W17: Current State of the Evaluation and Management of Lower Urinary Symptoms in Women
Workshop Chair: Roger Dmochowski, United States
03 September 2019 16:00 - 17:30

Start | End | Topic | Speakers
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16:00 | 16:05 | Introduction and overview of workshop | Roger Dmochowski
16:05 | 16:15 | Epidemiology and population studies about lower urinary symptoms in women | Ömer Bayrak
16:15 | 16:25 | Chronic infections & inflammation of lower urinary tract | William Reynolds
16:25 | 16:35 | The underactive bladder in women: diagnosis and treatment | Ömer Bayrak
16:35 | 16:50 | Recent advances in bladder pain syndrome | Rahmi Onur
16:50 | 17:05 | Nonsurgical treatments for lower urinary symptoms in women | Angie Rantell
17:05 | 17:25 | Surgical treatments for lower urinary symptoms in women | Roger Dmochowski
17:25 | 17:30 | Discussion | Roger Dmochowski, Rahmi Onur, William Reynolds, Ömer Bayrak

Aims of Workshop
Lower urinary tract symptoms in women include various complaints related to urine storage, voiding and symptoms related to pelvic floor dysfunction. The workshop will provide theoretical and practical knowledge of all outpatient / office procedures available for women in the management of infection-inflammation of lower urinary tract, underactive bladder and bladder pain syndrome. In addition, this workshop is intended to serve as a valuable resource for clinicians with an interest in the nonsurgical and surgical treatment options for lower urinary tract symptoms in women.

Learning Objectives
to define the pathologies causing lower urinary tract symptoms in women

Target Audience
Urology /urogynecology / urology and gynecology nursing

Advanced/Basic
Basic

Suggested Learning before Workshop Attendance
Lower urinary tract symptoms (LUTS) contain a variety of bothersome storage (frequency, urgency, urgency, incontinence), voiding (poor flow, intermittency, hesitancy, straining, dysuria, overflow incontinence), and postmicturition (terminal dribble, postvoid dribble, sense of incomplete emptying) symptoms. Many adult women experience LUTS, and the prevalence of these symptoms increase with age. The prevalence of at least one LUTS for women was reported as, at least ‘sometimes’: 76.3%, at least ‘often’: 52.5%. Storage symptoms associated with overactive bladder were more prevalent than men. The prevalence of all LUTS increased with advancing age in men, but only certain LUTS [urgency, urgency with fear of leaking, poor flow, urge urinary incontinence (UUI), nocturnal enuresis] increased with age in women. In addition, healthy population of young nulligravid women the prevalence of LUTS and urinary incontinence (UI) was high, but with relatively low bother LUTS. Incontinence was also highly prevalent in women. Approximately 25% of women under age 40 report stress urinary incontinence (SUI) during physical activity. After the first pregnancy, the odds of having SUI increased by 2.7-fold; up to a fourfold increased risk with 5 or more pregnancies. The risk of developing severe SUI and UUI was equivalent regardless of the mode of birth. Age at first delivery was associated with risk of UI. Women who delivered their first baby after the age of 30 had an increased risk of severe UI later in life, and required more surgical interventions than those who delivered when they were younger. More than 200 million people worldwide, and over 15% of women aged 40 years or older were estimated to be suffering from UI. Of working women between ages 18–60, 37% reported urine leakage during the previous 30 days. More than 88% of these women reported a negative impact on quality of life. 50% of women with LUTS and UI experience sexual dysfunction, which is a high rate compared with generally healthy women. Aging and comorbid conditions, particularly diabetes and neurological disease, are associated with increased risk of LUTS. But only 26% of individuals with LUTS seek healthcare. Women had higher odds of treatment seeking with more frequent UI, more bothersome symptoms, worsening of incontinence, and longer duration of urinary incontinence. Women who saw physicians regularly, and who had preventive healthcare were also more likely to seek care. Race or ethnicity, socioeconomic measures, and education were not significantly related to seeking treatment for UI.

