citation is correct only with the first author, while the other author names are people who have published with the first author, but who are not actually listed on this paper.

So, the citations given to me by ChatGPT were not entirely fake, but even the partially correct ones make me uneasy. What is true is that the citations invented by ChatGPT look really good. In my experience on this I have found the following:

- The paper citations from ChatGPT



Certainly! Here are a few older articles that you may find relevant to your interests in the healing process of the renal papilla epithelium:

1. Jacobson HR, Gomez RA, Fogo AB. The renal papilla. *Physiological reviews*. 1992; 72(3): 693-732.
2. Xu Z, Ong ACM, Moldovan R, et al. Cell biology of renal papilla in renal development and regeneration. *American Journal of Physiology-Renal Physiology*. 2017; 312(5): F861-F875.
3. Dagher PC, Herget-Rosenthal S, Ruehm SG, Jo SK, Star RA, Agarwal R. Newly developed techniques to study and diagnose acute renal failure. *Journal of the American Society of Nephrology*. 2003; 14(9): 2188-2198.
4. Humes HD, Cieslinski DA, Coimbra TM, Messana JM, Galvao C, Russell AJ. Replacement of renal function in uremic animals with a tissue-engineered kidney. *Nature biotechnology*. 1999; 17(5): 451-455.

These articles provide insights into the renal papilla, renal development, regeneration, and acute renal failure. Although these articles may not be the most recent ones, they can still offer valuable information on the healing and physiology of the renal papilla.

Figure. List of papers provided by ChatGPT when prompted to provide older articles on healing in the renal papilla (ChatGPT, personal communication, June 7, 2023).

always have real author names from the field, often even grouped as you might expect (German names in one paper, Chinese in another)

- The titles of the papers are very believable (and just what I am looking for!)
- The journals are real
- The volume numbers given match the year of the citation properly
- But many of the papers are fake. The page numbers given overlap existing papers in the given volume. Searches of the titles of the papers (on Google or PubMed) show that they do not exist

Frankly, I find all of this to be disturbing. When I am reviewing a paper or grant proposal now, do I

need to check all the references to ensure that they are real? Maybe so.

But, for readers of *AUANews*, the important thing to note is that for all the value of ChatGPT in its present form, no references should be trusted. Indeed, in its present form, probably any facts it trots out should be verified. Of course, ChatGPT is free, so what should I expect? Well, I expect that it would at least not make things up. Surely the programmers can force AI bots to cite only real publications, and at least one can hope that this will be fixed in future versions.

But one thing you can say truthfully about ChatGPT as it is now: It is always very polite! ■

PRACTICE TIPS & TRICKS

The Fifty-cent Marketing Idea

Neil H. Baum, MD

Tulane University School of Medicine, New Orleans, Louisiana

I've often heard that marketing is expensive and places urologists out of their comfort zones. I want to share an idea that is inexpensive and has a positive impact on my practice.

Upon completing a vasectomy, I would bring the partner or significant other into the procedure room and tell the patient the dos and don'ts for the next 2 to 3 days. This included lying down with an ice pack to the small opening

“Small gifts and gestures can significantly impact and promote positive word-of-mouth about you and your practice.”

(no-needle, no-scalpel procedure) for several hours when he got home. I would then provide him a small brass bell, which cost about \$0.50. He was instructed that when he needed any assistance for the few days following the procedure, he would ring the little bell, and help would soon be forthcoming. The bell contained my business card, which was attached by a rubber band to the bell. On the back of the business card was a message: “With one ring, you'll get everything!” (see Figure).

This bell always generated laughter and levity, mostly from the patient. The responses from the patient and the partner were also quite humorous. Humorous examples from partners included, “He don't need no (sic) bell!” or “He'll need a proctologist to retrieve that bell if ever he rings it!”

There was a positive buzz in the community. The word was that Dr Baum's vasectomy included a little fun, some humor, and a small bell...and yes, a male contraception option that required no more

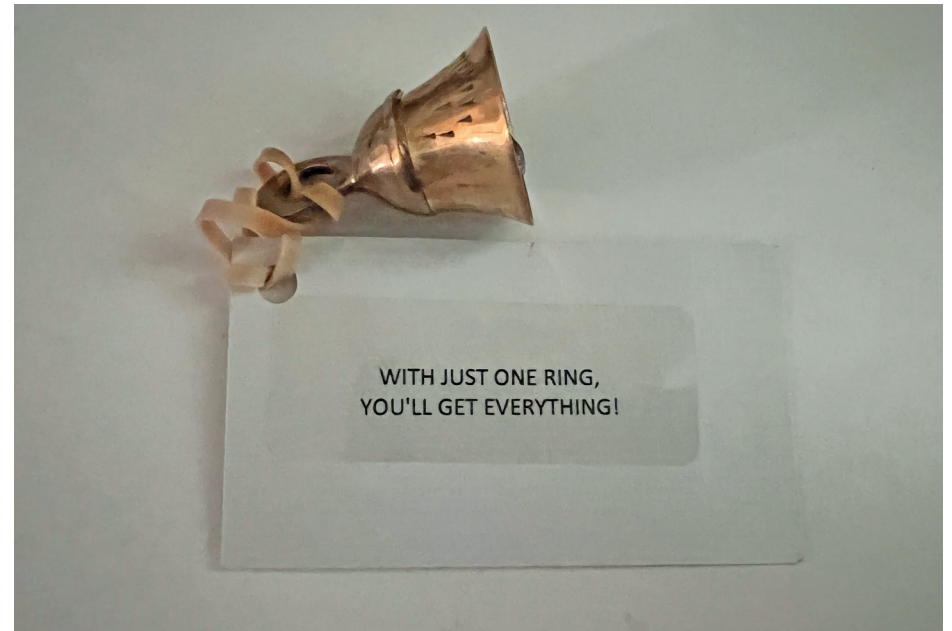


Figure. Brass bell attached to business card.

contraception on the part of the female partner and an effective way to reduce school tuition! After providing the bell after the procedure for several years and as word about the bell became well-known in the community, men would frequently ask, “Where's my bell?” Future patients would often ask, “If I agree

to the procedure, will I receive a little bell?”

My take-home message is that marketing and practice promotion is not necessarily expensive. Small gifts and gestures can significantly impact and promote positive word-of-mouth about you and your practice. ■

JU INSIGHT

What Is the Optimal Stenting Duration After Ureteroscopy and Stone Intervention?

Khurshid R. Ghani, MBChB, MS, FRCS(Urol)*

University of Michigan, Ann Arbor

Oluyemi O. Olumolade*

University of Michigan, Ann Arbor

Stephanie Daignault-Newton, MS

University of Michigan, Ann Arbor

Adam Cole, MD

Smith Institute for Urology, Northwell Health, New Hyde Park, New York

Patrick Yang, DO

Michigan State University College of Human Medicine; Michigan Health Care Professionals, Farmington Hills

Susan Linsell, MHSA

University of Michigan, Ann Arbor

Brian Seifman, MD

Michigan Institute of Urology, Beaumont Hospital, Royal Oak

Dave Wenzler, MD

Michigan State University College of Human Medicine; Michigan Health Care Professionals, Farmington Hills

Casey Dauw, MD

University of Michigan, Ann Arbor

For the Michigan Urological Surgery Improvement Collaborative

*Co-first authors.

Ghani KR, Olumolade OO, Daignault-Newton S, et al. What

is the optimal stenting duration after ureteroscopy and stone intervention? Impact of dwell time on postoperative emergency department visits. *J Urol.* 2023;210(3):472-480.

Study Need and Importance

The AUA stone management guidelines recommend minimizing the duration of stenting after ureteroscopy to reduce morbidity, and stents with extraction strings may be used for this pur-

pose. However, there are limited data on stenting dwell time and its impact on outcomes such as unplanned health care encounters. Using real-world practice data from the Michigan Urological Surgery Improvement Collaborative, we investigated the association between dwell time and string status on postoperative emergency department (ED) visits on the day of or day after stent removal.

→ Continued on page 64

WHAT IS THE OPTIMAL STENTING DURATION AFTER URETEROSCOPY AND STONE INTERVENTION?

→ Continued from page 63

What We Found

We analyzed 4,437 unilateral ureteroscopy and stenting procedures in nonpre-stented patients; 38.1% had an extraction string placed, and there was significant surgeon variation in the use of this method. Patients with extraction strings had shorter dwell times. Dwell time of 0-4 days was significantly associated

“Patients with extraction strings had shorter dwell times. Dwell time of 0-4 days was significantly associated with an increased risk of ED visit occurring around the time of stent removal.”

with an increased risk of ED visit occurring around the time of stent removal. There was no statistically

significant increase in risk of ED visits in patients with a string if dwell times were ≥ 5 days (see Figure).

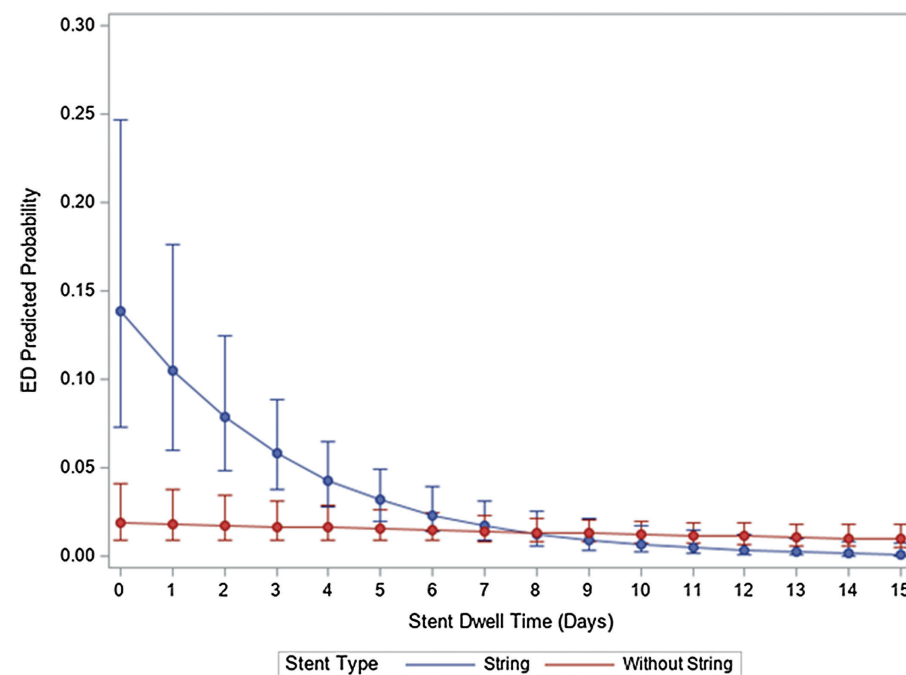


Figure. Predicted probability of a postoperative emergency department (ED) visit on the day of or day after stent removal, by stent dwell days and stent string use. Adjusted for age, sex, Charlson Comorbidity Index, stone location, and stone size with random effect for practice and urologist.

Limitations

Data on the stent composition, size, and how the extraction string was managed were not available. Reasons why providers chose stents with strings were not captured, and it is possible that higher-risk patients or those with a history of stent intolerance were more likely to receive such stents. We are also unaware if the instruction to have a short dwell time is surgeon or patient driven, or because of stent-related symptoms.

