URINARY INCONTINENCE

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

BACKGROUND

- Urinary incontinence (UI) affects 30% of community-dwelling older women, 15% of community-dwelling older men, and >50% of nursing-home residents.
- Although common, UI is **not** a normal part of aging and should be evaluated.

SCREENING

All older adults should have documented initial screening for UI.

- If screening is positive, then document targeted history and physical and offer treatment.
- If screening is negative, then rescreen every year. Consider rescreening sooner if worsening functional decline or increase in risk factors.

CLASSIFICATION OF UI

	STRESS	URGE	BLADDER OUTLET OBSTRUCTION (OVERFLOW)	DETRUSOR UNDERACTIVITY (OVERFLOW)
HISTORY	▪ Increased abdominal pressure (coughing, sneezing, lifting, exercising)	▪ Urgency ▪ Frequency ▪ Nocturia	▪ High post-void residual (PVR) ▪ Frequency ▪ Nocturia ▪ Weak urinary stream ▪ Hesitancy ▪ Straining ▪ Frequent small-volume leakage	▪ High PVR ▪ Frequency ▪ Nocturia ▪ Weak urinary stream ▪ Hesitancy ▪ Frequent small-volume leakage
ETIOLOGY*	▪ Impaired pelvic support ▪ Failure of urethral closure (trauma, anti-incontinence surgery, urethral atrophy, prostate procedures, atrophic vaginitis)	▪ Detrusor over activity: age related, idiopathic, upper motor neuron lesion, bladder irritation ▪ Detrusor hyperactivity with impaired contractility (urge incontinence + detrusor underactivity)	▪ Benign prostatic hyperplasia (BPH) ▪ Urethral stricture ▪ Anti-incontinence surgery ▪ Severe pelvic organ prolapse	▪ Peripheral neuropathy (diabetes mellitus, B_{12} deficiency, alcoholism) ▪ Damage to spinal detrusor afferent nerves (disc herniation, spinal stenosis, tumor, degenerative neurologic disease) ▪ Fibrosis of detrusor muscle

*Overlapping etiologies are most common (mixed = stress + urge)

HISTORY OF PRESENT ILLNESS

GENERAL	RED FLAG SYMPTOMS	LOWER TRACT	OTHER
▪ Onset ▪ Frequency ▪ Volume ▪ Timing ▪ Precipitants (caffeine, diuretics, cough, etc)	▪ Sudden onset ▪ Pelvic pain ▪ Hematuria ▪ Dysuria ▪ Severe straining ▪ Inability to void	▪ Frequency ▪ Nocturia ▪ Slow stream ▪ Hesitancy ▪ Urgency ▪ Dribbling ▪ Interrupted voiding	▪ Medications ▪ Congestive heart failure ▪ Diabetes ▪ Constipation ▪ Obesity

PAST MEDICAL HISTORY

- Neurologic: cerebrovascular disease, delirium, dementia, multiple sclerosis, normal-pressure hydrocephalus, Parkinson disease, spinal stenosis
- Urologic/gynecologic: surgeries, trauma

SOCIAL HISTORY

Caffeine intake, social support, home environment

MEDICATIONS

Angiotensin-converting enzyme (ACE) inhibitors, anticholinergics, antidepressants, antipsychotics, NSAIDS, sedative hypnotics, thiazolidinediones, calcium channel blockers, loop diuretics, opioids, α-adrenergic agonists, α-adrenergic blockers, GABA-ergics

PHYSICAL EXAMINATION

- Functional status
- Cognitive evaluation (delirium screening if indicated)
- Abdominal exam (bladder distention)
- Cardiovascular (edema, heart failure)
- Neurologic (signs of Parkinson disease, neuropathy)
- Rectal exam (mass, tone, sensation, prostate nodules, fecal load)
- Vaginal exam (mucosa, prolapse, volitional squeeze)
- Musculoskeletal (mobility and dexterity)

FURTHER TESTING

- Post-void residual (PVR) should be considered in all men and women using medications known to impair bladder emptying, with history of prior urinary retention, diabetes, recurrent UTIs, severe constipation, marked pelvic organ prolapse, or who have had prior surgery for UI.
- Bladder diary (http://kidney.niddk.nih.gov/kudiseases/pubs/diary/index.htm)
- American Urological Association BPH Symptom index score
- Cystoscopy and urine cytology if there is pelvic pain or hematuria that does not clear after treatment of UTI
- Urodynamic testing
  - Unclear etiology of UI
  - When empiric treatment has failed and the patient would consider invasive or surgical therapy
- Depression screening

LABORATORY TESTING

- Urinalysis (at initial evaluation or if increased symptoms)
  - Note any hematuria or glucosuria.
  - Do not treat asymptomatic bacteriuria with antibiotics (particularly in established UI).
- Serum creatinine
  - Within 72 hours for PVR >300 mL
  - Within 3 months for PVR between 200 and 300 mL