Chronic infections & inflammation of lower urinary tract
W. Stuart Reynolds, MD MPH

Lower urinary tract infections affect a large proportion of women around the world and represent a significant clinical burden to the patient and to the healthcare system. Urinary tract infections can be broadly categorized into uncomplicated and complicated, with different management strategies for each. Recent clinical guidelines, such as AUA guidelines on Recurrent Uncomplicated Urinary Tract Infections in Women (2019), can help shed light on care of these patients who can be difficult to manage effectively. Management strategies for both complicated and uncomplicated UTIs will be reviewed in this workshop presentation. In addition, approach and management strategies for asymptomatic bacteriuria, which represents an additional clinical challenge for providers, will be reviewed.

The underactive bladder in women: diagnosis and treatment
Omer Bayrack

Underactive bladder (UAB) is characterized by a slow urinary stream, hesitancy and straining to void, with or without a feeling of incomplete bladder emptying sometimes with storage symptoms. This differs from detrusor underactivity (DU) which is a diagnosis based on urodynamic study (UDS). DU is defined by International Continence Society, as a bladder contraction of reduced strength and/or duration resulting in prolonged or incomplete emptying of the bladder, and acontractile detrusor is specified when there is no contraction. UAB and DU certainly coexist in many patients. In patients referred for UDS assessment, DU is diagnosed in 12% to 45% of females, more common in elderly nursing home residents. Neurological disorders, aging, diabetes, pharmacotherapy and failure of sphincteric relaxation have been emphasized as the major etiological factors causing UAB. The lack of a standart test to diagnose and quantify DU contributes to our currently limited knowledge, in female patients. A slow take-off with low maximum flow rate, prolonged voiding time, and multiple intervals can be observed on uroflowmeter. It is hard to make a decision for differential diagnosis of DU and bladder outlet obstruction with pressure flow study. All algorithms were developed for adult men, and have not been validated for women. Particular threshold values to define DU are unknown. But a few formulations have been proposed for DU in women.

The aims of the UAB treatment are listed as; to empty the bladder, to prevent possible damage to the upper urinary tract, and to reduce the risk of complications from the impaired bladder emptying (recurrent urinary tract infection, bladder stone formation, overflow incontinence, urinary retention). Unfortunately, treatment of UAB is still not satisfactory, and pharmacotherapy is insufficient. Currently, clean intermittent catheterization is the standard treatment in the management of the patients, who cannot have effective bladder emptying. Studies have shown that cholinergic agents contribute to detrusor contraction and facilitate bladder emptying, but it is not recommended to use in practice because of frequent and possible
serious side effects. Alpha blockers (tamsulosin, silodosin, naftopidil) are stated as effective agents in female patients with voiding difficulty and subnormal maximal voiding values. Among the surgical methods, sacral neuromodulation has been approved by the Food and Drug Administration in the management of nonobstructive urinary retention, and it is currently performed in experienced centers as an effective and reliable method.

**Advances in Bladder Pain Syndrome**

Rahmi Onur, MD

Marmara University Faculty of Medicine, Department of Urology, Istanbul Turkey

Bladder pain syndrome (BPS), Interstitial cystitis (IC) or painful bladder syndrome (PBS) are terms often used interchangeably to define a cluster of symptoms. International Continence Society defines “BPS (including IC)” as “persistent or recurrent chronic pelvic pain, pressure or discomfort perceived to be related to the urinary bladder accompanied by at least one other urinary symptom such as an urgent need to void or urinary frequency. Diagnosed in the absence of any identifiable pathology which could explain these symptoms1.

Required symptoms for diagnosis of BPS/IC in all guidelines are pain, pressure, discomfort, frequency, urgency and nocturia. A detailed history, examination, questionnaire(s), psychological examination, urine analysis, postvoid residual urine measurement and appropriate tests are used. Urodynamics is not routinely recommended. However, cystoscopy under general anesthesia is preferred in most of the guidelines2.

