

Urinary Incontinence



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ESSENTIALS OF DIAGNOSIS

- *Involuntary loss of urine sufficient to be a problem.*
- *Urinary incontinence is a syndrome, not a single disease, resulting from medical conditions, medications, or lower urinary tract disease. It can herald morbid diseases (eg, cancer and neurological conditions).*

General Considerations

The majority of persons remain continent into advanced old age, contradicting the myth that urinary incontinence (UI) is a normal consequence of aging. However, UI increases in prevalence with age. In older women, the prevalence of UI is 15–30% in the community, 50% among the homebound, and $\geq 50\%$ in nursing home residents. In men, the prevalence is about one third that of women until age 85, when the ratio becomes 1:1.

Besides age, risk factors for UI in women are pregnancy and childbirth, pulmonary disease (because of associated cough), hysterectomy, obesity, other lower urinary tract (LUT) symptoms, neurological disorders (eg, delirium, stroke, Parkinson's disease, spinal cord injury), diabetes, and functional and cognitive impairment. In men, additional risk factors include the presence of other LUT symptoms and prostatectomy (risk greater with radical prostatectomy than with transurethral resection). Dementia is associated with UI, but the strongest correlate is impaired mobility, not cognition.

Complicating the recognition and treatment of UI is the failure of many health care providers to ask their patients about leakage and LUT symptoms, coupled with the fact that at least 50% of persons with UI never report it to a health care provider.

Fultz NH, Herzog AR: Epidemiology of urinary symptoms in the geriatric population. *Urol Clin North Am* 1996;23:1. [PMID: 8677528]

Thom D: Variation in estimates of urinary incontinence prevalence in the community: effects of differences in definition, population characteristics, and study type. *J Am Geriatr Soc* 1998;46:473. [PMID: 9560071]

Pathogenesis

Continence depends not only on LUT function but also on intact mobility, cognition, motivation, and manual dexterity. Even persons with a normally functioning LUT may experience UI if factors such as impaired mobility or cognitive impairment are present. Therefore, UI in most older persons is multifactorial and requires evaluation and treatment focused beyond the LUT alone.

A. CHIEF PRECIPITANTS

The chief precipitants of UI in older persons are age-associated changes in the LUT, comorbid disease, and medications.

1. Age-related LUT changes—These include increased prevalence of involuntary detrusor (bladder muscle) contractions; increased nocturnal diuresis; impaired detrusor contractility; decreased urine flow rate; urethral shortening and decreased elasticity in women; and prostate hyperplasia and hypertrophy in men. The relationship of UI to menopause and low estrogen levels is uncertain.

2. Comorbid diseases—These include neurological conditions (especially delirium, Parkinson's disease, stroke, spinal cord injury; rarely dementia alone [see prior discussion]), musculoskeletal conditions that impair mobility, disorders of volume (eg, congestive heart failure, pedal edema, polyuria), cancer (bladder and prostate), fecal incontinence and stool impaction, and depression. At least one third of older persons have multiple conditions.

3. Medications—See Table 24–1.

B. INCONTINENCE SUBTYPES

Incontinence can be divided into 4 major types:

1. Transient incontinence—This is caused by factors mainly outside the LUT (mnemonic DIAPPERS; Table 24–2).

2. Urge incontinence—This is coincident with or follows a strong, precipitant urge to void. A variation of

Table 24-1. Medications associated with incontinence.

Medication	Potential effects on continence
Anticholinergics	Impaired emptying, retention, delirium, fecal impaction
Antihistamines	
Antiarrhythmics	
Antispasmodics	
Antiparkinsonian	
Antidiarrheals	
Loop diuretics	Polyuria, frequency, urgency
Psychotropics	
Antidepressants	Anticholinergics effects, sedation
Antipsychotics	Anticholinergic effect, sedation, immobility, rigidity
Sedative-hypnotics	Sedation, delirium, immobility
Narcotic analgesics	Urinary retention, fecal impaction, sedation, delirium
Alpha-adrenergic agonists	Outlet obstruction (men)
Antihypertensive agents	
Alpha-adrenergic blockers	Stress leakage (women)
Calcium channel blockers	Impaired detrusor contractility, retention; pedal edema causing nocturnal diuresis (pyridine agents)
ACE inhibitors	Associated cough leading to stress leakage
Alcohol	Frequency, urgency, sedation, delirium, immobility
NSAIDs	Pedal edema causing nocturnal enuresis
Thiazolidinediones	Pedal edema causing nocturnal enuresis

ACE, angiotensin-converting enzyme; NSAIDs, nonsteroidal anti-inflammatory drugs.