Interpretation for Patient Care

In Michigan, ureteral stent dwell time of 4 days or less is associated with an increase in postoperative ED visits around the time of stent removal. In nonpre-stented patients undergoing ureteroscopy and stone intervention, we recommend a minimum dwell time of at least 5 days. ■

JU INSIGHT

GRADE Reporting in Systematic Reviews Published in the Urological Literature (2009-2021)

Brett Norling, BS

University of Minnesota School of Medicine, Minneapolis

Jae Hung Jung, MD, PhD

Yonsei University Wonju College of Medicine, Republic of Korea
Center of Evidence Based Medicine, Institute of Convergence Science, Yonsei University, Seoul, Republic of Korea

Eu Chang Hwang, MD, PhD

Chonnam National University Medical School, Hwasun, Republic of Korea

Mi Ah Han, MD, PhD

College of Medicine, Chosun University, Gwangju, Republic of Korea

Sari Khaleel, MD

Memorial Sloan Kettering Cancer Center, New York, New York

Holger J. Schünemann, MD, PhD

McMaster University, Ontario, Canada
Humanitas University, Milan, Italy
Michael G. DeGroot Cochrane Canada Centre & McMaster GRADE Centre, Hamilton, Ontario

Philipp Dahm, MD, MHSc

Minneapolis VA Healthcare System, Minnesota
University of Minnesota School of Medicine, Minneapolis

Norling B, Jung JH, Hwang EC, et al. GRADE reporting in systematic reviews published in the urological literature (2009-2021). *J Urol.* 2023;210(3): 529-536.

Study Need and Importance

The Grading of Recommendations Assessment, Development and Evaluation (GRADE) approach is a methodologically rigorous, transparent, and practical approach to rate the certainty of evidence provided by a body of

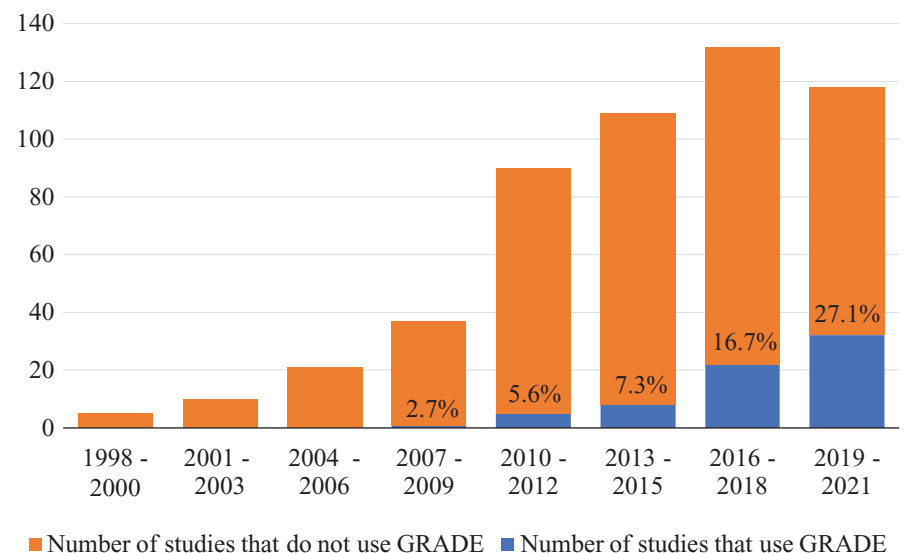


Figure. Total number of systematic reviews and the proportion of systematic reviews that have used the Grading of Recommendations Assessment, Development and Evaluation (GRADE) approach since 1998. Percentages are presented on a per-group basis. During the first 3 time periods (1998-2000, 2001-2003, and 2004-2006) no systematic review reported the use of GRADE.

→ Continued on page 65

GRADE REPORTING IN SYSTEMATIC REVIEWS PUBLISHED IN THE UROLOGICAL LITERATURE (2009-2021)

→ Continued from page 64

evidence summarized in systematic reviews (SRs) and developing guidelines. The growing uptake of GRADE suggests a movement toward the use of a unified system of evidence reporting, increasing accessibility of high-quality data assessment for clinicians and policymakers. Increasing usage of GRADE is a positive development, though little work has been done to evaluate the rigor that users of GRADE apply to their evidence assessments.

What We Found

We found that GRADE was first used in urology SRs in 2009. Since then, its use has increased to approximately 1 in 4 SRs. Only half of SRs reported GRADE use in the abstract, and less than half qualified their results in the abstract with a certainty of evidence rating. Four in 10 SRs lacked a summary of findings table or an evidence profile, and only 1 in 3 SRs referenced the certainty of evidence in their results. GRADE reporting did not improve over time (see Figure).

Limitations

We recognize that many important SRs that inform the practice of urology are published outside urology specialty journals and were therefore not included in the present study. It was beyond the scope of this study to determine whether GRADE had been applied appropriately; instead, we determined whether all critical aspects of the GRADE approach were reported transparently so that the users of these SRs could replicate the findings if they wanted to do so.

Interpretation for Patient Care

Failure to report critical elements of methodology for evidence assessment undermines the confidence we can place in the findings of SRs. These reviews lay the groundwork for clinical guidelines that influence patient care. Our findings suggest a need for improved evidence assessment training and improved reporting guidance. ■

JU INSIGHT

Biopsy Assessment of Oncologic Control 3 Years After Primary Partial Gland Cryoablation in Prostate Cancer

James S. Wysock, MD

NYU Grossman School of Medicine, New York, New York

Eli Rapoport, MD

NYU Grossman School of Medicine, New York, New York

Hunter Hernandez, BS

NYU Grossman School of Medicine, New York, New York

Rozalba Gogaj, MD, MPH

NYU Grossman School of Medicine, New York, New York

Herbert Lepor, MD

NYU Grossman School of Medicine, New York, New York

Wysock JS, Rapoport E, Hernandez H, Gogaj R, Lepor H. Biopsy assessment of oncologic control 3 years following primary partial gland cryoablation: a prospective cohort study of men with intermediate-risk prostate cancer. *J Urol.* 2023;210(3):454-464.

Study Need and Importance

There is increasing adoption of focal therapy (FT) for managing select cases of prostate cancer. We have a 10-year experience using a multitude of ablative energy sources and prefer cryoablation

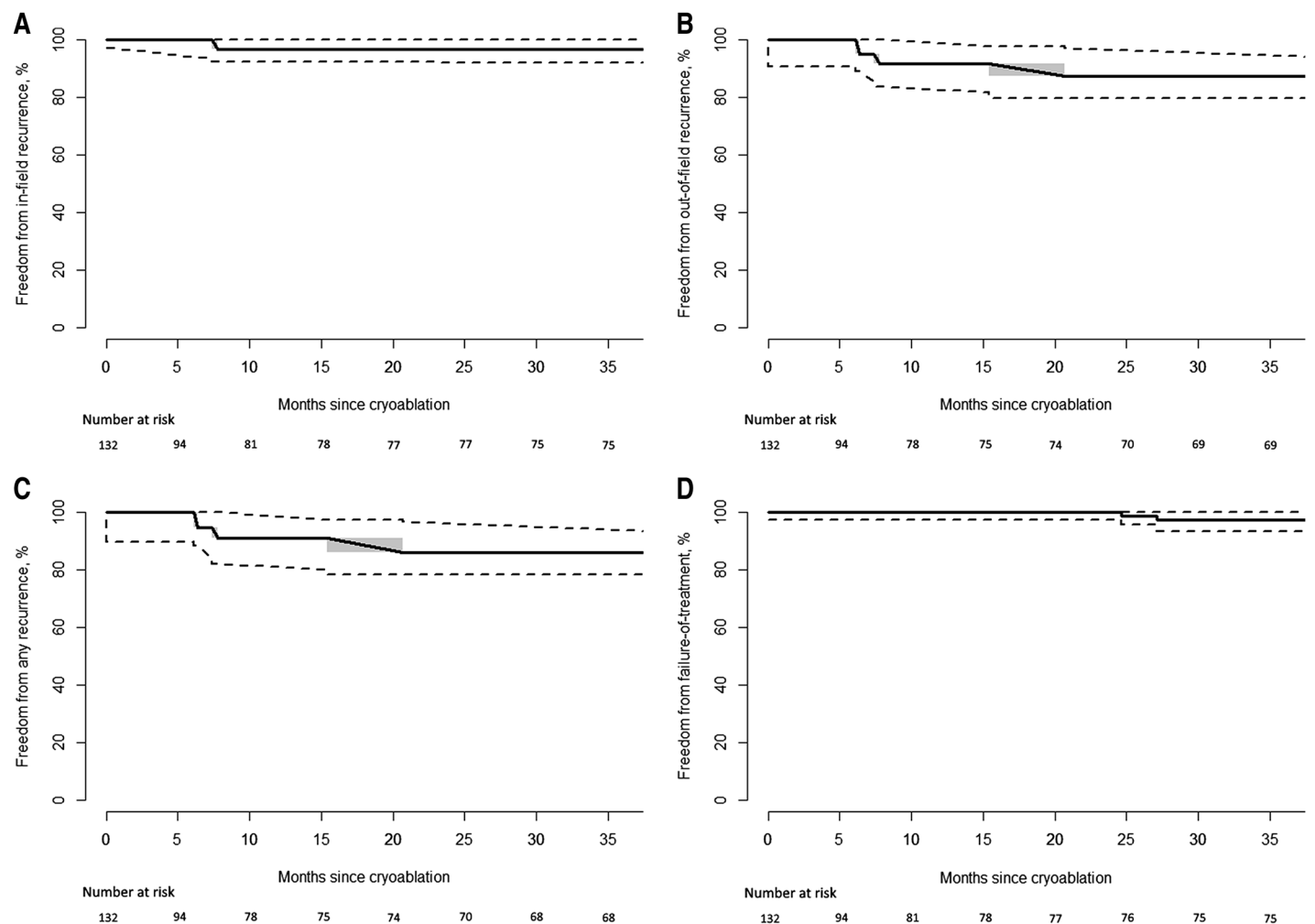


Figure 1. Nonparametric maximum likelihood estimators for freedom from in-field recurrence (A), freedom from out-of-field recurrence (B), freedom from any recurrence (C), and freedom from failure of treatment (D). Recurrence was defined as Gleason grade group ≥ 2 cancer on biopsy, and failure of treatment was defined as whole-gland salvage treatment, metastatic prostate cancer, or prostate cancer mortality. Solid lines indicate nonparametric maximum likelihood estimators. Gray rectangles represent regions of nonunique nonparametric maximum likelihood estimators. Dashed lines represent 95% confidence intervals.

BIOPSY ASSESSMENT OF ONCOLOGIC CONTROL 3 YEARS AFTER PRIMARY PARTIAL GLAND CRYOABLATION IN PROSTATE CANCER

→ Continued from page 65

due to superior delivery of confluent cytotoxic energy to a pre-defined treatment zone. There is a paucity of FT studies performing protocol biopsies at predetermined intervals beyond the first year of treatment. The ultimate role of FT awaits compelling evidence demonstrating intermediate- and long-term oncologic disease control. The present study reports disease recurrence following primary partial gland cryoablation for men with intermediate-risk disease enrolled in an institutional review board-approved prospective outcomes registry undergoing protocol bi-

opsies during the third year after treatment.

What We Found

Our oncologic assessment stipulated protocol biopsy of the pretreatment MRI lesion, any new MRI lesion, and 12-core random systematic biopsy in all subjects during the third year of follow-up. At 36 months, model-estimated rates of freedom from recurrence of in-field, out-of-field, and overall clinically significant cancer were 97% (95% CI: 92-100), 87% (95% CI: 80-94), and 86% (95% CI: 78-93), respectively (see Figure). The

model-estimated proportion with freedom from failure at 36 months was 97% (95% CI: 93-100).