First-line treatments include patient education, stress management, dietary modifications, analgesics and pelvic floor rehabilitation. Different oral medications used include amitriptyline, antibiotics, azathioprine, cimetidine, cortisone, cyclosporine, doxycycline, gabapentin, methotrexate, nifedipine, vitamin E. However, level of evidence for use of these drugs are low except for sodium pentosanpolysulfate and hydroxyzine3. There are new agents such as IPD-1151T (Suplatast Tosilate), quercetin, montelukast, misoprostol. IPD-1151T is an immunoregulator that selectively suppresses IgE production and helper T cells that produce IL-4 and 5. Quercetin, a bioflavonoid acts through anti-inflammatory actions. Montelukast is used for mast cell stabilization. There are anecdotal studies regarding positive responses with misoprostol, an oral prostaglandin analogue and cyclosporine3,4. AQX-1125 is a new pharmaceutical class of compounds that activate SHIP1 protein, a modulator of phoshoinositide signaling5.

Currently used intravesical therapies include heparin, hyaluronic acid, chondroitin sulphate, pentosan polysulfate, capsaicin/resiniferotoxin, DMSO and several coctails6. Lidocaine can be used combined with heparin/sodium bicarbonate and continous lidocaine releasing intravesical irrigation using elastomer polymers was also used in a small number of patients4. Intradetrusor Botulinum toxin injection of 100-U of has been shown to effectively reduce bladder pain. Recently, botulinum toxin is combined with hydrodistention to provide better efficacy. There are novel studies examining the efficacy and feasibility of new delivery methods into the bladder such as hydrogel-based slow release (TC-3 Gel) botulinum toxin and new intravesical therapies such as liposomes, liposomal-mediated botulinum toxin injections and liposomal tacrolimus4.

In a recent meta-analysis it was shown that sacral neuromodulation is a safe and acceptable treatment option for chronic pelvic pain in selected patients. The role in treatment was supported by level 2b studies with grade B recommendation. While accepted as promising treatments, ICS suggests both botulinum toxin and sacral neuromodulation to be considered as investigational3. Finally, surgery is rarely performed and has been commonly used only for refractory BPS/IC patients3,6. Cytolysis, peripheral or sympathetic denervation is not indicated in BPS/IC. Cystoplasty with supratrigonal resection or subtrigonal cystectomy with cystoplasty may provide some benefit but grade of recommendation is weak3. Simple urinary diversion with formation of an ileal conduit or continent diversion can be used the last option in highly selected patients.

References:

Non-Surgical treatment of lower urinary tract symptom
Angie Rantell, Lead Nurse Urogynaecology

Non-surgical treatment should be offered as first line treatment for all women with lower urinary tract symptoms (LUTS). This is recommended by the National Institute for Health and Care Excellence (NICE 2019) and the International Consultation on Incontinence (ICI 2017) and should be embraced by all health care practitioners.

Non-surgical management principally involves lifestyle interventions, physical therapies, scheduled voiding regimes, complementary therapies, anti-incontinence devices, supportive pessaries, containment products and catheters. Lifestyle interventions includes advice on weight loss, reduction of physical forces, cessation of smoking, reducing caffeine, fluid management and relieving constipation. Conservative management has a rightful place in the treatment of women with UI, but has limitations as patients can become disillusioned with expected outcomes. Patient education, regular assessment and good communication are therefore essential to ensure patient compliance, cooperation and motivation which are paramount to the successful outcome of treatment.

Alongside these conservative measures, pharmacological management of LUTS is necessary for some women. There are many different drugs available for the treatment and management of LUTS. This session aims to provide an overview of not only the conservative therapies previously mentioned but also the current licensed pharmacological therapies available to treat symptoms of frequency, urgency and urge incontinence. It will also examine the use of medication in the treatment of women with stress urinary incontinence, nocturnal enuresis, nocturia, Genitourinary syndrome of the menopause and bladder pain.

Non-surgical management of LUTS may be provided by a variety of different health care professionals including staff in primary care along with specialist nurse, physiotherapists, urotherapists and medics in specialist services.