Adapted from DeBeau C: Geriatric review syllabus, 5th edition. American Geriatrics Society, 2002.

Table 24-2. Mnemonic for causes of transient incontinence.

Delirium: acute confusional state.
 Infection: symptomatic UTI only, not asymptomatic bacteriuria; UI should have been of recent onset.
 Atrophic urethritis/vaginitis.
 Pharmaceuticals (see Table 24-1).
 Psychological: severe depression, psychosis, behavioral disorders.
 Excessive fluid output: high intake, diuretics (medications, caffeine, alcohol), peripheral edema, CHF, peripheral vascular disease, endocrine disorders (hypercalcemia, hyperglycemia, diabetes insipidus).
 Restricted mobility (intrinsic and extrinsic causes, many of which are treatable).
 Stool impaction (often with stool and bladder incontinence).

UTI, urinary tract infection; UI, urinary incontinence; CHF, congestive heart failure.

Adapted from Resnick NM: Geriatric incontinence. *Urol Clin North Am* 1996;23:55. Used with permission.

urge incontinence occurs in frail elderly persons who have detrusor hyperactivity with impaired contractility (DHIC), urge leakage with a high postvoid residual (without urethral obstruction).

3. Stress incontinence—This is coincident with maneuvers that increase intra-abdominal pressure (eg, coughing, running).

4. Overflow incontinence—This is impaired detrusor contractility, bladder outlet obstruction, or a combination of both.

In older women, symptoms of both urge and stress incontinence (mixed incontinence) are common. The term *overactive bladder* (OAB) denotes a syndrome that includes urgency, frequency, and nocturia with or without urge incontinence. In older persons, however, urgency and frequency may be caused by many factors besides the bladder. Thus, care should be taken not to attribute OAB symptoms initially to the LUT.

Ouslander JG et al: Overactive bladder: special considerations in the geriatric population. *Am J Manag Care* 2000;6(Suppl):S599. [PMID: 11183903]

Prevention

There are no evidenced-based approaches to UI prevention. Avoidance and treatment of risk factors and tran-

sient UI-associated factors may be helpful. Some experts recommend general strategies such as not forestalling voiding for long periods; avoiding diuretic beverages, artificial sweeteners, and high fluid intake; and controlling constipation.

Fonda D et al: Prevention of urinary incontinence in older people. *Br J Urol* 1998;82(Suppl 1):5. [PMID: not available]

Clinical Findings

A. SYMPTOMS & SIGNS

Table 24-3 lists common UI and LUT symptoms with their utility in differential diagnosis. Note that UI is not associated with pelvic pain. Other causes (especially neoplastic) should be sought.

B. CLINICAL EXAMINATION

Patients need a full physical examination because of the multifactorial nature of UI in older persons. The examination should include cardiovascular, abdominal, and neurological systems as well as assessment of mobility and cognition.

In all patients, perineal innervation should be evaluated by checking resting and volitional anal sphincter tone and perineal sensation. The integrity of sacral roots S2-S4 (the level of the sacral micturition center) are evaluated by the anal wink and bulbocavernosus reflexes. The anal wink is done by lightly scratching (eg, with a tongue depressor) about 1 in. away from the anus, which should contract ("wink"); the reflex should be tested on the right and left sides of the anus. The same "wink" should be seen with the bulbocavernosus reflex, using the stimulus of a light squeeze of either the clitoris or glans penis. False-negative responses can occur if the patient is not completely relaxed. If unsure whether the anus visibly contracts, check by inserting a finger in the rectum and palpating for the reflexes. Pelvic floor prolapse in women is neither sensitive nor specific for UI but may impact treatment. Prolapse is best evaluated using the lower blade of a speculum to first support the posterior wall and then the anterior vaginal wall while the patient strains. Signs of pelvic muscle laxity are forward movement of the urethra (urethral hypermobility), prolapse of the anterior vaginal wall into the vagina, introitus, or beyond (cystocele), and prolapse of posterior vaginal wall (rectocele).