Limitations

Noncompliance with protocol biopsy may introduce unmeasurable reporting bias. These very encouraging observations may not be generalizable to patient populations at other medical centers and less experienced surgeons. Additionally, there are limitations inherent in the statistical analyses, particularly as they pertain to our multiparametric MRI test characteristics and the

structure of our survival models/analyses.

Interpretation for Patient Care

The very low in-field cancer detection rate at 3 years indicates successful ablation of localized cancers. Conversely, our observed out-of-field detection rate highlights the need for continued surveillance following primary partial gland cryoablation. The overwhelming majority of clinically significant recurrences were low volume and managed with active surveillance or salvage partial gland cryoablation. ■

JU INSIGHT

Food Insecurity and Urge Urinary Incontinence: 2005-2010 National Health and Nutrition Examination Survey

Chihiro Okada, BA

Albert Einstein College of Medicine, Bronx, New York

Joseph I. Kim, BA

Albert Einstein College of Medicine, Bronx, New York

Nicole Roselli, MD

Montefiore Medical Center, Bronx, New York

Priyanka Kadam Halani, MD

Montefiore Medical Center, Bronx, New York

Michal L. Melamed, MD

Montefiore Medical Center, Bronx, New York
Albert Einstein College of Medicine, Bronx, New York

Nitya Abraham, MD

Montefiore Medical Center, Bronx, New York

Okada C, Kim JI, Roselli N, Halani PK, Melamed ML, Abraham N. Food insecurity is associated with urge urinary incontinence: an analysis of the 2005-2010 National Health and Nutrition Examination Survey. *J Urol.* 2023;210(3):481-491.

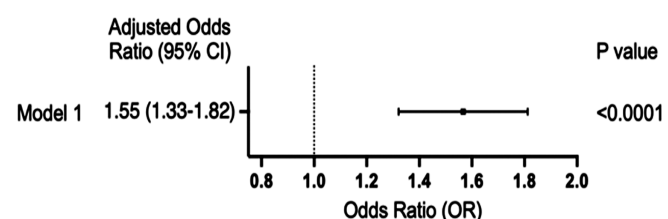
Study Need and Importance

Although numerous biological risk factors for urge urinary incontinence (UUI) have been previously characterized, the effect of social determinants of health is in-

completely understood. Food insecurity is a social determinant of health that we studied for 2 reasons. First, food insecurity influences dietary behavior. Specifically, food-insecure individuals tend to consume less costly, more calorically dense foods. Second, dietary behavior can influence UUI. In particular, caffeinated and carbonated drinks are bladder irritants thought to potentially worsen UUI symptoms. Taken together, we examined the association between UUI and food insecurity, as well as the potential role of diet on UUI.

What We Found

Our analysis found that adults reporting food insecurity were significantly more likely to experience UUI than those who did not (see Figure). Consumption of bladder irritants (caffeine and alcohol) was significantly lower in food-insecure vs -secure participants. When stratified by food insecurity status (yes vs no), caffeine consumption did not differ by UUI status and alcohol consumption was lower



Footnote: Logistic regression analysis was adjusted for age, gender, race, education, health insurance coverage, poverty income ratio, smoking history, alcohol use, BMI, diabetes, stroke, and # of comorbidities.

Figure. Association between urge urinary incontinence and food insecurity in 14,847 participants of National Health and Nutrition Examination Survey 2005-2010. Logistic regression analysis was adjusted for age, gender, race, education, health insurance coverage, poverty income ratio, smoking history, alcohol use, body mass index (BMI), diabetes, stroke, and number of comorbidities. CI indicates confidence interval.

among participants with vs without UUI. These data indicate that diet alone does not drive the association between UUI and food insecurity. Rather, food insecurity may be a proxy for social inequity, perhaps the greatest driver of disease.

Limitations

The National Health and Nutrition Examination Survey reflects participants' diet from a 24-hour snapshot, which may not fully represent dietary behavior. Our results comparing diets of various populations found statistically significant

differences which may not be clinically relevant. Further, residents of elderly care or nursing homes are not included in National Health and Nutrition Examination Surveys, which excluded a meaningful portion of UUI patients.

Interpretation for Patient Care

The relationship between social inequity, like food insecurity, and UUI can inform public health policy changes that may ultimately be more beneficial in improving patient outcomes on a population level. ■

JU INSIGHT

Mpox Genital Lesions: A Large Single-center Experience With Intermediate Follow-up

Justin Lee, MD

Columbia University Irving Medical Center,
New York, New York

Jacob McLean, MD

Columbia University Irving Medical Center,
New York, New York

Jason Zucker, MD

Columbia University Irving Medical Center,
New York, New York

Steven Brandes, MD

Columbia University Irving Medical Center,
New York, New York

Gregory Joice, MD

Columbia University Irving Medical Center,
New York, New York

Lee J, McLean J, Zucker J, Brandes S, Joice G. Mpox genital lesions: a large single-center experience with intermediate follow-up. *J Urol.* 2023;210(3):510-516.

Study Need and Importance

Since the Mpox (formerly known as Monkeypox virus) glob-

al outbreak in 2022, there have been limited reports on the clinical course and management of genital lesions related to Mpox infections. Urologists play an important role in the diagnosis and management of these genital lesions. Thus, there is a need for better understanding of the outcomes of these lesions.

What We Found

In our cohort of 68 subjects, the mean age was 34.9 years, all participants were assigned male sex at birth, and mean follow-up period was 20.3 days. Management included supportive care, antibiotic treatment for bacterial superinfection, and medical debridement with collagenase for severe lesions. Urological consultation was obtained in 5 (7.4%) cases. Sixteen (23.5%) patients had significant penile skin changes at final follow-up, which was significantly associated with lesion size ($P=.001$). An example of genital skin



Figure. Genital skin change after 20 days.

changes can be seen in the Figure. Importantly, no subjects in this cohort required surgical interventions.

Limitations

There are several important limitations to mention for our

study. One is that all patients were treated with tecovirimat with no control group available to directly compare to. Thus, our findings cannot be generalized to those not undergoing treatment with tecovirimat. Additionally, the follow-up period was 20.3 days, so long-term outcomes of these lesions and penile skin changes beyond this time period are not well understood.

Interpretation for Patient Care

Our study demonstrates that patients undergoing treatment with tecovirimat with genital lesions can be managed without need for surgical therapy. Urologists can consider debridement of severe genital lesions with topical collagenase. Finally, urologists can utilize these findings to guide management of Mpox lesions in the future. ■

JU INSIGHT

The PINNACLE Study: Optilume BPH Catheter System for Lower Urinary Tract Symptoms

Steven A. Kaplan, MD

Icahn School of Medicine at Mount Sinai, New York,
New York

Jared Moss, MD

Ochsner LSU Health, Shreveport, Louisiana

Sheldon Freedman, MD

Sheldon Freedman Urology, Las Vegas, Nevada

Karl Coutinho, MD

New Jersey Urology LLC, Millburn

Ning Wu, MD

Comprehensive Urologic Care, Lake Barrington,
Illinois

Mitchell Efos, MD

Accumed Research Associates, Garden City, New York

Dean Elterman, MD

University of Toronto, Ontario, Canada

Richard D'Anna, MD

Arkansas Urology, Little Rock

Oswaldo Padron, MD

Florida Urology Partners, Tampa

Kaiser J. Robertson, MD

Chesapeake Urology, Hanover, Maryland

Samuel Lawindy, MD

Advanced Urology Institute, Daytona Beach,
Florida

Sandeep Mistry, MD

North Austin Urology, Texas

Neal Shore, MD

Carolina Urologic Research Center, Myrtle Beach,
South Carolina

Jeffrey Spier, MD

Rio Grande Urology, El Paso, Texas

Jed Kaminetsky, MD

Manhattan Medical Research Center,
New York

Brian Mazzearella, MD

Urology Austin, Texas

David Cahn, MD

Colorado Clinical Research, Lakewood

Mark Jalkut, MD

Associated Urologists of North Carolina, Raleigh

Alexis Te, MD

Weill Medical College of Cornell University,
New York, New York

Kaplan SA, Moss J, Freedman S, et al. The PINNACLE study: a double-blind, randomized, sham-controlled study evaluat-

ing the Optilume BPH catheter system for the treatment of lower urinary tract symptoms secondary to benign prostatic hyperplasia. *J Urol.* 2023;210(3):500-509.

Study Need and Importance

The percentage of men who suffer annually from urinary tract symptoms secondary to benign prostatic hyperplasia (BPH) remains high (70% of men >70 years); however,

→ Continued on page 68

THE PINNACLE STUDY: OPTILUME BPH CATHETER SYSTEM FOR LOWER URINARY TRACT SYMPTOMS

→ Continued from page 67

less than 3% of drug therapy or watchful waiting patients move to surgical intervention, likely due to unwanted side effects and diminished sexual function. Minimally invasive BPH therapies have done well minimizing these effects, but they have failed to achieve their goal of replacing maximum urinary flow rates (Q_{max}) associated with transurethral prostatectomy—until now.

What We Found

We randomized 148 men (100 active, 48 sham) at 18 centers in North America. Subjects receiving Optilume BPH saw a mean±SD reduction in International Prostate Symptom Score of 11.5±7.8 points at 1 year, as compared to a reduction of 8.0±8.3 points at 3 months in the sham arm. Q_{max} improved dramatically after treatment with Optilume BPH, with an improvement of +10.3 mL/s from baseline to 1 year (+125%; see Figure). Treatment with Optilume BPH provides immediate and sustained improve-

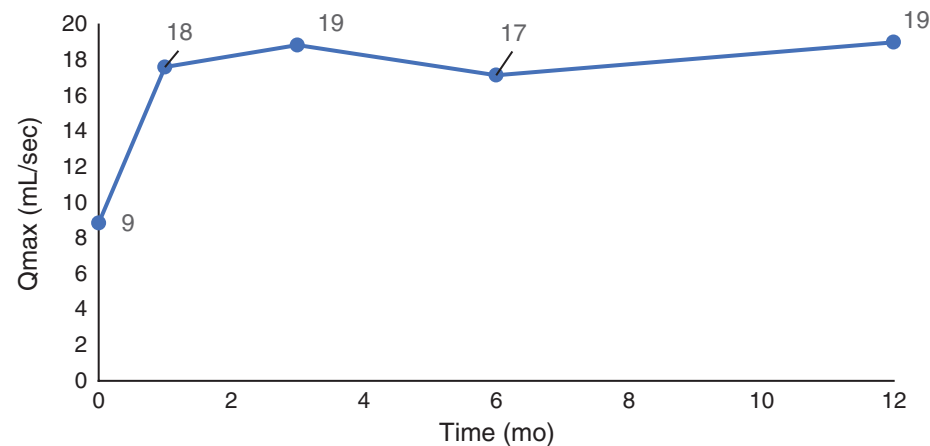


Figure. Peak urinary flow rate (Q_{max}) after treatment with Optilume BPH (as observed).

ments in obstructive symptoms and flow rate while preserving erectile and ejaculatory function. Treatment is well tolerated and can be done in an office or ambulatory setting.

Limitations

Eligibility criteria for this study limited enrollment to those men with prostates below 80 g and with moderate or severe symptoms and restricted flow; results may not be

generalizable to all men with lower urinary tract symptoms secondary to BPH.