By the end of this talk, the listener should have an understanding of the wide variety of non-surgical management options available in the treatment of LUTS and the relevant evidence for this. Recommendations for practice will be made in line with national and international guidelines.

Surgical treatments for lower urinary symptoms in women
Roger Dmochowski MD, MMHC, FACS

Once the decision has been made for surgical intervention, a critical assessment of patient desires and expectations in light of co-morbidities and other factors should be performed. Realistic expectations must be established with an emphasis on symptomatic improvement balanced with intervention related risks.

Interventions discussed should include urethral bulking and surgical therapies inclusive of tapes (if allowed by national standards, colposuspensions, and biologic slings. A clear delineation of the trade-offs between the interventions should be made and documented.
Conservative Management of Female Lower Urinary Tract Symptoms

Angie Rantell
Lead Nurse / Nurse Cystoscopist
Department of Urogynaecology
King’s College Hospital, London

Aims of Treatment

• Improve Quality of Life
• Individualise management depending upon presenting symptoms and life-style

General Aims

Relieve symptoms
Maintain or restore bladder/bowel function
Maintain (or improve) sexual function

Assessment

• Symptom assessment
• Impact on quality of life
• Desire for treatment
• Past med / surg / obs / neuro history
• Use of diaries and questionnaires
• Assessment of dexterity and environment
• Assessment of skin condition
• Abdominal, vaginal, rectal examination
• Review of concurrent medications

Conservative Management

• Medication review eg diuretics
• Lifestyle interventions
• Pelvic Floor muscle training +/- biofeedback
• Bowel advice
• Behavioural therapy
• Improve access to toilets
• Drug therapy
• Pessaries
• Good vaginal health advice
• Non therapeutic Interventions
  − Pads
  − Catheters
  − Anti-incontinence devices

Pelvic Floor Muscle Training-
Does it work?

Level I evidence to support PFMT for women with stress urinary incontinence (SUI)
• Expected cure rates 73%
• Cure/improvement in 97%

Cochrane review of PFMT

PFMT v no treatment, sham or inactive controls for UI in women
• PFMT more likely to report they were cured or improved (8 x for SUI, 5 x for any UI)
• PFMT reported better continence specific QOL
• PFMT experienced fewer incontinence episodes per day and less leakage
• Increased satisfaction with treatment
• Less likely to seek further help
  Dumoulin and Hay-Smith, 2018
Pelvic Floor Muscle Training (PFMT)

- PFMT should be included in first-line conservative management programmes for women with stress, urge or mixed urinary incontinence
  Dumoulin and Hay-Smith, 2018

- A supervised PFMT muscle training should be offered as a 1st line Rx for women with SUI & MUI for at least 3 months
  NICE, 2019

- Should be offered to women in first pregnancy as preventative strategy for UI
  Woodley et al 2017

PFMT

- Should include a minimum of 8 contractions x 3 daily for three months
  NICE, 2019

- Knack Dumoulin, 2010

- > 2 per month more effective Imamura, 2010

Very important to be:
- Supervised
- Minimum 3 months
- Attend regular appointments
- Individualised
- Progressive
- Functional

Adjunct therapies to aid PFMT

Biofeedback
- Evidence that PFMT plus BF is effective Rx for SUI
  Imamura 2010

- May provide benefit in addition to PFMT in women with UI
  Herderschee et al 2011

- Women reported a higher perception of cure/ improvement and higher satisfaction with treatment
  Herderschee et al 2011

- Should not be used as a routine part of PFMT
  NICE 2019

Adjunct therapies

- Electrical Stimulation (NMES)
  Neumann et al, 2006

- Systematic review- No benefit in adding NMES to a PFMT protocol

- May be beneficial in a select patient group

- Should not be used routinely
  NICE, 2019

INDICATIONS FOR ADJUNCT THERAPIES

Digital vaginal examination should be performed

To be considered for those who are
- Unable to locate the right muscles
- Unable to contract the PFM
- Too weak to effectively strengthen the PFM
- Too weak to sustain a PFM contraction
- Aid motivation and adherence

