Evaluation of females with urinary incontinence

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IMPACT ON HEALTH

1. Quality of life
2. Sexual dysfunction
3. Morbidity
4. Increased caregiver burden
Risk factors of urinary incontinence

1. Age: Both the prevalence and severity
   - Under age 35: 3 percent
   - 55 to 64 years: 7 percent
   - Over age 60: 38 to 70 percent

   However, studies controlling for other comorbid conditions suggest that age alone may not be an independent risk factor for incontinence.
Risk factors of urinary incontinence

2-Obesity: Obesity is a strong risk factor for incontinence (particularly stress urinary).

3-Mode of delivery: Vaginal delivery are at higher risk for stress urinary incontinence.
Risk factors of urinary incontinence

- 4-Parity: Pop increased after first birth 4-fold
  - second birth 8-fold
  - third birth 9-fold
  - forth birth 10-fold

The relationship between urgency incontinence/overactive bladder and mode of delivery is less certain
Risk factors of urinary incontinence

5-Family history: Twin studies attribute a 35 to 55 percent genetic contribution to urgency incontinence/overactive bladder but only 1.5 percent for stress incontinence.

6-Ethnicity/race: Some studies report higher prevalence in non-Hispanic white women compared with African American women.
Risk factors of urinary incontinence

7-High impact exercise – Stress urinary incontinence has been associated with participation in high-impact activities, including jumping and running
Other contributing factors/conditions

• **Genitourinary syndrome of menopause/vaginal atrophy** – In postmenopausal women, low estrogen levels result in atrophy of the superficial and intermediate layers of the urethral mucosal epithelium.

• Atrophy results in urethritis, diminished urethral mucosal seal, loss of compliance, and possible irritation, all of which can contribute to incontinence
Other contributing factors/conditions

• **Urinary tract infection** – Lower urinary tract infections (UTIs) can present with symptoms of overactive bladder that exacerbate urinary incontinence symptoms.

• Not all women with a UTI will experience pain or hematuria. Women with UTI may have more incontinence not only during the episode but also immediately following the UTI.
Other contributing factors/conditions

• Systemic causes:
  1- diabetes (neuropathy and obesity)
  2- Neurologic disorders: (overflow incontinence)
    – Spinal cord disorders
    – Stroke, Parkinson disease, and normal pressure hydrocephalus
  3- Cancer – Less common systemic causes of urinary incontinence include bladder cancer or invasive cervical cancer
Other contributing factors/conditions

- **Medications** (Corticosteroid therapy)
- Alcohol and caffeine intake
- Smoking $>$ 20 (antiestrogenic)
- Constipation/stool impaction
- Ehlers-Danlos syndrome
- More subtle connective tissue weakness, such as joint hypermobility
Classification

1. Stress urinary incontinence
2. Urgency urinary incontinence
3. Overflow incontinence
4. Functional incontinence
Stress incontinence

1-Urethral hypermobility: Insufficient urethral support may be related to loss of connective tissue and/or muscular strength due to chronic pressure (i.e., high-impact activity, chronic cough, or obesity) or trauma due to childbirth, particularly vaginal deliveries.

2-Intrinsic sphincteric deficiency:
   A: Loss of intrinsic urethral mucosal and muscular tone that normally keeps the urethra closed.
   B: Neuromuscular damage and can be seen in women who have had multiple pelvic or incontinence surgeries.
Stress incontinence

- ISD can occur in the presence or absence of urethral hypermobility and typically results in severe urinary leakage even with minimal increases in abdominal pressure.
- Treatment is aimed at improving urethral blood flow with vaginal estrogen and increasing urethral coaptation with pelvic muscle exercise or surgery.
1. **History:**

- Stress urinary incontinence is associated with urine loss with increases in intraabdominal pressure, such as occurs with laughing, coughing, or sneezing.

- Urine volume lost may be small or large.

There is no urge to urinate prior to the leakage.
EVALUATION

- Asking about symptoms such as:
  - Fever, dysuria, pelvic pain, and hematuria
  - Changes in bowel function (eg, constipation)
  - Medications — Some medications can contribute to urinary incontinence
  - Alcohol and caffeine
2-Voiding diaries

• Normal voiding frequency is less than eight times a day and once at night, with total volumes of less than 1800 mL per 24 hours
  - Frequency and volume
  - Identify the maximum bladder capacity
  - Time interval that the woman can reasonably wait between voids, a measure used to guide bladder training
  - Fluid intake
3-Impact on quality of life

- Clinicians should identify those symptoms that are most bothersome to the patient as this can help guide treatment
Physical examination of women with POP

- Examination components — includes the following components:
  - Visual inspection
  - Speculum examination
  - Bimanual pelvic examination
  - Rectovaginal examination
  - Neuromuscular examination
Physical examination (SUI)

• Bladder stress test; ESST; cough sign; occult sui
• Evaluate for pelvic floor muscle integrity, vaginal atrophy, pelvic masses, and advanced pelvic organ prolapse beyond the hymen
• Muscle tone
• A detailed neurologic examination is not necessary unless patients present with sudden onset of incontinence (especially urgency symptoms) or new onset of neurologic symptoms (evaluation of lower-extremity strength, reflexes, and perineal sensation)
• Post-void residue
Anterior compartment defects

- Proximal level
- Mid vaginal
- Distal
Indication of Post-void residue

• When diagnosis is uncertain
• Initial therapy is ineffective
• In patients where there is concern for urinary retention and/or overflow incontinence.
• Neurologic disease
• Recurrent urinary tract infections
• history concerning for detrusor underactivity or bladder outlet obstruction
Indication of Post-void residue

- History of urinary retention
- Severe constipation
- Pelvic organ prolapse beyond the hymen
- New-onset or recurrent incontinence after surgery for incontinence
- Diabetes mellitus with peripheral neuropathy
- Medications that suppress detrusor contractility or increase sphincter tone
PVR

- We use a PVR of >150 mL or >1/3 total volume as a cutpoint for further evaluation of voiding dysfunction.
Paraclinic tests

- A urinalysis should be performed for all patients, and urine culture performed if a UTI or hematuria is suggested on screening.
- FBS
- Urodynamic study
Indication of UDS

- Uncertain diagnosis
- Failure of response to initial therapy
- Surgical intervention
- Hematuria
- Incontinence with coexisting condition
  - Recurrent symptomatic urinary tract infections
  - Incomplete bladder emptying
  - Piror incontinence or radical pelvic surgery or radiation
  - Severe or symptomatic pelvic organ prolapse
  - Neurologic condition
  - Voiding dysfunction or irritative voiding symptoms
Specialist referral

- Associated abdominal or pelvic pain in the absence of UTI
- Culture-proven recurrent UTIs (three or more per year or two in six months)
- Gross or microscopic hematuria with risk factors for malignancy in the absence of
- Lifelong incontinence or suspected vesicovaginal fistula or urethral diverticula on vaginal examination
- Other abnormal physical examination findings
Specialist referral

- New neurologic symptoms in addition to incontinence
- Uncertainty in diagnosis
- History of pelvic reconstructive surgery or pelvic irradiation
- Persistently elevated PVR volume, after treatment of possible causes (eg, medications, stool impaction)
- Suspected overflow incontinence, particularly in the setting of underlying conditions (eg, neurologic conditions, diabetes)
- Chronic urinary catheterization or difficulty passing a catheter