Interpretation for Patient Care

Treatment of lower urinary tract symptoms secondary to obstructive BPH with Optilume BPH results in significant and clinically meaningful improvements immediately postprocedure, which are sustained

“Treatment with Optilume BPH provides immediate and sustained improvements in obstructive symptoms and flow rate while preserving erectile and ejaculatory function.”

through 1 year of follow-up. The improvement seen for Q_{max} and postvoid residual through 1 year represents the largest seen for this product class. This minimally invasive treatment represents an attractive option to patients looking to maintain sexual function while achieving durable symptom relief and improved flow. ■

JU INSIGHT

Impact of Medicare Low-income Subsidy on Treatment Access, Choice, and Outcomes in Prostate Cancer

Daniel D. Joyce, MD

Mayo Clinic, Rochester, Minnesota

Xuanzi Qin, PhD, MSPH

Vanderbilt University Medical Center, Nashville, Tennessee

Vidit Sharma, MD

Mayo Clinic, Rochester, Minnesota

Stephen A. Boorjian, MD

Mayo Clinic, Rochester, Minnesota

Daniel A. Barocas, MD, MPH, FACS

Vanderbilt University Medical Center, Nashville, Tennessee

Stacie B. Dusetzina, PhD

Vanderbilt University Medical Center, Nashville, Tennessee

Kelvin A. Moses, MD, PhD, FACS

Vanderbilt University Medical Center, Nashville, Tennessee

Joyce DD, Qin X, Sharma V, et al. The impact of Medicare

low-income subsidy on access to treatment, treatment choice, and oncologic outcomes in patients with metastatic prostate cancer. *J Urol.* 2023;210(3):447-453.

Study Need and Importance

The number of treatment options for men with advanced prostate cancer has grown significantly over the past 20 years. As oral hormonal therapy use has increased, so have the costs of these drugs for patients and health plans. The low-income subsidy (LIS) for Medicare prescription drug coverage program provides oral cancer drug cost-sharing support for

Table. Characteristics Associated With Oral Over IV First Treatment Choice (Other Than Androgen Deprivation Therapy) Among Patients With Metastatic Prostate Cancer Receiving Nonandrogen Supplementary Systemic Therapies for Metastatic Prostate Cancer (Linear Probability and Logistic Regression Model Results)

	Receipt of oral nonandrogen supplementary systemic therapy (linear probability model)			Receipt of oral nonandrogen supplementary systemic therapy (logistic regression model)		
	% Probability difference	95% CI	P value	Odds ratio	95% CI	P value
No low-income subsidy	Ref			Ref		
Low-income subsidy	17	(12, 22)	< .001	2.47	(1.86, 3.28)	< .001

Abbreviations: CI, confidence interval; Ref, reference.

low-income beneficiaries. Whether receipt of LIS is associated with greater uptake of more expensive oral hormonal therapy for men

with advanced prostate cancer is unknown.

→ Continued on page 69

IMPACT OF MEDICARE LOW-INCOME SUBSIDY ON TREATMENT

→ Continued from page 68

What We Found

Of the 5,929 patients with advanced prostate cancer identified in the Surveillance, Epidemiology, and End Results–Medicare linked data set, 1,766 (30%) had LIS. On multivariable analysis, those with LIS were more likely to receive oral as opposed to IV treatments compared to patients without LIS (see Table). However, patients with LIS were less likely to initiate any nonandrogen deprivation therapy supplementary systemic therapy (oral or IV) compared to those without LIS. Additionally, patients with LIS experienced worse

overall survival than those without LIS.

Limitations

Our study is limited by the inability to account for prostate cancer disease burden, patient and physician treatment preferences, and patient-specific contraindications that may have influenced treatment decision-making. Our findings should be interpreted in the context of a historical study period. Additionally, we were unable to assess the utilization of other drug assistance programs that may have influenced a pa-

“These findings highlight the need for continued efforts to overcome obstacles to health care access and treatment diffusion in low-income patients.”

tient’s ability to receive higher-cost treatments.

Interpretation for Patient Care

These findings highlight the need for continued efforts to overcome obstacles to health care access and treatment diffusion in low-income patients. Policy changes that reduce and cap out-of-pocket costs for orally administered anticancer treatments covered under Medicare Part D could reduce financial toxicity and improve uptake of these treatments among individuals not eligible for current subsidies. ■

JU INSIGHT

Early vs Delayed Transurethral Surgery in Acute Urinary Retention: Does Timing Make a Difference?

Daniel M. Frendl, MD, PhD*

Massachusetts General Hospital, Harvard Medical School, Boston
Mayo Clinic, Phoenix, Arizona

Wesley H. Chou, MD*

Massachusetts General Hospital, Harvard Medical School, Boston

Ya-Wen Chen, MD, MPH

Codman Center, Massachusetts General Hospital, Harvard Medical School, Boston

David C. Chang, PhD

Codman Center, Massachusetts General Hospital, Harvard Medical School, Boston

Michelle M. Kim, MD, PhD

Massachusetts General Hospital, Harvard Medical School, Boston

*Co-first authors.

Frendl DM, Chou WH, Chen YW, Chang DC, Kim MM. Early vs delayed transurethral surgery in acute urinary retention: does timing make a difference?. *J Urol.* 2023;210(3):492-499.

Study Need and Importance

Acute urinary retention is one of the most common diseases among older men. Management ranges

from pharmacological treatment to prostate debulking surgery. We were interested in whether long-term outcomes differed among men who underwent early prostate debulking surgery after an event of urinary retention compared to men who had a delayed surgical intervention.

What We Found

We examined 17,474 men who underwent prostate debulking surgery and found that men who had surgery more than 6 months after their initial urinary retention episode had a higher risk of subsequent reoperation and recatheterization at 10 years compared to men who had not been catheterized. Those who had a higher number of preoperative catheterizations had higher rates of failure.

Limitations

Our study was conducted using claims data, which may not capture important clinical factors such as preoperative prostate size, duration of catheterization, pharma-

cological utilization, and clinical assessments of bladder function that affect surgical decision-making. Additionally, we did not have ambulatory claims, which may miss outpatient catheterization episodes. There is also a potential for misclassification of catheterization events in terms of the indication for acute retention vs other causes, although we only considered catheterization events associated with a benign prostatic hyperplasia (BPH) diagnosis. Furthermore, although we attempted to exclude any patients with underlying neurological conditions contributing to bladder dysfunction, without robust clinical data we cannot be certain that patients’ retention episodes could entirely be attributed to progressive bladder outlet obstruction from BPH.

Interpretation for Patient Care

Our work suggests that prompt referral to urology should be considered for patients with acute retention to more closely evaluate for bladder outlet obstruction and

“Our work suggests that prompt referral to urology should be considered for patients with acute retention to more closely evaluate for bladder outlet obstruction and evaluate whether they may be candidates for surgery.”

evaluate whether they may be candidates for surgery. Additionally, it may be beneficial for men with lower urinary tract symptoms to consider BPH surgery before progressing to retention, thereby avoiding the progression to acute urinary retention and prolonged catheterization. ■

JU INSIGHT

Applicability of the International Index of Erectile Function in Young Men With Spina Bifida

James T. Rague, MD

Ann & Robert H. Lurie Children's Hospital of Chicago, Illinois

Josephine Hirsch, BA

Ann & Robert H. Lurie Children's Hospital of Chicago, Illinois

Theresa Meyer, MS, RN, CPN

Ann & Robert H. Lurie Children's Hospital of Chicago, Illinois

Courtney Streur, MD, MS

CS Mott Children's Hospital, University of Michigan, Ann Arbor

Iliana Rosoklija, MPH

Ann & Robert H. Lurie Children's Hospital of Chicago, Illinois

Stephanie Kielb, MD

Northwestern University Feinberg School of Medicine, Chicago, Illinois

Earl Y. Cheng, MD

Ann & Robert H. Lurie Children's Hospital of Chicago, Illinois

Diana K. Bowen, MD

Ann & Robert H. Lurie Children's Hospital of Chicago, Illinois

Elizabeth B. Yerkes, MD

Ann & Robert H. Lurie Children's Hospital of Chicago, Illinois

David I. Chu, MD, MSCE

Ann & Robert H. Lurie Children's Hospital of Chicago, Illinois

Rague JT, Hirsch J, Meyer T, et al. "I just haven't done any of that": applicability of the international index of erectile function in young men with spina bifida. *J Urol.* 2023; 210(3):538-547.

Study Need and Importance

Young adults with spina bifida (SB) face sexual health challenges related to their underlying neurological condition. Current understanding of how SB alters

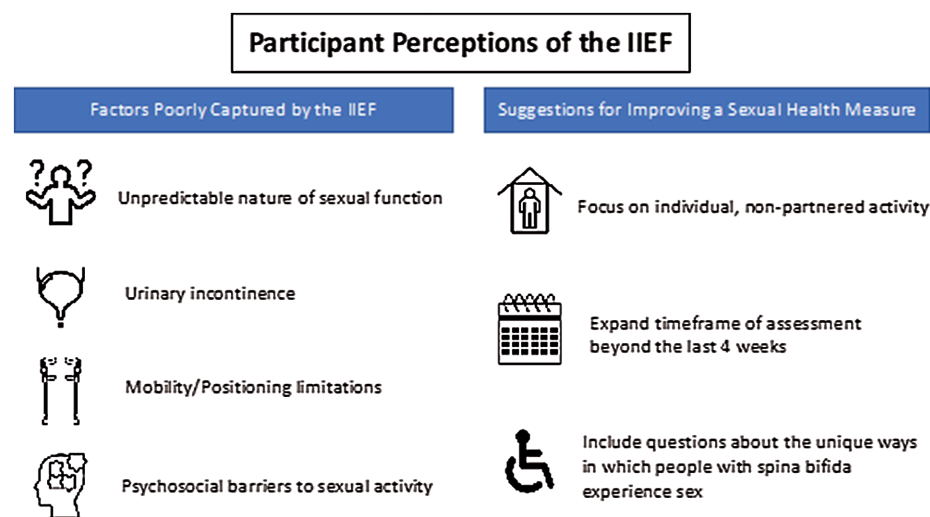


Figure. Participant perceptions of the International Index of Erectile Function (IIEF) including spina bifida-specific sexual health factors that are poorly captured by the IIEF and suggestions for how a new sexual health measure could better capture the sexual experiences of men with spina bifida.

male sexual health is limited by small studies with heterogeneous populations and poor objective assessments of sexual health. Often, non-SB-specific sexual health measures are used, such as the International Index of Erectile Function (IIEF), which is designed for able-bodied males. For men with

SB, the IIEF appears to be limited in applicability, developmental appropriateness, and domain coverage to capture SB-specific sexual health experiences. However, the perceived applicability of the IIEF among men with SB is unknown. To improve clinical assessment and guide future disease-specific measure development, understanding the perspectives and sexual experiences of men with SB is imperative.

What We Found

Qualitative interviews with young men with SB elicited participant perspectives on the applicability of the IIEF. While several participants perceived the IIEF to be applicable, others reported it was not based on their self-definition of "sexually active." Several aspects of the sexual health experience not well captured by the IIEF were identified (see Figure). Discordance was seen between IIEF responses

"A disease-specific measure that better captures patient experience would be helpful to enhance communication and the objective assessment of sexual health in men with SB."

and discussions with individual participants regarding their sexual experiences, suggesting poor understanding of the IIEF. Participants provided suggestions for how a measure could be improved and made more applicable for men with SB (see Figure).

