LOWER URINARY TRACT SYMPTOMS IN MEN

AGS Geriatrics Evaluation and Management Tools (Geriatrics E&M Tools) support clinicians and systems that are caring for older adults with common geriatric conditions.

From the AMERICAN GERIATRICS SOCIETY

Geriatrics Evaluation & Management Tools

EPIDEMIOLOGY

Lower urinary tract symptoms (LUTS) develop in over half of men >60 years oldand often represent a condition outside of the urinary tract.

SCREENING

If a man complains of new or worsening urinary incontinence or LUTS, then proceed with a thorough evaluation.

Bladder Storage Symptoms	Voiding Symptoms
▪ Frequency ▪ Urgency ▪ Nocturia	▪ Hesitancy ▪ Intermittency ▪ Weak stream ▪ Incomplete emptying

DIFFERENTIAL DIAGNOSIS OF LUTS

- Benign outlet or prostatic obstruction
- Genitourinary tract malignancies advanced and invading bladder trigone
- Kidney or bladder stones
- Medication adverse effects
- Neurologic disorders
- Polyuria (can be due to excess fluid intake, CHF, diuretics, etc)
- Poorly controlled diabetes mellitus
- Sexually transmitted infections
- Urinary tract infection (UTI)

HISTORY

- Obtain the American Urological Association Symptom Index (AUA SI) score.

PAST MEDICAL HISTORY

- Inquire about neurologic conditions that can affect the urologic system.
- Inquire about prior urologic, neurosurgical, orthopedic, or general surgery procedures that can affect innervation of the bladder or urethral sphincter.
- Inquire about endocrine conditions that increase urination

MEDICATIONS

- Review medications (including over-the-counter) for potential contributors to LUTS (diuretics, anticholinergics, antihistamines, nasal decongestants, opioids).

PHYSICAL EXAMINATION

- Abdominal examination
- Rectal examination documenting sphincter tone and prostate size, tenderness, and nodularity
- Manual dexterity, mobility, mentation, and examination

DIAGNOSTIC TESTS

- Obtain a urinalysis (UA) to evaluate for UTI, hematuria, and glycosuria.
  - Obtain a urine culture if UA demonstrates pyuria or hematuria.
- Routine measurement of serum creatinine levels is not indicated in initial evaluation of men with LUTS secondary to benign prostatic hyperplasia (BPH).
- Additional optional tests can be considered when the diagnosis is uncertain or invasive treatment is planned.
  - Postvoid residual urine volume (often done by office or bedside bladder scan)
  - Simple uroflow or pressure flow study
  - Cystoscopy

NONPHARMACOLOGIC MANAGEMENT

- Teach urgency control strategy: don't rush to bathroom, stay still and repeatedly and quickly contract pelvic floor muscles (like holding in flatus); once urgency under control, then go to bathroom.
- For men with dementia: prompted voiding by caregiver every 2–3 hours while awake (try for 3 days, continue if helps).
- For nocturia: shift fluids from 2–3 hours before bedtime and during the night to earlier in daytime.
- Reduce fluid intake only if excessive (>2 L/day unless perspire excessively).
- Trial of reducing or eliminating caffeine.
- Quit smoking.
- Encourage weight loss if obese.
- Sit to void to empty better.
- For nocturnal enuresis, decrease oversedation at bedtime, including alcohol.
- Consider sleep apnea if snoring history or nocturnal polyuria (24-hour voided volumes are helpful).
- Discontinue or change timing of diuretics (eg, use after work or social activities but several hours before bedtime).
- Consider trial of reducing potential bladder irritants: artificial sweeteners, citrus juices, carbonated beverages (symptom diaries can help patient's/caregivers identify potential irritants).

PHARMACOLOGIC MANAGEMENT

Provide information on benefits and harms of treatment to men with moderate to severe symptoms (AUA SI score ≥8) or who are bothered enough to consider therapy.

