Urologic Health in Women Across the Lifespan

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Society for Women's Health Research

Goal: Understand the current state of urologic health across the lifespan and obtain expert roundtable recommendations

Background

SWHR routinely convenes interdisciplinary scientific roundtables to address key issues in women's health. Established investigators are invited for 1.5 days for an in-depth discussion to explore knowledge gaps and novel research opportunities in diseases that predominately or disproportionately affect women. On October 29-30, 2014, SWHR hosted a roundtable on "Understanding urologic health in women across the lifespan." The goal was to facilitate the understanding of the current state of urologic health across a woman's lifespan by identifying key knowledge gaps and addressing research opportunities with a focus on preventing urologic diseases in women.

Objectives

- Discuss emerging urologic issues specific to women throughout the various key stages of the lifespan;
- Examine state-of-the-science and identify critical research gaps in the area of epidemiology, basic research, clinical presentation and therapeutic strategies;
- Examine pharmacological and non-pharmacological therapeutic strategies for conditions that affect women throughout the lifespan;
- Address impact of urologic diseases and related co-morbid conditions on quality of life in women.

- ***53%*** of women will have at least one urinary tract infection (UTI) during their lifetime.[1]
- ***25-44%*** women experience recurrent UTI annually.[2]
- ***24%*** of women (ages of 18-44) and ***50%*** (ages 45-60) have urinary incontinence (UI).[1,3]
- Direct care for UI in 2000 cost ***$452.8 million*** for women compared to 10.3 million in men.[4]

1. Office of Women's Health (OWH): http://www.womenshealth.gov/publications/our-publications/the-healthy-woman/urologic_and_kidney_health.pdf.
2. Foxman B: Epidemiology of urinary tract infections: incidence, morbidity, and economic costs. *Dis Mon.* 2003;49:53-70.
3. Kaiser Family Foundation, 2008
4. AUA Foundation: National Urology Research Agenda (NURA) - A roadmap for priorities in urologic disease research. 2010.

Method

This interdisciplinary meeting included 16 researchers from the following disciplines: urology, urogynecology, pediatrics, gerontology, neurology, biomechanical engineering, regenerative medicine, reconstructive surgery, obstetrics and gynecology, microbiology, immunology, cellular and molecular biology and epidemiology. Participants were assigned to one or two topics. Underlined participant was chosen as the group leader.

A. Epidemiology and Prevention	B. Clinical presentation
• Cara Tannenbaum, MD, MSc., University of Montreal • Roger Dmochowski, MD, Vanderbilt University • Heidi Harvie, MBA, MD, MSc., University of Pennsylvania • Leslee Subak, MD, Univ. of California, San Francisco	• Stephanie Kelb, MD, Northwestern University • Clare Close, MD, Close Pediatric Urology • George Kuchel, MD, University of Connecticut • Elizabeth Mueller, MD, Loyola University • Candace Parker-Autry, MD, Wake Forest Baptist
C. Biological basis	**D. Current and novel therapeutic strategies**
• Toby Chai, MD, Yale School of Medicine • Margo Damaser, PhD, Cleveland Clinic • Michael DiSanto, PhD, Rowan University • George Kuchel, MD, University of Connecticut • Alan Wolfe, PhD, Loyola University	• Matthew Fraser, PhD, Duke University • Cindy Amundsen, MD, Duke University • James Ashton-Miller, PhD, University of Michigan • Margo Damaser, PhD, Cleveland Clinic

Expert roundtable recommendations

A. Epidemiology and Prevention	B. Clinical presentation
• No more epidemiology research for incontinence; • Determine increased healthcare seeking behavior for women with incontinence; • Develop implementation research to extend reach to incontinence patients; • Optimize individual adherence to lifestyle changes and prevention strategies for incontinence; • Develop prevention research for urinary tract infection and chronic pelvic pain.	• Identify preclinical disease markers and early risk factors in women; • Determine the impact of early intervention, prevention or education on symptoms; • Determine the role of estrogen in the urothelium as a protective mechanism against carcinoma and bladder cancer; • Develop diagnostic tools and therapies to target dysbiotic microbiome during distinct stages in woman's life; • Establish a bio bank for genital urinary tissues, blood and urine, especially from the elderly; • Need for increased collaborations between basic scientists and clinicians.
C. Biological basis	**D. Current and novel therapeutic strategies**
• Understand risk and protective factors around urinary microbiome; • Determine biological mechanisms for pelvic pain, incontinence, urge incontinence, overactive bladder and pelvic floor disorders; • Determine sex differences in urethral muscle contribution towards urethral closure; • Identify predictive biomarkers to distinguish between various types of bladder dysfunction; • Develop better, complete, chronic animal models to capture risk factors and understand incontinence.	• Explore novel (cell therapy and regenerative medicine), rational (based on phenotypes) and combination therapeutic approaches; • Determine drug mechanisms for current and future therapies; • Determine differential drug response to same drugs by different patients; • Develop targeted therapy based on phenotyping and disease etiology; • Develop effective synergistic therapies and optimize parameters for existing therapies such as neuromodulation.

Conclusions

- The identification of multiple knowledge gaps and subsequent discussions at the roundtable led to the development of research recommendations.
- Understanding basic biological mechanisms will only allow for better diagnosis, treatment and eventually prevention of these disorders in women.
- An established program such as the SWHR's interdisciplinary networks may be the platform needed to address some of these identified research needs in women's urologic health.

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SWHR is a national non-profit organization based in Washington D.C. and founded in 1990. SWHR is widely recognized as the thought leader in research on biological differences in disease and is dedicated to transforming women's health through science, advocacy and education.