Limitations

Our findings may not be transferable to the broader population of individuals with SB outside of our study population.

Interpretation for Patient Care

The IIEF is inadequate to capture the sexual health experiences of men with SB. Thus, clinical assessment of sexual health relies predominantly on clinical communication. A disease-specific measure that better captures patient experience would be helpful to enhance communication and the objective assessment of sexual health in men with SB. ■

"To improve clinical assessment and guide future disease-specific measure development, understanding the perspectives and sexual experiences of men with SB is imperative."

JU INSIGHT

Randomized Controlled Trial of Single-dose Perioperative Pregabalin in Ureteroscopy

Geoffrey H. Rosen, MD
University of Missouri, Columbia

Paige A. Hargis, MD
University of Colorado, Denver

Alp Kahveci, MD
School of Medicine, University of Missouri, Columbia

Connor Lough, MD
Loyola University, Chicago, Illinois

Andrew Moss, MD
University of Alabama, Birmingham

Mojgan Golzy, PhD
University of Missouri, Columbia

Katie Murray, DO
NYU-Langone Health, New York, New York

Rosen GH, Hargis PA, Kahveci A, et al. Randomized controlled trial of single-dose perioperative pregabalin in ureteroscopy. *J Urol.* 2023;210(3):517-528.

Study Need and Importance

Ureteroscopy is among the most commonly performed procedures in urology. Postprocedural pain is frequently difficult to control. Many different strategies have been tried, with varying success. In other arenas, single-dose perioperative pregabalin has been a useful adjunct in preventing/controlling postprocedural pain. We evaluated whether this was helpful in ureteroscopy.

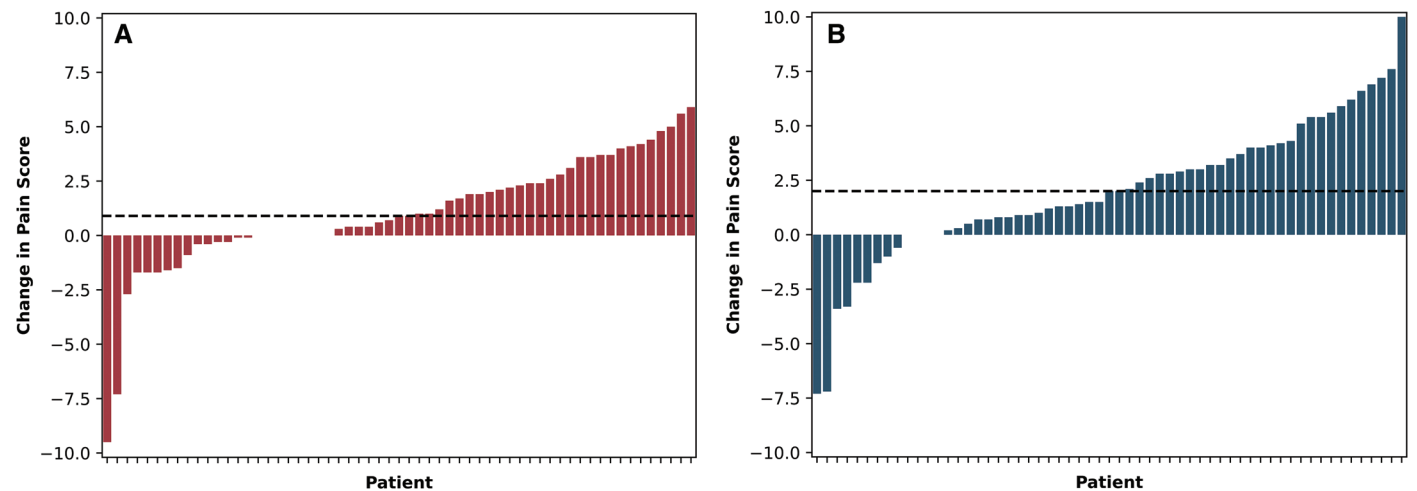


Figure. Change in pain score from pre- to postoperative for those receiving placebo (A) and pregabalin (B). Dashed line represents the median change in each group.

What We Found

We enrolled 118 patients with normal renal function and no regular use of opioids or pregabalin undergoing ureteroscopy for any reason. In a 1:1 ratio, we randomized patients to receive a single dose of 300 mg pregabalin or identical placebo 1 hour before ureteroscopy. We measured pain after the procedure on a 0-10 scale. We also evaluated any cognitive issues. Postprocedural pain was higher in the group that received pregabalin (placebo median [IQR]: 2.0 [0.6,4.2], pregabalin: 3.7 [1.5,6.3], mean difference [95% CI] 1.4 [0.5-2.4]; $P = .004$; see Figure). The group that received pregabalin was younger on average than the placebo

group (a factor known to impact postureteroscopy pain). Controlling for age and preoperative pain, ANCOVA demonstrated statistically significantly higher pain among those who received pregabalin (adjusted $P = .02$). There was no difference in our proxy measure of cognition between the groups.

Limitations

This was a single-center pragmatic study, which may limit applicability at other facilities using specific anesthetic regimens. The groups were unbalanced in terms of age, which we attempted to correct for using ANCOVA. None-

theless, this analysis is unable to control for all variables (measured and unmeasured) fully. Therefore, we believe the best interpretation of our results is that there was no improvement in pain attributable to perioperative pregabalin.

Interpretation for Patient Care

In this trial evaluating the efficacy of single-dose perioperative pregabalin in ureteroscopy, pregabalin did not decrease postoperative pain when compared to placebo. Urologists should not routinely use this adjunctive medication in ureteroscopy, as it is unlikely to provide benefit. ■

JU INSIGHT

Role of Technetium-99m-Sestamibi Imaging in Differentiating Oncocytic Tumors vs Renal Cell Carcinoma

Jared P. Schober, MD
Fox Chase Cancer Center, Philadelphia, Pennsylvania

Avery Braun, DO
Fox Chase Cancer Center, Philadelphia, Pennsylvania

Kevin B. Ginsburg, MD, MS
Fox Chase Cancer Center, Philadelphia, Pennsylvania

Spencer Bell, MD
Fox Chase Cancer Center, Philadelphia, Pennsylvania

Alberto Andres Castro Bigalli, MD, MS
Fox Chase Cancer Center, Philadelphia, Pennsylvania

Michelle Chen, MD
Fox Chase Cancer Center, Philadelphia, Pennsylvania

Robert Wang, MD
Fox Chase Cancer Center, Philadelphia, Pennsylvania

Diana Magee, MD
Fox Chase Cancer Center, Philadelphia, Pennsylvania

Laura Bukavina, MD
Fox Chase Cancer Center, Philadelphia, Pennsylvania

Elizabeth Handorf, PhD
Fox Chase Cancer Center, Philadelphia, Pennsylvania

Jian Q. Yu, MD
Fox Chase Cancer Center, Philadelphia, Pennsylvania

ROLE OF TECHNETIUM-99M SESTAMIBI IMAGING

→ Continued from page 71

David Y. T. Chen, MD

Fox Chase Cancer Center, Philadelphia, Pennsylvania

Richard E. Greenberg, MD

Fox Chase Cancer Center, Philadelphia, Pennsylvania

Marc C. Smaldone, MD, MSHP

Fox Chase Cancer Center, Philadelphia, Pennsylvania

Rosalia Viterbo, MD

Fox Chase Cancer Center, Philadelphia, Pennsylvania

Andres F. Correa, MD

Fox Chase Cancer Center, Philadelphia, Pennsylvania

Robert G. Uzzo, MD

Fox Chase Cancer Center, Philadelphia, Pennsylvania

Alexander Kutikov, MD

Fox Chase Cancer Center, Philadelphia, Pennsylvania

Table. Relationship Between “Hot” and “Cold” Masses and the Concordance/Discordance Rates at Pathological Assessment (Biopsy or Surgery)

	Hot mass	Cold mass
All interventions, No./total No. (%)		
Concordant	6/7 (86)	36/45 (80)
Discordant	1/7 (14)	9/45 (20)
Surgical pathology, No./total No. (%)		
Concordant	4/4 (100)	35/40 (88)
Discordant	0/4 (0)	5/40 (12)
Biopsy pathology, No./total No. (%)		
Concordant	2/3 (67)	1/5 (20)
Discordant	1/3 (33)	4/5 (80)

(HOCTs) often undergo resection due to the inability to identify these low-risk lesions with conventional imaging. Initial reports suggest (99mTc)-sestamibi could improve the ability to accurately identify HOCTs. Prior studies defined testing characteristics of (99mTc)-sestamibi, but little is known about its utility and accuracy when integrated into real world clinical practice.

What We Found

We present the first series of the integration of (99mTc)-sestamibi into

clinical practice in a high-volume tertiary referral urologic oncology practice. Sixty patients were found to have “cold” masses concerning for renal cell carcinoma with biopsy or surgical pathology available for 45 masses. Pathologic concordance with imaging for cold masses was 80%, which is well below our institution’s historical benign resection rate. Eleven patients had “hot” masses (consistent with benign oncocytoma or HOCTs) with an 85.7% pathologic concordance rate demonstrated in the 7 masses with pathology (see Table).

Limitations

Our data capture the integration of (99mTc)-sestamibi into real-world clinical practice, and its generalizability is limited by our institutional case mix and nonstandardized management strategy, including the decision to obtain (99mTc)-sestamibi imaging and decision for intervention. Yet, our study provides insight into the strengths and limitations of (99mTc)-sestamibi in clinical practice. Not all patients in our series underwent pathologic sampling, thus the accuracy of (99mTc)-sestamibi imaging could not be defined from our data.

Interpretation for Patient Care

Our institutional series reporting pathologic concordance rates and patient management strategies after the integration of (99mTc)-sestamibi imaging into clinical practice indicates the utility of this imaging entity in real-world practice remains poorly defined. Our findings of 80% pathologic concordance for cold masses indicate (99mTc)-sestamibi is not ready to replace renal mass biopsy in clinical practice. ■

Schober JP, Braun A, Ginsburg KB, et al. Clinical performance of technetium-99m-sestamibi SPECT/CT imaging in differentiating oncocytic tumors from renal cell carcinoma in routine clinical practice. *J Urol.* 2023;210(3):438-445.

Study Need and Importance

Benign oncocytomas and hybrid oncocytic/chromophobe tumors

JU INSIGHT

Gamma-band Intermuscular Connectivity in Women With Interstitial Cystitis/Bladder Pain Syndrome

Michael Houston, MS

University of Houston, Texas

Nicholas Dias, PhD

University of Houston, Texas

Yun Peng, PhD

University of Houston, Texas

Theresa Spitznagle, DPT

Washington University School of Medicine, St Louis, Missouri

Marcie Harris-Hayes, DPT

Washington University School of Medicine, St Louis, Missouri

H. Henry Lai, MD

Washington University School of Medicine, St Louis, Missouri

Yingchun Zhang, PhD

University of Houston, Texas

Houston M, Dias N, Peng Y, et al. Gamma-band intermuscular connectivity is associated with increased neural drive to pelvic floor muscles in women with interstitial cystitis/bladder

der pain syndrome *J Urol.* 2023; 210(3):465-471.

Study Need and Importance

Patients suffering from chronic pelvic pain conditions such as interstitial cystitis/bladder pain syndrome (IC/BPS) can exhibit pelvic floor muscle (PFM) dysfunction including elevated activity at rest.