Table 24-3. Symptoms & signs of UI.

Symptom/sign	Utility
Urgency: sudden strong urge to void with or without leakage	Strongly suggestive of detrusor overactivity (involuntary contraction). Some patients may preempt leakage by pelvic muscle contraction or conscious effort to decrease urge sensation.
Stress leakage coincident with maneuvers that increase intraabdominal pressure (eg, cough, sneeze, laugh, bending over, running)	Immediate leakage is sensitive sign for stress incontinence (ie, if absent, then one can be sure of its absence) but not specific. Leakage that occurs several seconds after stress maneuver and/or associated with strong urge likely a result of stress-induced detrusor overactivity.
Frequency (number of continent voids; abnormal is ≥ 8 voids/24 h)	Not specific; may result from increased fluid intake and diuretics (including caffeine) or increased diuresis (osmotic, cardiovascular, peripheral edema).
Nocturia: > 2 voids during usual sleeping hours	Not specific; may result from primary disorders of sleep (eg, obstructive sleep apnea, congestive failure, depression); nocturnal diuresis (eg, cardiovascular, pedal edema); or LUT dysfunction (detrusor overactivity, bladder outlet obstruction, decreased detrusor contractility; uncommon with stress UI).
Incomplete emptying: sense that bladder is still full after voiding	Not specific; may be associated with overflow UI, prostate disease, or medications that impair detrusor function. Frail elderly and those with peripheral neuropathy (especially diabetic) may have no sensation of impaired emptying.
Hesitancy: difficulty starting urine stream, often with need to strain	Not specific (same reasons as incomplete emptying).
Decreased force of urine stream	Not specific; although often assumed an indication of bladder outlet obstruction, also seen with impaired detrusor contractility.
Interruption of stream while voiding; urine flow stops abruptly then restarts when patient is trying to void completely	Sensitivity/specificity unknown, but suspicious for suprasacral spinal cord injury and multiple sclerosis.
Fecal incontinence	Coincident with UI when fecal impaction present or with sacral spinal cord injury.
Abrupt recent onset of UI	Sensitivity/specificity unknown but suspicious for cancer and neurological disease.

UI, urinary incontinence; LUT, lower urinary tract.

Bimanual exam should be done to check for pelvic masses. Rectal exam should check for masses and, in men, prostate nodules. Estimation of prostate size by digital exam is inexact, even among experienced clinicians.

C. LABORATORY FINDINGS

No specific laboratory findings are associated with UI. In general, renal function and urinalysis (for hematuria and, in diabetics, glycosuria) should be checked. If no recent data are available, one should also check for diabetes mellitus and vitamin B₁₂ deficiency. UI should not be attributed to pyuria and bacteriuria unless UI is very recent in onset or associated with fever, dysuria, elevated white blood cell count, or otherwise unexplained inanition. In most cases, the patient will have asymptomatic bacteriuria that does not require treatment.

D. SPECIAL TESTS

Women with stress symptoms should have a stress test. To increase sensitivity, this is best done when the bladder is full with the patient in the standing position. After checking that her perineum is relaxed, the patient should be asked to give a single, vigorous cough. Immediate leakage indicates stress incontinence; delayed leakage (often of large volume and difficult to stop) or leakage that occurs after several coughs may be stress-induced urge UI (a triggered detrusor contraction).

A postvoiding residual (PVR) urine test is performed using either catheterization or ultrasonography. However, obtaining a PVR is often not possible or is impractical in primary care settings. A PVR is strongly suggested for the frail elderly (because of possible DHIC); women with a large cystocele, which can obstruct the urethra; patients on medications that suppress detrusor contractility; patients with neurological disease (other than dementia); those with previous pelvic surgery or radiation; patients who have failed empiric therapy; and men with urge UI who will be treated with antimuscarinic agents.

