

# URINARY INCONTINENCE

AGS Geriatric 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) 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 annual follow-up to determine whether UI is bothersome to patient or caregiver
  - If screening is negative, then rescreen every 2 years

### CLASSIFICATION OF UI

	STRESS	URGE	OVERFLOW (BLADDER OUTLET OBSTRUCTION)	OVERFLOW (DETRUSOR UNDER-ACTIVITY)
<b>HISTORY</b>	<ul style="list-style-type: none"> <li>Increased abdominal pressure (coughing, sneezing, lifting)</li> <li>Leakage can occur while sitting or standing</li> </ul>	<ul style="list-style-type: none"> <li>Frequency</li> <li>Nocturia</li> <li>Dribbling</li> <li>Weak urinary stream</li> <li>Hesitancy</li> <li>Straining</li> <li>Urgency</li> </ul>	<ul style="list-style-type: none"> <li>Frequency</li> <li>Nocturia</li> <li>Dribbling</li> <li>Weak urinary stream</li> <li>Hesitancy</li> <li>Straining</li> <li>Small-volume leakage</li> <li>High PVR</li> </ul>	<ul style="list-style-type: none"> <li>Frequency</li> <li>Nocturia</li> <li>Dribbling</li> <li>Weak urinary stream</li> <li>Hesitancy</li> <li>Small-volume leakage</li> <li>High-PVR</li> </ul>
<b>ETIOLOGY*</b>	<ul style="list-style-type: none"> <li>Impaired pelvic support</li> <li>Failure of urethral closure (trauma, anti-incontinence surgery, urethral atrophy, status post-prostatectomy, atrophic vaginitis)</li> </ul>	<ul style="list-style-type: none"> <li>Detrusor overactivity: age-related, idiopathic, nervous system lesion, bladder irritation</li> <li>Detrusor hyperactivity with impaired contractility</li> </ul>	<ul style="list-style-type: none"> <li>Benign prostatic hypertrophy (BPH)</li> <li>Prostate cancer</li> <li>Urethral stricture</li> <li>Anti-incontinence surgery</li> <li>Cystocele</li> <li>Rectocele</li> <li>Vaginal prolapse</li> </ul>	<ul style="list-style-type: none"> <li>Fibrosis of detrusor muscle</li> <li>Peripheral neuropathy (diabetes mellitus, B12 deficiency, alcoholism)</li> <li>Damage to spinal detrusor afferent nerves (disc herniation, spinal stenosis, tumor, degenerative neurologic disease)</li> </ul>

\*Mixed etiologies are most common

### HPI

GENERAL	RED FLAG SYMPTOMS	LOWER TRACT	OTHER
<ul style="list-style-type: none"> <li>Onset</li> <li>Frequency</li> <li>Volume</li> <li>Timing</li> <li>Precipitants (caffeine, diuretics, cough, etc.)</li> </ul>	<ul style="list-style-type: none"> <li>Sudden onset</li> <li>Pelvic pain</li> <li>Hematuria</li> </ul>	<ul style="list-style-type: none"> <li>Frequency</li> <li>Nocturia</li> <li>Slow stream</li> <li>Hesitancy</li> <li>Dribbling</li> <li>Interrupted voiding</li> </ul>	<ul style="list-style-type: none"> <li>Medical conditions (see below)</li> <li>Medications</li> <li>"How does this affect your life?"</li> </ul>

### PAST MEDICAL HX/REVIEW OF SYSTEMS

- Cardiovascular: arteriovascular, heart failure, venous insufficiency
- Metabolic: diabetes mellitus, hypercalcemia, Vitamin B12 deficiency
- Neurologic: cerebrovascular disease, delirium, dementia, multiple sclerosis, normal-pressure hydrocephalus, Parkinson's, spinal stenosis
- Psychiatric: affective disorder, anxiety disorder, psychosis, alcoholism
- Pulmonary: chronic cough
- Gastrointestinal: constipation
- Urologic/gynecologic: surgeries, trauma
- Musculoskeletal: mobility impairment

### SOCIAL HX

Alcohol intake, social support, home environment

### MEDICATIONS

Angiotensin-converting enzyme (ACE) inhibitors, anticholinergics, antidepressants, antipsychotics, nonsteroidal anti-inflammatory drugs, sedative hypnotics, thiazolidinediones, calcium channel blockers, loop diuretics, opioids,  $\alpha$ -adrenergic agonists,  $\alpha$ -adrenergic blockers, GABA-ergics