While an abnormally elevated neural drive has previously been identified in IC/BPS patients, further efforts to characterize this phenomenon have not directly assessed common shared neural input to the PFM, but rather cortical correlates via functional neuroimaging. Intermuscular connectivity (IMC) of the PFM is one way to quantify

→ Continued on page 73

GAMMA-BAND INTERMUSCULAR CONNECTIVITY IN WOMEN WITH INTERSTITIAL CYSTITIS/BLADDER PAIN SYNDROME

→ Continued from page 72

and assess impaired neural drive in a more direct fashion.

What We Found

The gamma-band IMC between the left and right sides of the PFM was found to be significantly different for healthy controls when contrasting the resting and contraction conditions, but no such difference was identified in IC/BPS patients (see Figure). This phenomenon was accompanied by an expectedly higher than normal resting root mean squared amplitude in patients. Other typical frequency bands (alpha and beta frequency-bands) associated with sensorimotor paradigms were unremarkable.

Limitations

Study limitations include limited sample size (N=15) and data length for connectivity analysis, although statistical significance was still identified across groups. Further studies are needed to evaluate the negative

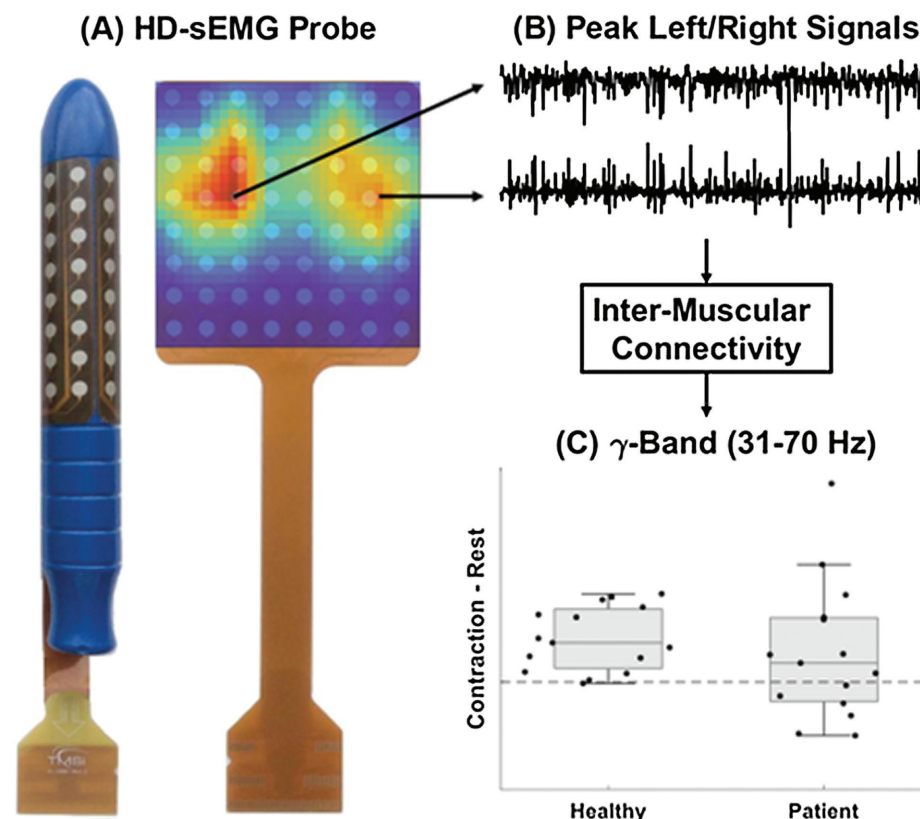


Figure. Visual summary. A, Vaginal probe and high-density surface electromyography (HD-sEMG) grid with 2D mapping of resting pelvic floor muscle amplitude used to identify peak activation on the left and right sides of the pelvic floor musculature. B, Signals from areas previously determined for intermuscular connectivity analysis. C, Comparison of average gamma-band intermuscular connectivity across rest and contraction conditions for both groups. Dashed horizontal line indicates zero.

consequences of lower urinary tract symptoms in general on IMC. Additionally, the functional interactions between the PFM and other synergistically coactive muscles in the abdomen and other supporting muscles should be explored.

Interpretations for Patient Care

IMC is an easily calculable and readily deployable myoelectric biomarker for clinical use. Physicians can benefit from the methodology and results of this study by using IMC to determine whether a patient's case of chronic pelvic pain involves neurogenic PFM dysfunction or not, which in turn may influence the decision-making process of differential diagnoses and ultimately treatment plans. For example, patients with abnormal PFM IMC may benefit more from myofascial therapy targeting PFM myofascial pain, whereas those patients with normal IMC may respond better to movement pattern training. ■

UPJ INSIGHT

Implantable Penile Prosthesis for Erectile Dysfunction: Insurance Coverage in the United States

Mohit Khera, MD, MBA, MPH
Baylor College of Medicine, Houston, Texas

Joshua P. Langston, MD
Urology of Virginia/Eastern Virginia Medical School,
Virginia Beach

Matthew E. Pollard, MD
Posterity Fertility, PC, Denver, Colorado

Denise Asafu-Adjei, MD, MPH
Loyola University Chicago Stritch School of Medicine,
Maywood, Illinois

Natalie C. Edwards, MSc
Health Services Consulting Corporation, Boxborough,
Massachusetts

Krista D. Nitschelm, COC, PAHM
Health Economics & Market Access, Pelvic Floor &
Prosthetic Urology, Boston Scientific Corporation,
Marlborough, Massachusetts

Mital Patel, MD
Global Value & Outcomes, Boston Scientific
Corporation, Marlborough, Massachusetts

Samir K. Bhattacharyya, PhD
Health Economics & Market Access, Boston Scientific
Corporation, Marlborough, Massachusetts

Khera M, Langston JP, Pollard ME, et al. Implantable penile prosthesis for erectile dysfunction: insurance coverage in the United States. *Urol Pract.* 2023;10(5):501-510.

Study Need and Importance

The extent of insurance coverage for implantable penile prostheses (IPPs) for erectile dysfunction (ED) has not yet been adequately ascertained; hence, it is unclear whether this is a barrier to access for IPP treatment. This study utilized a manufacturer's benefit verification databases to ascertain insurance coverage for IPP for ED.

“IPP insurance coverage was most extensive for government-based insurance (Medicare 98.7%, Medicare Advantage 97.1%, Tricare 100%, and Veterans Affairs 80.0%) but was also favorable for commercial insurance (75.0%; see Figure).”

What We Found

IPP insurance coverage was most extensive for government-based insurance (Medicare 98.7%, Medicare Advantage 97.1%, Tricare 100%, and Veterans Affairs 80.0%) but was also favorable for commercial insurance (75.0%; see Figure). The most common reason for lack of coverage was employer exclusion; the proportion of patients with no coverage due to exclusion increased from 13.5% in 2019 to 17.5% in 2021. Analyses of the employer-sponsored health plan database (n=3,083 patients) showed that 63.1% of patients were approved or verified for coverage and 34.2% did not have coverage due to health plan exclusions.

→ Continued on page 74

IMPLANTABLE PENILE PROSTHESIS FOR ERECTILE DYSFUNCTION: INSURANCE COVERAGE IN THE UNITED STATES

→ Continued from page 73

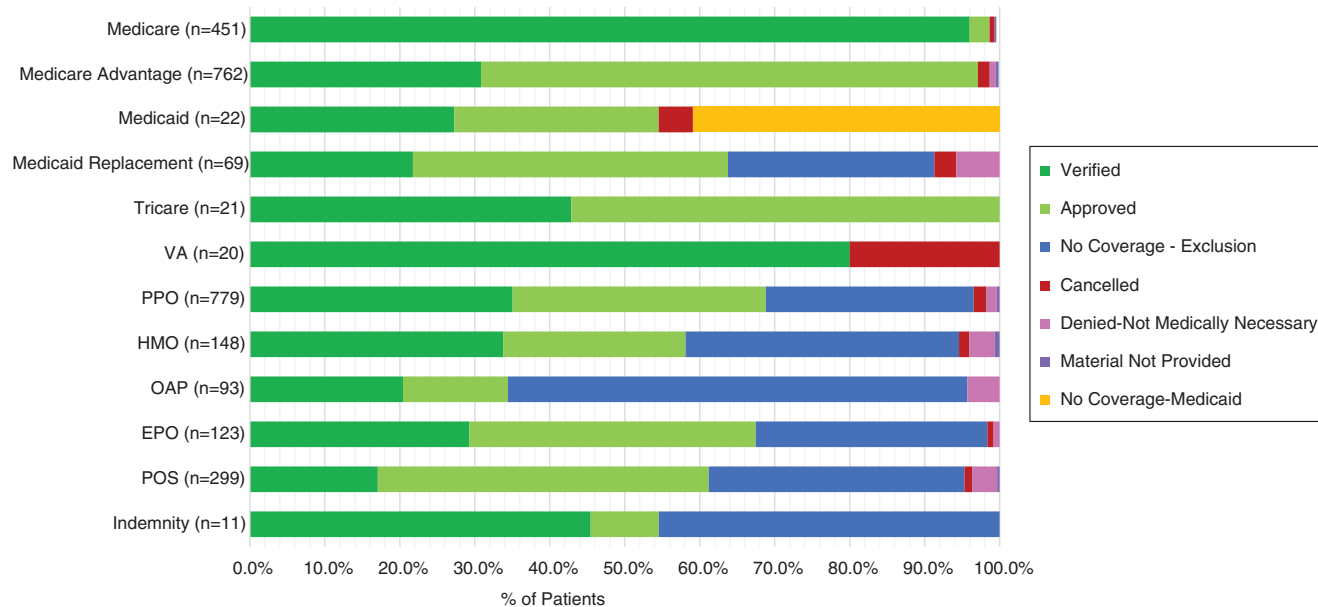


Figure. Implantable penile prosthesis approval status for the all-payer cohort by type of insurance status. Case status meanings: Verified: medical benefits were verified, and the procedure is covered. Approved: the health plan approved a prior authorization for the procedure. No Coverage-Exclusion: the employer's health plan excludes medical benefits through the employer-sponsored health plan for a penile prosthesis. Cancelled: A request was sent by the physician's office to cancel the verification of benefits. Denied-Not Medically Necessary: the request for the procedure was denied for not being medically necessary. Material Not Provided: the insurance benefit verification process was unable to be continued as the medical documentation requested was not received from the provider's office. No Coverage-Medicaid: the state Medicaid excludes coverage for penile prosthesis. EPO indicates exclusive provider organization; HMO, health maintenance organization; OAP, open access plus; POS, point-of-service; PPO, preferred provider organization; VA, Veterans Affairs.

Limitations

The data represent the cases that providers submitted to the manufacturer benefit verification system and may not be generalizable to all patients seeking IPP for ED. Also, retrospective databases may have clerical inaccuracies, coding errors, or missing data.

Interpretation for Patient Care

Approximately 80% of patients have IPP insurance coverage. Employer exclusion is the most common reason for lagging coverage, with rates of exclusion increasing 29.3% from 2019 to 2021. There may be a misnomer that plans will likely not cover IPP placement and a lack of awareness of available support in seeking coverage from benefit verification services. ■

UPJ INSIGHT

TikTok and YouTube Videos on Overactive Bladder Exhibit Poor Quality and Diversity

Jenna Kanner, BS

University of Maryland School of Medicine, Baltimore

Suneet Waghmarae, BA

University of Maryland School of Medicine, Baltimore

Amy Nemirovsky, MD, MS

University of Maryland Medical Center, Baltimore

Shu Wang, MD

University of Maryland Medical Center, Baltimore

Stacy Loeb, MD, MSc, PhD (hon)

New York University, New York
Manhattan Veterans Affairs Medical Center,
New York, New York

Rena Malik, MD

University of Maryland Medical Center, Baltimore

Kanner J, Waghmarae S, Nemirovsky A, Wang S, Loeb S, Malik R. TikTok and YouTube videos on overactive bladder exhibit poor quality and diversity. *Urol Pract.* 2023;10(5):493-500.