Urodynamic studies are not necessary in the initial evaluation of most older persons. Urodynamics should be considered for women with stress UI who desire surgery; men with elevated PVR who desire prostate surgery; patients with complex neurological disease (especially Parkinson's disease and spinal cord injury); and persons who have failed empiric therapy. This testing includes evaluation of urine flow rate, cystometric pressure with filling and voiding, assessment of urethral function, and a pressure-flow study to evaluate obstruction and detrusor contractility. The best quality testing is done with medium-rate fluid filling of the bladder and simultaneous measure of abdominal pressure; carbon dioxide cystometry is neither sensitive nor specific.

E. IMAGING

Few patients require special imaging. A renal ultrasonogram is often performed for men with a large PVR, especially if they have impaired renal function. There is no consensus on the definition of large PVR. In the setting of renal insufficiency, even lower volumes (eg, 100–200 mL) should prompt further evaluation.

F. TESTS IN FRAIL ELDERLY

Evaluation of UI in frail, institutionalized elders should be tailored to their overall functional and cognitive status and goals of care. At the same time, one should recognize the potential for treatment benefit in persons with reversible precipitants (see Table 24–1) and in those with intact mobility despite impaired cognition. Although the Minimum Data Set includes a resident assessment protocol for UI that is completed by nursing staff, full evaluation of UI is the responsibility of the patient's clinician. Stress testing is less feasible and sensitive in this population; it should still be considered for women who are suitable candidates for surgical repair or who have pulmonary conditions or take medications that could precipitate stress leakage. Guidelines for evaluation of UI in these settings are available from the American Medical Directors Association and the National Association for Continence.

Fantl JA et al: Urinary incontinence in adults: acute and chronic management 1 (clinical practice guideline no. 2, AHCPR Publication No. 96-0682). Public Health Service, Agency for Health Care Policy and Research, 1996.

Differential Diagnosis

UI can be the presenting symptom of serious underlying diseases. However, patient care goals will determine the extent of evaluation. Important conditions to consider are abdominal and pelvic malignancies (especially in the setting of hematuria or pelvic pain and sudden onset of UI); bladder stones (with recurrent urinary tract infections [UTIs] and pelvic pain); spinal cord injuries (when the neurological exam is abnormal beyond known comorbidity); and fistulas (with vaginal leakage of urine or stool). Urinary retention with overflow incontinence should be suspected in men with underlying prostate disease and in women with a large cystocele, prior pelvic surgery, or irradiation. Although uncommon beyond the sixth decade, women with nonmalignant pelvic pain, dysuria, and frequent small voids may have interstitial cystitis and should be referred for evaluation.

Complications

Morbidity associated with UI includes falls (and attendant fractures), skin infections, and pressure ulcers.

Most significant is its impact on many domains of quality of life, including psychological distress (decreased self-esteem, worry about coping strategies), impaired social interactions (at work, church, leisure time, and with intimate relationships), and limitations of activities.

Naughton MJ, Wyman JF: Quality of life in geriatric patients with lower urinary tract dysfunction. *Am J Med Sci* 1997; 314: 219. [PMID: 9332259]

Treatment

The model for UI treatment mirrors that of many chronic diseases: a stepped approach over time, starting with treatment of precipitating or aggravating factors (eg, comorbid disease, immobility, medications) followed by lifestyle changes, behavioral therapies, medications, and finally surgery. Combining treatments, especially behavioral and medications, works better than either alone. Older persons should have treatment individualized to their overall care goals, most bothersome aspect of UI, and desired outcomes. Table 24-4 presents treatments and evidence-based efficacy. Many of these methods work for several types of UI.

A. LIFESTYLE CHANGES

Modification of the volume and types of fluid intake can have a large impact on leakage and frequency. Patients should aim for a 24-h output of ~2 L (adjusted for body size), avoid diuretic drinks with caffeine (coffee, tea, colas), and—if nocturia is a problem—curtail late afternoon and evening intake.