## PHYSICAL EXAM

Document targeted physical examination:

- Functional status
- Mental status
- Abdominal exam (bladder distention)
- Cardiovascular (edema, heart failure)
- Neurologic (cognition, Babinski sign, evidence of neuropathy)
- Rectal exam (mass, tone, sensation, prostate nodules)
- Vaginal exam (mucosa, prolapse)

## FURTHER TESTING

- Postvoid residual (PVR)
- Bladder diary (<http://kidney.niddk.nih.gov/kudiseases/pubs/diary/index.htm>)
- American Urological Association BPH Symptom Index score (<http://www.adultpediatricuro.com/apuauass.pdf>)
- Cystoscopy and urine cytology if there is pelvic pain or hematuria that does not clear after treatment of urinary tract infection
- Urodynamic testing
  - Unclear etiology of UI
  - Preoperative for women undergoing surgery for stress UI

## LABS

- Urinalysis (at initial evaluation or if increased symptoms)
  - Note any hematuria or glucosuria
- Urine culture (if evidence of pyuria or hematuria)
- Serum creatinine:
  - Within 72 hours for PVR > 300 cc
  - Within 3 months for PVR between 200 and 300 cc

## NONPHARMACOLOGIC MANAGEMENT

- Classification and documentation of type and likely etiology of UI prior to treatment
- Treatment options should be discussed with new or symptomatic UI within 3 months of diagnosis
- Minimize contributing factors identified above
- Behavioral therapy:
  - Should be offered for cognitively intact, ambulatory adult with stress, urge, or mixed UI
  - Scheduled voiding ([www.healthinaging.org/public\\_education/tools/UItool10.pdf](http://www.healthinaging.org/public_education/tools/UItool10.pdf))
  - Pelvic muscle exercises (Kegel)
  - Biofeedback (referral to physical therapy or urology)
- Long-term (>1 month) urethral catheter for clinically significant urinary retention (document reason for use)

## PHARMACOLOGIC MANAGEMENT (FOR URGE OR MIXED UI)

MEDICATION	DOSAGE	ADVERSE EVENTS (METABOLISM)*
Oxybutynin	<ul style="list-style-type: none"><li>■ 2.5–5 mg q8–12h</li><li>■ 5–20 mg/d</li><li>■ 1 g gel topically q24h</li><li>■ 3.9 mg/d (apply patch 2x/wk)</li></ul>	<ul style="list-style-type: none"><li>■ Dry mouth and constipation less with XL formulation than immediate release</li><li>■ Gel: rotate sites to reduce skin irritation</li><li>■ Patch: adverse events similar to those of placebo; may irritate skin (L)</li></ul>
Tolterodine	<ul style="list-style-type: none"><li>■ 2 mg q12h</li><li>■ 4 mg/d</li></ul>	<ul style="list-style-type: none"><li>■ Least constipating of oral agents</li><li>■ P450 interactions (L, CYP3A4, CYP2D6)</li></ul>
Tropium	<ul style="list-style-type: none"><li>■ 20 mg q12–24h (on empty stomach)</li><li>■ 60 mg/d (XR formulation)</li></ul>	<ul style="list-style-type: none"><li>■ Dyspepsia, headache</li><li>■ Caution in liver dysfunction</li><li>■ Dose once daily at bedtime in patients ≥75 years old or with creatinine clearance (CrCl) &lt;30 mL/min</li><li>■ XR formulation not recommended if CrCl &lt;30 mL/min (L, K)</li></ul>
Darifenacin	7.5–15 mg/d	<ul style="list-style-type: none"><li>■ Gastric retention</li><li>■ Not recommended in severe liver impairment (L, CYP3A4, CYP2D6)</li></ul>
Solifenacin	5–10 mg/d	<ul style="list-style-type: none"><li>■ Same as darifenacin</li><li>■ Maximum dose 5 mg if CrCl &lt;30 mL/min or moderate liver impairment (L, CYP3A4)</li></ul>
Fesoterodine	4–8 mg/d	Maximum dose 4 mg if CrCl <30 mL/min (L, CYP3A4, CYP2D6)

\*Class adverse events: dry mouth, blurry vision, dry eyes, delirium/confusion, constipation  
Abbreviations: L = metabolized in liver; K = metabolized in kidney

## SURGICAL MANAGEMENT

- For stress incontinence:
- Retropubic suspension
  - Sling procedure
  - Periurethral bulking agent

## FOLLOW-UP

Response to treatment should be documented within 3 months