Study Need and Importance

Social media is commonly used to acquire health care information, and

is being increasingly used by health care professionals, including urologists, to inform patients about medical conditions and treatment. Overactive bladder (OAB) is a common condition in the United States that impacts quality of life, presenting with urgency, frequency, or nocturia, with or without incontinence. There is little research on the quality, actionability, and understandability of information on social media regarding OAB.

What We Found

Eighty-eight percent of TikTok videos and 60% of YouTube videos on OAB had a PEMAT (Patient Education Materials Assessment Tool) actionability score below 75%, suggesting poor ability for consumers to use information presented in videos. Both TikTok and YouTube videos scored poorly on PEMAT understandability, defined as consumers with diverse backgrounds and health literacy being able to explain con-

Table. Total Views of TikTok and YouTube Videos With Poor Scores on Validated Instruments for Consumer Health Information

	TikTok, % (No. views)	YouTube, % (No. views)
Low PEMAT actionability (<75%)	87.5 (12,929)	60 (17,971)
Low PEMAT understandability (<75%)	38.2 (14,399)	26.7 (11,688)
Poor quality (DISCERN score <3)	97.8 (16,969)	65.3 (52,655)
High misinformation (score ≥3)	22.8 (34,751)	10.6 (34,777)
Commercial bias	9.6 (40,019)	18.6 (23,284)

Abbreviations: PEMAT, Patient Education Materials Assessment Tool.

cepts in materials. Further, 98% of TikTok videos and 65% of YouTube videos were poor quality based on the validated DISCERN criteria for quality of consumer health information. The Table shows the wide reach of poor scoring content about OAB.

Limitations

Our study was limited in that it only sampled a small portion of the wide array of content on TikTok and YouTube and did not include videos in other languages.

Interpretation for Patient Care

Social media is an important tool for patients to gather health information and to create community; however, much of the existing content about OAB falls short based on validated criteria for consumer health information. It is important that health care providers direct patients to evidence-based and understandable online content. ■

UPJ INSIGHT

Predictors of Financial Toxicity Among United States Prostate Cancer Survivors: A National Survey

Benjamin V. Stone, MD

*Brigham and Women's Hospital, Harvard Medical School, Boston, Massachusetts
Massachusetts General Hospital, Boston*

Muhieddine Labban, MD

Brigham and Women's Hospital, Harvard Medical School, Boston, Massachusetts

Dejan K. Filipas, MD

Brigham and Women's Hospital, Harvard Medical School, Boston, Massachusetts

Edoardo Beatrici, MD

Brigham and Women's Hospital, Harvard Medical School, Boston, Massachusetts

Nicola Frego, MD

Brigham and Women's Hospital, Harvard Medical School, Boston, Massachusetts

Zhiyu (Jason) Qian, MD

Brigham and Women's Hospital, Harvard Medical School, Boston, Massachusetts

Sandeep S. Voleti, MPH

Brigham and Women's Hospital, Harvard Medical School, Boston, Massachusetts

Stuart R. Lipsitz, ScD

Brigham and Women's Hospital, Harvard Medical School, Boston, Massachusetts

Adam S. Kibel, MD

Brigham and Women's Hospital, Boston, Massachusetts

Quoc-Dien Trinh, MD, MBA

Brigham and Women's Hospital, Harvard Medical School, Boston, Massachusetts

Alexander P. Cole, MD

Brigham and Women's Hospital, Harvard Medical School, Boston, Massachusetts

Stone BV, Labban M, Filipas DK, et al. Predictors of financial toxicity among United States prostate cancer survivors: results from a national survey. *Urol Pract.* 2023;10(5):459-466.

Study Need and Importance

Cancer survivorship in the United States is associated with high rates of financial toxicity. Prostate cancer is the most common noncu-

“Prostate cancer is the most common noncutaneous malignancy in American men, but the burden of financial toxicity in prostate cancer survivors has not been well characterized.”

taneous malignancy in American men, but the burden of financial toxicity in prostate cancer survivors has not been well characterized.

In this study we sought to assess the prevalence of subjective and objective measures of financial toxicity among prostate cancer survivors using the Medical Expenditure Panel Survey Cancer Self-administered Questionnaire. We also aimed to identify the predictors of financial toxicity in this cohort to identify those most at risk.

What We Found

Among 412 respondents with a history of prostate cancer, representative of 2,349,532 men after application of survey weights, there were high rates of both subjective and objective measures of financial toxicity (see Table). Of respondents, 13.5% reported catastrophic health care expenditures or out-of-pocket health care costs greater than 10% of annual income. On multivariable logistic regression analysis, significant predictors of catastrophic health care expenditures included

Table. Measures of Financial Toxicity in the Study Cohort

	No.	%
Worry about paying medical bills	400	15.9
Using food stamps	405	3.5
Unable to cover medical bills	400	6.6
Early retirement	205	12.0
Borrow money or in debt	398	2.5
Change in work due to cancer	412	15.3
Delay or forgo cancer treatment due to cost	72	6.8
Delay or forgo prescriptions due to cost	72	14.3
Delay or forgo specialist visit due to cost	72	13.7
Worry about income instability	240	13.0
Cut spending on basic needs (eg, food and clothing)	103	12.5
Catastrophic health expenditures	412	13.5

private insurance (OR 4.62, 95% CI 1.29-16.49) and medical comorbidities (OR 1.38, 95% CI 1.05-1.82), while high income was protective (>400% vs <100% federal poverty level, OR 0.06, 95% CI 0.02-0.19). Each year of older age was associated with decreased odds of subjective worry about medical bills. Only 12% of men reported their doctor discussed the costs of care in detail.

Limitations

Limitations of this study include the use of survey data, which are subject to recall bias. Additionally, robust clinical data on treatment modality and disease severity are not available in the Medical Expenditure Panel Survey data set.

Interpretation for Patient Care

This study demonstrates the rates of subjective and objective

“Of respondents, 13.5% reported catastrophic health care expenditures or out-of-pocket health care costs greater than 10% of annual income.”

measures of financial toxicity in a nationally representative prostate cancer population. These data may inform counseling to ensure patients are well informed about cost implications of prostate cancer and may guide interventions such as financial counseling for those most at risk, particularly young, privately insured men with low income. ■

UPJ INSIGHT

Trends in Prostate-specific Antigen Screening for US Men With a Family History of Prostate Cancer

Deepansh Dalela, MD*

Vattikuti Urology Institute, Henry Ford Hospital,
Detroit, Michigan

Taylor Malchow*

Wright State Boonshoft School of Medicine,
Dayton, Ohio

Mohit Butaney, MD

Vattikuti Urology Institute,
Henry Ford Hospital, Detroit, Michigan

Sami Majdalany, MD

Vattikuti Urology Institute, Henry Ford Hospital,
Detroit, Michigan

Nicholas J. Corsi, MD

Vattikuti Urology Institute, Henry Ford Hospital,
Detroit, Michigan
Wayne State University School of Medicine, Detroit,
Michigan

Ivan Rakic

Vattikuti Urology Institute, Henry Ford Hospital,
Detroit, Michigan
Wayne State University School of Medicine, Detroit,
Michigan

Akshay Sood, MD

Vattikuti Urology Institute, Henry Ford Hospital,
Detroit, Michigan

Craig Rogers, MD

Vattikuti Urology Institute, Henry Ford Hospital,
Detroit, Michigan

Firas Abdollah, MD

Vattikuti Urology Institute, Henry Ford Hospital,
Detroit, Michigan

* Co-first authors.

Dalela D, Malchow T, Butaney M, et al. Temporal and racial trends in prostate-specific antigen screening for US men with a family history of prostate cancer. *Urol Pract.* 2023;10(5): 484-492.

Study Need and Importance

Guidelines for PSA screening, especially for men with increased risk factors for prostate cancer (PCa) such as a family history of PCa, have been lacking and inconsistent. This study sought to analyze temporal trends in PSA screening for men with a family history of PCa and Black men with a family history of PCa and iden-

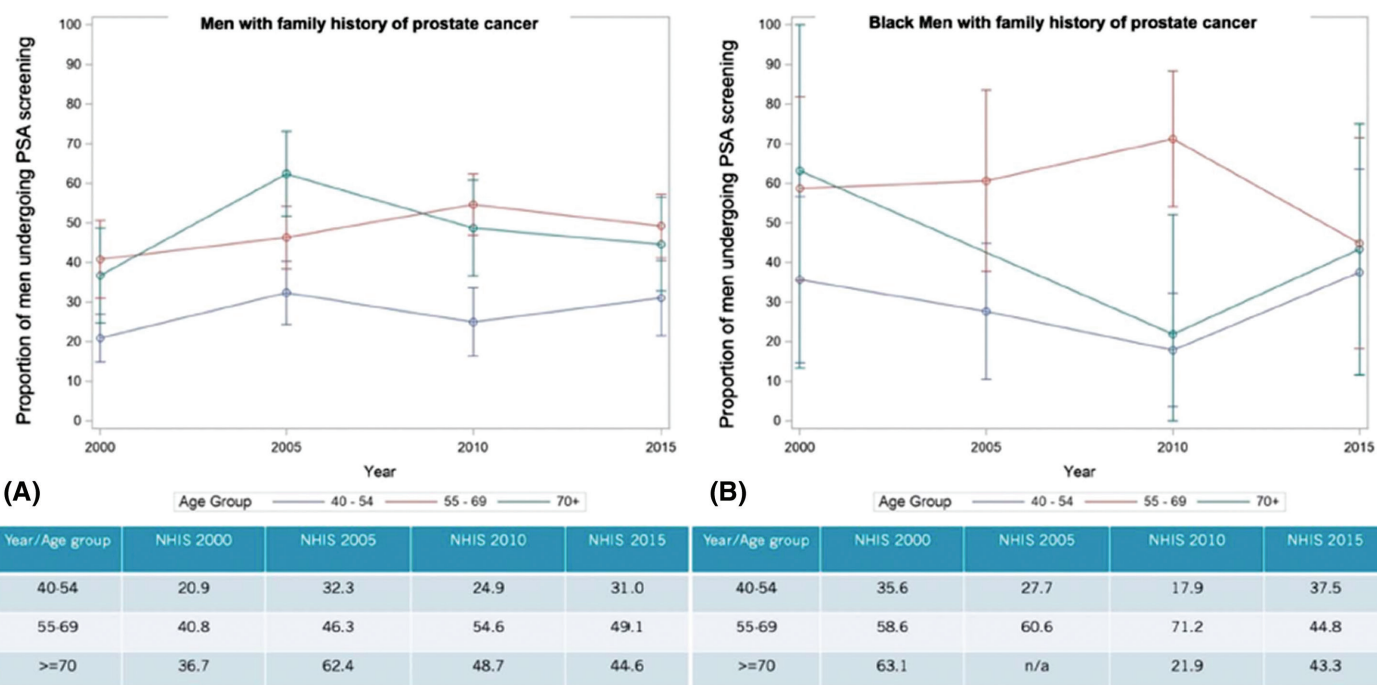


Figure. Temporal trends for PSA screenings for men with a family history of prostate cancer (A) and Black men with a family history of prostate cancer for National Health Interview Survey (NHIS; B) 2000-2018.

tify determinants associated with undergoing PSA screening.