B. BEHAVIORAL TREATMENTS

Bladder retraining, prompted voiding, and habit training reduce urge and stress UI by keeping bladder volume low by regular voiding. Bladder retraining is performed with mobile, cognitively intact persons. In addition to timed voiding, patients are instructed to inhibit urgency by sitting or standing still, relaxing, and pelvic muscle contracting. They should continue to the bathroom when the urge has subsided. For frail patients, including those with impaired mobility prompted voiding (taking the patient to the toilet with praise reinforcement) and habit training (simply taking the patient to the toilet on a schedule) are effective. None have side effects. Prompted voiding and habit training depend on caregivers and, therefore, can have high personal and labor costs.

Pelvic muscle exercises (PME) strengthen the muscles that support the urethra and augment its closure. Often used for stress UI, PME may help with urge leakage as well. Similar to other muscle-strengthening regimens, PME are based on low repetitions of high-inten-

sity contractions held as long as possible. A starting regimen could be 3 sets of 10 contractions (with adequate relaxation between each contraction) repeated 2–3 times per week. As patients progress, they increase the intensity and duration of each contraction. Keys to PME success are correct identification of the target muscles and motivation to continue the program. Biofeedback and weighted vaginal cones (held in the vagina while the patient is upright) can be added to help patients learn PME.

Electrical stimulation is an alternative for patients who have difficulty localizing or contracting muscles for PME. A tubular sensor with electrodes is placed in the vagina or rectum, and a low electrical current causes rhythmic pelvic muscle contractions.

C. MEDICATIONS

Antimuscarinic agents that decrease parasympathetic activation of the detrusor are used for urge UI. The agents with well-established efficacy are oxybutynin and tolterodine. Both are available in immediate-release (IR) and extended-release (ER) formulations; doses are oxybutynin 2.5–5 mg 2–4 times daily (maximum, 20 mg/day), oxybutynin-ER 5–30 mg once daily, tolterodine 1–2 mg twice daily, and tolterodine-ER 2–4 mg once daily. ER formulations have similar efficacy but fewer side effects than IR formulations. A topical oxybutynin patch is now available as well (Oxytrol 3.9-mg patch every 3 days). Troublesome anticholinergic side effects in older persons are dry mouth (40% occurrence with IR forms, ≤ 20% with ER forms and a risk factor for caries), constipation, blurred vision, acute narrow-angle glaucoma, worsening of reflux, and confusion. Although the absolute number of patients studied are relatively small, oxybutynin-ER has better efficacy and tolterodine-ER better tolerability. Lack of response to one agent does not preclude response to the other.

Other agents used for treatment of urge incontinence are imipramine, hyocyanine, probanthine, and flavoxate; these have no established efficacy in older patients and are best avoided. The antidiuretic desmopressin is sometimes used to treat nocturia but must be used with caution in older persons because of the high risk of fluid retention, congestive failure, and hyponatremia.

Estrogen (oral and topical) previously was widely used in postmenopausal women with stress and urge UI. Oral estrogen with progesterone has been found to worsen UI; the data on topical estrogen are conflicting and scant (especially in older women). Estrogen is effective in reducing recurrent UTIs in women. Topical estrogen is available as a cream (Premarin), ring insert (Estring), and dissolving tablet (Vagifem).

Currently, there are no drugs available to treat stress incontinence. Duloxetine, a serotonin and norepineph-

Table 24-4. Evidence-based efficacy of urinary incontinence (UI) treatment.