Interventions	Rationale	Possible Indications
α-Adrenergic antagonists ■ Long-acting, selective for α1: terazosin, doxazosin ■ Long-acting, selective for α1a: tamsulosin, silodosin, alfuzosin ■ Prazosin is not recommended for BPH but is important to identify because additional α-blockers should not be added in those taking this drug.	Relaxation of smooth muscle in hyperplastic prostate tissue, prostate capsule, and bladder neck decreases resistance to urinary flow.	■ The effectiveness of the four α-adrenergic antagonists appears to be similar. ■ Adverse effects: dizziness, mild asthenia, headaches, postural hypotension (reduced with careful dose titration, not present with selective α1a subtypes), rhinitis, abnormal ejaculation, intraoperative floppy iris syndrome with cataract surgery
5α-Reductase inhibitors ■ Finasteride ■ Dutasteride	Reduced tissue levels of dihydrotestosterone result in reduced size of prostate gland.	■ Indicated (alone or in combination with α-adrenergic antagonist) for patients with LUTS associated with demonstrable prostatic enlargement based on volume measurement, and/or enlargement on DRE ■ Improvement may not be evident for up to 6 months (particularly with finasteride).
Muscarinic receptor antagonists ■ Darifenacin ■ Fesoterodine ■ Oxybutynin ■ Solifenacin ■ Tolterodine ■ Trospium	Muscarinic receptors present on bladder urothelial cells and in peripheral and central nervous systems (eg, parasympathetic nerves innervating detrusor muscle). Safe to use with BPH	■ Symptoms of overactive bladder in absence of obstruction; may reduce urgency incontinence, frequency, and urgency-related voiding, and improve overall perception of bladder problems. ■ Not all antimuscarinics have been tested in older men. ■ Adverse effects: dry mouth, constipation, confusion, and might rarely precipitate urinary retention
Beta-3 agonist ■ Mirabegron	β-3 adrenoceptors are predominant β receptors expressed in smooth muscle cells of detrusor; their stimulation is thought to induce detrusor relaxation.	■ Symptoms of overactive bladder, including micturition frequency, urgency, and urgency incontinence ■ Adverse effects: hypertension, UTI, headache, nasopharyngitis, tachycardia
PDE5i ■ Tadalafil	Reduce smooth muscle tone of detrusor, prostate, and urethra; may alter reflex pathways in spinal cord and neurotransmission in urethra, prostate, or bladder; could reduce chronic inflammation in prostate and bladder.	■ LUTS in men with or without erectile dysfunction ■ Adverse effects: contraindicated in patients using nitrates, nicorandil, doxazosin, or terazosin; contraindicated with unstable angina, myocardial infarction (<3 mo), stroke (<6 mo), NYHA stage >2, hypotension, poorly controlled blood pressure, hepatic or renal insufficiency, or anterior ischemic optic neuropathy

SURGICAL MANAGEMENT

Provide information on benefits and harms of treatment to men with moderate to severe symptoms (AUA SI score ≥8) who are bothered enough to consider therapy.

Interventions	Rationale	Possible Indications
■ Transurethral incision, vaporization, resection etc. of the prostate ■ Open prostatectomy	■ Removal or expansion of periurethral prostate tissue reduces obstruction to urinary flow.	■ Patient preference ■ Dissatisfaction with conservative treatment ■ Refractory urinary retention ■ Renal dysfunction ■ Recurrent UTI induced by BPH

REFERRAL

Indications for referral to urologist for evaluation according to AUA guidelines:

- Abnormal digital rectal examination with decreased tone or suspicious mass
- Hematuria
- Recurrent infections
- Palpable bladder
- History or risk of urethral stricture
- Neurologic disease raising the likelihood of a primary bladder disorder
- Abnormal PSA levels (see *Choosing Wisely*)
- Persistent bothersome LUTS despite optimizing nonpharmacologic and pharmacologic management

CHOOSING WISELY

- Do not order creatinine or upper-tract imaging for patients with BPH.
- Do not routinely screen for prostate cancer using a PSA test or digital rectal examination. Offer PSA screening for detecting prostate cancer only after engaging in shared decision making.