NONPHARMACOLOGIC MANAGEMENT

- Classification and documentation of type and likely etiology of UI before treatment
- Treatment options should be discussed with new or symptomatic UI within 3 months of diagnosis.
- Minimize contributing factors identified in history of present illness, physical exam, and laboratory testing.
- Behavioral therapy management in a stepped approach
  - Prompted voiding is primary approach for patients with cognitive impairment. Try for 3 days and continue only if improves quality of life for patient and caregiver. Also useful for cognitively intact patients with voiding frequency more than q2hr.
  - Taper caffeine intake. Increase fluids if inadequate; decrease if excessive.
  - Pelvic floor muscle exercises and bladder control strategies for stress, urge, and mixed UI.
    - Squeeze as you sneeze, cough, or lift.
    - Stay still and contract muscles to reduce urgency before going to the bathroom ("freeze and squeeze").
    - Contract muscles as you stand up from bed or chair—prevents sudden urine loss.
    - Contract muscles after voiding to prevent post-void dribbling.
- Vaginal pessary can be useful for stress incontinence.
- Urinary catheter at least 3–4 weeks for urinary retention; eliminate contributing factors, consider starting α-blocker, then voiding trial (fill to sensation to void and remove catheter). Replace catheter and refer to Urology or Urogynecology if fails.
- Absorbent products (pads, pull-ups, underpads) and skin care products—no-rinse cleansers and ointment or creams. *Candida* infections common in obese and diabetic patients and require specific antifungal creams or systemic treatments.

PHARMACOLOGIC MANAGEMENT (FOR URGE OR MIXED UI)

Try behavioral therapies first and add medications only if needed. Combination of behavioral therapy with medication is significantly better for improving quality of life.

MEDICATION	DOSAGE	ADVERSE EVENTS (METABOLISM)
Alfuzosin[a]	10 mg/d at bedtime	(L) CYP3A4
Darifenacin[b]	7.5–15 mg/d	Gastric retention Not recommended in severe liver impairment (L, CYP3A4, CYP2D6)
Doxazosin[a]	0.5–8 mg/d at bedtime	(L) CYP3A4, CYP2D6, CYPC19
Fesoterodine[b]	4–8 mg/d	Maximum dose 4 mg if CrCl <30 mL/min (L, CYP3A4, CYP2D6)
Mirabegron[c]	25–50 mg/d	Hypertension Not to be used in combination with antimuscarinics Increases levels of digoxin and CYP2D6 substrates (eg, metoprolol,venlafexine, desipramine, dextromethorphan)
Oxybutynin[b]	2.5–5 mg q6–12h 5–20 mg/d (XL formulation) 3% gel topically q24h 3.9 mg/24h (apply patch 2×/wk)	Dry mouth and constipation less with XL formulation than immediate release Gel: rotate sites to reduce skin irritation Patch: adverse events similar to those of placebo; may irritate skin (L)
Silodosin[a]	8 mg/d at bedtime	CrCl 30–50 mL/min, give 4 mg/day; avoid if CrCl <30 mL/min Retrograde ejaculation (L) CYP3A4
Solifenacin[b]	10–20 mg/d	Same as darifenacin Maximum dose 5 mg if CrCl <30 mL/min or moderate liver impairment (L, CYP3A4)
Tamsulosin[a]	0.4–0.8 mg/d at bedtime	Give 30 minutes after same meal every day. Less orthostasis (L) CYP3A4, CYP2D6
Terazosin[a]	1–10 mg/d at bedtime	(L)
Tolterodine[b]	1–2 mg q12h 2–4 mg/d (LA formulation)	Least constipating of oral agents CYP450 interactions (L, CYP3A4, CYP2D6)
Trospium[b]	20 mg q12–24h (on empty stomach) 60 mg/d (XR formulation)	Dyspepsia, headache Caution in liver dysfunction Dose once daily at bedtime in patients ≥75 years old or with creatinine clearance (CrCl) <30 mL/min XR formulation not recommended if CrCl <30 mL/min (L, K)

[a] Alpha blockers: for treatment of lower urinary tract symptoms (benign prostatic hyperplasia) in men. Adverse events include orthostatic hypotension, dizziness, fatigue.
[b] Muscarinic receptor antagonists: adverse events include dry mouth, eyes, and skin; GERD; and constipation. Confusion or worsened cognition may occur in patients with mild cognitive impairment or dementia.
[c] Beta-3 agonist
Abbreviations: L = metabolized in liver; K = metabolized in kidney

FOLLOW-UP

- Response to treatment should be documented within 3 months. Behavioral treatments are followed up at least monthly for 2 or 3 visits.
- For patients who do not improve adequately, surgical management can be considered.

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