Treatment	Target patient/condition	Efficacy (level of evidence)
Lifestyle changes, good bladder habits	All/all	True efficacy unknown yet should be universally tried. (5)
Behavioral		
Bladder retraining	W, M/urge, SUI	≥ 50% decrease in UI episodes in 75% of women; may be helpful for urge; insufficient evidence whether drug therapy better or useful as a supplement. (1)
Prompted voiding	W, M, F/urge, SUI	Mean reduction 0.8–1.8 UI episodes/day short term; no long-term data, increases self-initiated voiding. Suggestive evidence of short-term benefit from adding oxybutinin. (1)
Habit training	W, M, F/urge, SUI	≥ 25% decrease in UI episodes in 33% of pts. (1, 2) Compliance by staff problematic. (2)
PME	W, M/urge, SUI	Urge: role unclear; even with added bladder retraining, efficacy less than that for SUI. (2) For SUI (W): 56–95% decrease in UI episodes; effective for mixed UI; efficacy depends on program efficacy. (1) Most trials studied premenopausal women. Men with postprostatectomy UI: wide confidence intervals limit data; symptoms tend to improve over time, irrespective of management. (2)
PME and biofeedback	W, M, F/urge, SUI	Possible marginal improvement over PME alone. (2, 5) Significantly better than control and feasible in homebound. (1, but single study)
PME and vaginal cones	W/SUI	Data all from premenopausal women; 68–80% greatly improved-cured; better than no active treatment. No difference between cones and PME or electrostimulation.
Electrical stimulation	W/urge and SUI	50–94% improved cure, but few studies. (2, 3)
Medications		
Antimuscarinic agents		Versus placebo: cure/improvement; change in UI episodes/24 h and voids/24 h. Associated with dry mouth. (1) Little likelihood that outcomes modified by age, sex, diagnosis, or choice of drug.
Oxybutynin	W, M/urge	15–60% decreases in UI episodes over placebo; side effects common, especially dry mouth. (1)
Oxybutynin-ER	W, M/urge	Efficacy same as immediate release, with lower prevalence of side effects. (1)
Tolterodine	W, M/urge	12–18% decrease in UI episodes over placebo; side effects 20% less than other antimuscarinic agents at maximum dose. (1)
Tolterodine-ER	W, M/urge	Efficacy same as immediate release, with lower prevalence of side effects. (1)
Oral estrogens	W/urge, SUI	Conflicting evidence; both decreases and increases UI. (1, 2)
Topical estrogen	W/urge, SUI	
Desmopressin	Nocturia	Approximate decrease in frequency of 1 episode/night; optimal dose unclear; risk fluid retention and hyponatremia especially in elderly. (3, 4)
Other agents	See text	No proven efficacy (1, 4, depending on agent).
Surgery		
Open abdominal retropubic suspension (eg, Marshall-Marchetti-Krantz procedure)	W/SUI	Scant data in older and/or frail women.
Anterior vaginal repair (anterior colporrhaphy)	W/SUI	Less effective than open suspension (year 1 failure rate 29% vs 14%; long term 41% vs 17%), with more repeat operations (23% vs 2%).
Laparoscopic colposuspension		Poorer outcomes than open colposuspension; role in practice uncertain. (1, 2)

(continued)

Table 24-4. Evidence-based efficacy of urinary incontinence (UI) treatment. (*continued*)

Treatment	Target patient/condition	Efficacy (level of evidence)
Needle suspensions		More likely to fail than open suspension (26% failed vs. 14%), with more complications (48% vs. 30%), in women with primary UI. (1, 2) May be as effective as anterior vaginal repair (36% failed vs. 39%). Limited data comparing with suburethral slings.
Suburethral sling procedures (including TVT)	W/SUI	No data comparing slings with other surgical or conservative treatment. Short term-cure rates with TVT similar to open abdominal retropubic suspension; complications 9%. (2, 4) GORE-TEX slings may have higher complications than rectus fascia slings. (2)
Artificial sphincter	W, M/intrinsic sphincter deficiency	Cure 77%, improvement-cure 80%, complication rate 20%. (2, 4)
Periurethral bulking agents	W/intrinsic sphincter deficiency	Cure 50% (range, 8-100%), improvement-cure 67%. (2)
Devices and palliative measures		
Catheters	W, M overflow	High morbidity: bacteriuria universal by 30 days (1); urethral and meatal trauma; bladder stones, pyelonephritis. Suprapubic catheters may decrease urethral injury in men. (2) Clean intermittent catheterization option for willing and able patients. (5)
Pessaries	W prolapse	Option for women who do not want surgery; fitting may be difficult. (5)
Garments, pads	All	Patients should try variety of products for best efficacy (2); high absorbency better for heavier leakage, shaped pads more likely to stay in place. (2)