What We Found

For men with a family history of PCa, PSA screening increased from 2000 to 2005 with stable rates for the following years (see Figure). Black men with family history of PCa showed no significant change in PSA screening rates during this longitudinal time period. Controlling for sociodemographics and access to health care provider, younger age (40-54) and later survey years (2013-2018) were associated with a lower likelihood of PSA screening overall and for Black men, but not for those with positive family history of PCa.

Limitations

Estimates of PSA screening are subject to recall and nonresponse bias since this study was based

“For men with a family history of PCa, PSA screening increased from 2000 to 2005 with stable rates for the following years (see Figure). Black men with family history of PCa showed no significant change in PSA screening rates during this longitudinal time period.”

on self-reported survey data. Unmeasured confounding variables

may have affected PSA screening rates due to the retrospective nature of the study. Misattribution biases could exist due to errors in self-reporting PSA screening. PSA screening recommendations through U.S. Preventive Services Task Force changed at the end of our study period in 2018, and our study only monitored about a half of a year of data after this change.

Interpretation for Patient Care

Our longitudinal study can provide clinicians with a better understanding of PSA screening trends in higher-risk patient populations and the social determinants that correlate with higher and lower screening rates. This comprehensive study that focuses on important PCa risk factors can help guide both provider's discussions with patients regarding their decision to undergo PSA screening and future recommendations. ■

UPJ INSIGHT

Medicare Part D Plan Navigation Could Reduce Out-of-Pocket Costs of Prostate Cancer Medications

Benjamin Pockros, MD, MBA
University of Michigan, Ann Arbor

Christina Shabet, BSE
University of Michigan Medical School, Ann Arbor

Kristian Stensland, MD, MPH, MS
University of Michigan, Ann Arbor

Lindsey Herrel, MD, MS
University of Michigan, Ann Arbor

Pockros B, Shabet C, Stensland K, Herrel L. Out-of-pocket costs for prostate cancer medications substantially vary by Medicare Part D plan: an online tool presents an opportunity to mitigate financial toxicity. *Urol Pract.* 2023;10(5):467-475.

Study Need and Importance

Oral androgen inhibitors for advanced prostate cancer, such as enzalutamide or abiraterone, are becoming increasingly prescribed by urologists for earlier stages of treat-

“The online Part D plan comparison tool could save patients thousands of dollars on OOP prescription spending for both abiraterone and enzalutamide.”

ment and for longer durations of time. Patients insured by Medicare can select Part D drug plans that vary in cost-sharing models and coverage, resulting in highly variable out-of-pocket (OOP) costs. We examine the range of OOP costs associated with Part D plans for patients prescribed enzalutamide or abiraterone, and highlight an opportunity for patients to potentially reduce the financial toxicity of treatment.

What We Found

Patients have multiple Part D plans available for comparison, ranging from 19 (New York, New York) to 28 (Phoenix, Arizona). OOP costs substantially vary between Part D plans for both abiraterone and enzalutamide. Among all 12 cities included in this study, the median range of OOP costs for abiraterone between the most and least expensive Part D plan was \$9,321 (see Figure). The median range of OOP costs for enzalutamide was \$1,839. The online Part D plan comparison tool could save patients thousands of dollars on OOP prescription spending for both abiraterone and enzalutamide.

Limitations

This analysis is limited by only 2 advanced prostate cancer medications, and findings only apply for patients insured by Medicare. The study was performed during the

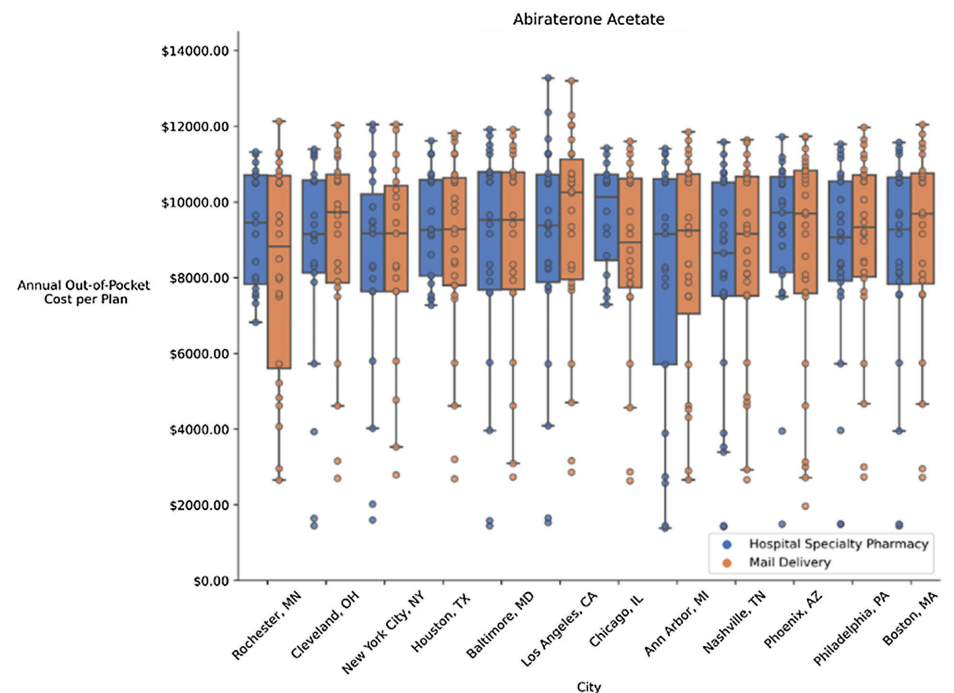


Figure. Out-of-pocket costs for abiraterone among a sample of Part D plans (range \$1,379 to \$13,274). Patients have the right to select the cheapest plan available (lowest dot on the graph) every year during open enrollment season.

“The online Medicare Part D Plan Finder is a simple and free tool to help mitigate financial toxicity of cancer care in the United States.”

2022 open enrollment season. Plan availability and OOP estimates may vary in upcoming years.

Interpretation for Patient Care

The online Medicare Part D Plan Finder is a simple and free tool to help mitigate financial toxicity of cancer care in the United States. Open enrollment season for plan selection occurs annually from October 15 to December 7. Physicians should reach out to their patient panel during these weeks, emphasize that OOP drug costs can substantially vary between Part D plans, disseminate the link to www.medicare.gov/plan-compare, and encourage their patients to compare costs before selecting a new drug plan. ■

Have You Read?

Craig Niederberger, MD, FACS

College of Medicine and College of Engineering,
University of Illinois at Chicago

Haas CR, Knoedler MA, Li S, et al. Pulse-modulated holmium:YAG laser vs the thulium fiber laser for renal and ureteral stones: a single-center prospective randomized clinical trial. *J Urol.* 2023;209(2):374-383.

Special thanks to Drs Marcin Zuberek and Daniel Garvey at the University of Illinois at Chicago.

Urologists always welcome new technologies, especially if they improve patient outcomes and efficiency in the operating room. Laser technology revolutionized stone disease treatment. How does the new thulium laser compare to the holmium:YAG laser? In this randomized controlled trial of a bit over 100 patients, the authors sought to answer this question.

The primary outcome studied was the ureteroscopic time required to adequately fragment stones to 1 mm or less. Secondary outcomes included stone-free rate, complications, laser performance, patient quality of life, and laser efficiency. Ureteroscope time was not significantly different between the 2 laser modalities, with the pulse-modulated holmium:YAG laser and the thulium laser fiber both requiring close to a mean of 20 minutes. There were no significant differences in stone-free rate and complications between the 2 lasers.

It would seem from this study that there is no clear clinical advantage of one laser technology over the other for ureteroscopic stone management. The pulse-modulated holmium:YAG laser has been the gold standard for lithotripsy, while the thulium fiber laser offers certain technical advances such as

“As medicine further tailors treatments to patients, mini-PCNL promises an increasing role in renal stone treatment.”

higher absorption coefficient and smaller fiber diameter. Ultimately, the choice of which laser technology to employ is up to the urologist and their health care system. What this study supports is either choice will lead to equivalent excellent results.

Dutta R, Mithal P, Klein I, Patel M, Gutierrez-Aceves J. Outcomes and costs following mini-percutaneous nephrolithotomy or flexible ureteroscopy for 1-2-cm renal stones: data from a prospective, randomized clinical trial. *J Urol.* 2023;209(6):1151-1158.

Special thanks to Drs Jason Huang and Mahmoud Mima at the University of Illinois at Chicago.

Flexible ureteroscopy is the standard treatment for renal stones less than 2 cm, but is this the best treatment for midsized stones 1 to 2 cm in size? For these stones, flexible ureteroscopy can be extremely time-consuming and with lower stone-free rates. These authors conducted a prospective randomized trial comparing the efficacy and costs of flexible ureteroscopy and mini-percutaneous nephrolithotomy (mini-PCNL), a percutaneous approach employing a 16F access sheath half the diameter of a traditional nephrolithotomy access sheath.

This group evaluated the surgical and cost outcomes of just over 100 patients, half undergoing mini-PCNL and the other half ureteroscopy. The results were very persuasive. Mini-PCNL offered a significantly higher stone-free rate than ureteroscopy for midsized renal stones. This benefit came with no increase in surgical time or complications. As for economics from a urological perspective, while the direct cost of the surgery was higher, mini-PCNL resulted in higher revenue.

As medicine further tailors treatments to patients, mini-PCNL promises an increasing role in renal stone treatment. At this time, flexible ureteroscopy remains the standard for small to midsized renal stones, and adding mini-PCNL to our armamentarium increases our ability to adapt and offer patient-centered stone management.

Lenfant L, Pinar U, Roupret M, Mozer P, Chartier-Kastler E, Seisen T. Role of antimuscarinics combined with α -blockers in the management of urinary storage symptoms in patients with benign prostatic hyperplasia: an updated systematic review and meta-analysis. *J Urol.* 2023;209(2):314-324.

Special thanks to Drs Ahmad Hefnawy and Omer Acar at the University of Illinois at Chicago.

Antimuscarinics are frequently used in conjunction with α blockers in the management of urinary storage symptoms associated with benign prostate enlargement and related obstruction. This meta-analysis challenged this well-established practice and aimed to reevaluate the safety and efficacy of combining antimuscarinics with

“It would seem from this study that there is no clear clinical advantage of one laser technology over the other for ureteroscopic stone management.”

α blockers in patients with benign prostate enlargement.

The inclusion criteria were strict: out of almost 500 randomized controlled trials only 12 studies met them. Over 4,500 patients were included and divided into 2 well-balanced groups of a blocker with placebo vs α blocker with antimuscarinics. There was a small but statistically significant reduction in frequency, but there was no statistically significant improvement in urgency with the addition of antimuscarinics. As for safety, the risks of acute urinary retention, dry mouth, and constipation were significantly higher in patients who received antimuscarinics as adjunctive therapy, which translated into worse compliance.

Considering the marginal symptomatic improvement at the expense of side effects leading to discontinuation, we should revisit the idea of combining antimuscarinics with α blockers in the management of urinary storage symptoms from benign prostate enlargement and counsel our patients accordingly. How to identify the subset of patients who will benefit from adding antimuscarinic agents remains an open question. ■