To enhance own effort
Temporary measure
More time consuming and more expensive
What else does physio cover?
- Breathing exercises
- Core stability
- Posture
- Flexibility
- Pelvic floor relaxation
- Pressure point therapy
- Acupuncture
- Functional assessments
- Vulvodynia
- Sexual dysfunction

Exercise
- 51.9% UI in athletes/dancers
- A study in female college students: trampolining 80%, gymnastics 67%, ballet 43%, tennis 50%, aerobics 40% reported incontinence
- Appears to be a dose dependent effect

Bladder Retraining
AIMS OF BLADDER RETRAINING
- Increase bladder capacity
- Reduce frequency of toilet visits
- Lifestyle changes
- Learn urge suppression techniques

LIFESTYLE CHANGES
- Fluid intake of 25mls per kg of body weight per 24 hours
- Avoid fluids for 2 hours before bed

Lifestyle Intervention
Fluid intake, Caffeine, Tea, Coke, Wt reduction
- Significant reduction in U, F, and N with 25% reduction in fluid intake. Increasing fluid intake worsened F
- High caffeine intake is an independent risk factor for DO
- The relationship may be dose dependent
- Tea drinking (but not coffee) epidemiologically associated with all forms of incontinence
- Diet Coke and caffeine-free Diet Coke cause greater U and F than carbonated water or Classic Coke
- Weight loss decreases incontinence in moderately and morbidly obese women (Grade A)
Drugs For UI

- Oestogens
- Antimuscarinics
- Antidepressants
- Vasopressin analogues

Combination Therapy

- Antimuscarinic therapy in addition to:
  - β Agonist
  - α Antagonist
  - Anti-diuretic
  - SSRI
  - Local oestrogens

Absorbent Containment Products

- Containment pads should not be used as a toilet
- A toileting aid to promote bladder and bowel continence
- Body worn or underpad products
- Disposable / reusable

Absorbent Containment Products, Aids and Devices

- Do not offer absorbent containment products, hand-held urinals or toileting aids to treat urinary incontinence. Offer them only:
  - as a coping strategy pending definitive treatment
  - as an adjunct to ongoing therapy
  - for long-term management of urinary incontinence only after treatment options have been explored

NICE 2019
Anti-incontinence devices
Intra-urethral plugs and intra-vaginal devices

• Inserted / removed at patient's discretion
• Not suitable if poor manual dexterity
• Should not be advised other than for occasional use to prevent leakage, e.g. during physical exercise  
  NICE, 2019

Pessaries

Indications

• Pessaries are generally recommended as a conservative form of treatment for stress incontinence in women who are:
  – Awaiting surgery
  – Pregnant or want to have more children in the future
  – Unfit for surgery
  – Choose to manage their SUI with a pessary
• Half of those successfully fitted continue use for at least 6 months  
  Donnelly et al 2004

Is a pessary suitable for all?

Reasons why pessaries aren’t suitable

• Falls out
  – gaping introitus
  – degree of prolapse
  – shape of vagina
• Too uncomfortable
  – scar tissue
  – “bands”
  – Cramping
• Don’t like / won’t wear

Alternatives to pessaries

CONTINENCE AIDS
Patient Counselling

- Coping mechanisms
- CBT
- Allay fears
- Challenge misconceptions
- Promote awareness of symptoms and treatment
- Maximising compliance

Health Promotion

- Lifestyle advice
- Weight loss
- Smoking cessation
- Encouraging people to talk about problems
- User support groups
- Dispelling myths

Patient Education

- Basic anatomy and physiology
- How symptoms relate to their condition
- How the treatment works / onset of action / side effects
- Long term prognosis / disease progression
- Other factors that may impact upon condition
- Expert patients

Conclusions

- Conservative measures cover a broad range of treatments and care may be provided by many different health care professionals
- Conservative management should be offered to all women as first line management
- If conservative measures fail patients should be referred on for specialist assessment and management