Levels of evidence: 1, randomized controlled trials (RCTs); 2, cohort or low-quality RCT studies; 3, case-control studies; 4, case series; 5, expert opinion (modified from Oxford criteria, NHS Centre for Evidence Based Medicine (minerva.minervation.com/cebm)). UI, urinary incontinence; W, women; M, men; F, frail; SUI, stress incontinence; ER, extended-release formulation; PME, pelvic muscle exercise; TVT, tension-free vaginal tape.

rine uptake inhibitor that may be released in the near future, has good to moderate efficacy in middle-aged women, although initial nausea may decrease compliance.

D. SURGERY

Numerous operations are used to treat stress UI. In general, these operations use a variety of approaches to resuspend the muscles, ligaments, and fascia that support the urethra and anterior vaginal wall. Data on long-term outcomes (beyond 5 years) and surgery in older-old women are scant. As with other surgical procedures, outcomes from more recent techniques (eg, tension-free vaginal tape) are based on case series or limited randomized trials of selected patients in tertiary centers and should be interpreted with caution.

E. PESSARIES

Pelvic organ prolapse, causing urethral obstruction with overflow UI or exacerbating stress UI, may respond to a pessary. Numerous models are available. Ring and Gelhorn pessaries often are easiest to fit in older women

and need to be changed only monthly. Cube pessaries require daily changing. Many older women with prolapse are difficult to fit because of a shortened vagina.

F. CATHETERS

Drainage catheters cause morbidity, resulting in universal bacteriuria by 30 days and increasing the rates of (1) infections with resistant organisms, (2) chronic pyelonephritis by 3 mo, and (3) urethral meatal damage. They should be reserved for patients with sacral or lower extremity wounds, those with chronic retention not amenable to other treatment, and those for whom palliative measures are too uncomfortable or disruptive (eg, end of life).

G. PALLIATIVE MEASURES

Absorbant garments and pads should be used only when all other methods have failed or when incontinence persists despite adequate, appropriate treatment. They are costly for patients, especially over time. Products range from penile shields for men to numerous varieties of pads and undergarments for both men and

women. Patient advocacy organizations have information to help patients pick the product most appropriate for their type of leakage and lifestyle.

Abrams P et al (eds): *Incontinence*, 2nd edition. Second International Consultation on Incontinence. Health Publications Ltd. 2002.

The Cochrane Library: Update Software, 2002.

Prognosis

The majority of persons with UI will improve with treatment. Virtually no long-term outcomes data (> 5 years) exist. Whether UI severity increases over time is not clear. The finding of involuntary detrusor contractions in healthy continent older persons raises the possibility that detrusor overactivity may progress over time. However, other reasons for UI to worsen are failure of compensatory mechanisms (eg, urethral sphincter function in women), increasing comorbidity, and multiple medications.



EVIDENCE-BASED POINTS

- *UI is common but never normal in older patients, and all older persons routinely should be directly asked about lower tract symptoms.*

- *Evaluation should search for functional, comorbid, medication, and fluid balance factors that can precipitate and exacerbate incontinence.*
- *Behavioral therapies are effective for a wide variety of patients, especially when targeted to patients' functional and cognitive status.*
- *Combination of behavioral and drug therapy is more efficacious than either alone.*
- *Surgical treatment remains an effective option for older women with stress urinary incontinence.*

RELEVANT WORLD WIDE WEB SITES

General

International Continence Society: www.continet.org (Includes links to other continence organizations and resources.)
 American Urological Association: www.auanet.org
 American Foundation for Urologic Disease: www.afud.org
 American Urogynecologic Association: www.augs.org
 American Medical Directors Association: www.amda.com (UI treatment in long-term care.)

Patient Advocacy

National Association for Continence: www.nafc.org
 Simon Foundation for Continence: www.simonfoundation.org