

Urinary Incontinence

A. Prevalence

- The prevalence of urinary incontinence among women 15 to 64 years of age is 10 to 30 percent, increasing further with advancing age. Among women with an average age of 39 years, 47 percent of those who were regular exercisers reported experiencing some degree of urinary incontinence.

B. Barriers to Diagnosis

- Despite its high prevalence, urinary incontinence remains an underreported and underdiagnosed problem. Physicians do not routinely ask about urinary incontinence; most primary care physicians ask fewer than 25 percent of their elderly patients about it.

C. Physiologic Effects of Aging

- Aging is associated with a number of physical changes that can affect the functioning of the lower urinary tract.

D. Age-Related Changes of the Urinary Tract of Women

Decrease in bladder capacity

Decrease in the ability to postpone urination

Decrease in the ability of the kidney to concentrate urine and a resultant increase in urine volume

Decrease in muscle tone and bladder contractility, which can lead to both a decrease in urinary flow rates and postvoid residual urine in the bladder

Decrease in urethral closure pressure and length.

E. Types of Urinary Incontinence

- Urinary incontinence can be classified on the basis of duration or reversibility of symptoms or physiologic cause. There is rarely a single cause of urinary incontinence and no single type is mutually exclusive of any other.

F. Transient Urinary Incontinence

- Transient incontinence appears suddenly and is usually of short duration. Generally this acute incontinence is associated with a medical problem, environmental factors, or drug therapy.

G. Medical Conditions

- Medical conditions commonly associated with urinary incontinence are stroke, diabetes mellitus, chronic cough, impaired cognition, constipation or fecal incontinence, obesity, Parkinson's disease, and cardiovascular disease.

H. Medications

- Drugs with anticholinergic properties may cause urinary retention and associated incontinence of the overflow type. Diuretics are commonly prescribed agents.
- Any agent that impairs cognitive function may result in incontinence. Three common social drugs—ethanol, caffeine, and tobacco—may also cause urinary incontinence.

Types of Established Incontinence

A. Urge Incontinence

- Urge incontinence is typified by involuntary voiding of moderated to large amounts of urine within a few seconds to minutes of a strong urge to urinate.

B. Stress Incontinence

- The term *stress incontinence* applies to the involuntary loss of urine during activities that increase abdominal pressure such as coughing, sneezing, lifting, and laughing.

C. Mixed Incontinence

- Mixed incontinence has characteristics of both urge and stress incontinence. This type of incontinence is common in women.

D. Overflow Incontinence

- Overflow incontinence refers to the almost continual leakage of small amounts of urine associated with overdistention of the bladder.

E. Functional Incontinence

- Finally, involuntary voiding of urine may occur despite normal bladder and urethral function. Functional incontinence can occur due to impairments in cognitive or physical functioning.

Treatment

- Treatment of urinary incontinence can occur via three modes: behavioral, pharmacologic, and surgical.

A. Behavioral Techniques

- Simple habit modifications can be suggested for patients with incontinence. These habit modifications are to avoid excess fluid intake (limit daily intake to 2 L/d), avoid or limit consumption of caffeine-containing beverages, and void regularly.

B. Bladder Training Techniques

- Bladder training techniques can be helpful in urge incontinence and include three components: patient education, scheduled voiding, and positive reinforcement.

C. Pelvic Muscle Exercise

- For patients with stress and/or urge incontinence, initial treatment should begin with pelvic muscle exercises (Kegel exercises). Kegel exercises are often described as a “pulling up” or “drawing in” of the perivaginal muscles as if to prevent urination or defecation. Clinical trials have shown that pelvic muscle exercises can provide a 60 percent reduction in the number of incontinence episodes.
- The AHCPR guidelines suggest that both sustaining Kegel contractions (for 10seconds) and repetition (30 to 80 contractions per day for at least 6 to 8 weeks) are important to overall success.

D. Pharmacologic Treatment - Anticholinergic Agents

- Drugs with a combination of anticholinergic and antispasmodic properties, such as oxybutynin chloride and dicyclomine hydrochloride, are among the most widely used agents. Anticholinergic/antispasmodic agents improve urge incontinence by increasing the volume attained before detrusor contraction, decreasing the strength of bladder contractions, and increasing maximal bladder capacity.
- Tolterodine (Detrol) is a recent addition to the anticholinergic class of agents. Tolterodine exhibits greater selectivity for bladder tissue than salivary tissue, and clinical trials demonstrated that patients treated with tolterodine experienced less dry mouth than patients treated with oxybutynin.
- Anticholinergics/antispasmodics have a rapid onset of action and improvement in symptoms should be realized within the first few days of therapy.
- Patients frequently experience side effects that limit the usefulness of the anticholinergic/antispasmodic agents. Potential side effects include dry mouth, constipation, blurred vision, tachycardia, drowsiness, decreased sweating, impotence, and insomnia.

E. Tricyclic Antidepressants

- The antidepressant medications, imipramine and doxepin, exert an anticholinergic action but also have other actions that may lessen incontinence.
- Common potential side effects of the tricyclic antidepressants are dry mouth, fatigue, drowsiness, weakness, postural hypotension (dizziness) and constipation.

F. Calcium Channel Blockers

- Terodiline, an agent with both anticholinergic and calcium channel blocking activity, has been studied extensively in Europe; however, ventricular arrhythmia associated with this agent caused trials in the United States to be halted.

G. Other Agents

- The potential use of the β -adrenergic agonist terbutaline and the nonsteroidal anti-inflammatory drugs (NSAIDs) has also been explored.

H. α -Adrenergic Agents

- Pharmacologic intervention for the treatment of stress incontinence is directed at increasing intraurethral closing pressure.
- Phenylpropanolamine and pseudoephedrine are the two α -adrenergic agents used for the treatment of stress incontinence specifically.
- Common side effects of phenylpropanolamine and pseudoephedrine include insomnia, restlessness, anxiety, and headache.

I. Estrogen

- Estrogen therapy is thought to exert an effect on the functioning of the lower urinary tract due to several factors. Both oral and topical vaginal estrogen can provide effective therapy.

J. Overflow Incontinence

- Overflow incontinence is preferentially managed with nonpharmacologic therapy including intermittent or indwelling catheterization, augmented voiding techniques (e.g., double voiding) use of Credé (suprapubic massage) or Valsalva maneuvers, and surgery.
- Drug therapy may be used acutely for overflow incontinence, but long-term drug therapy is often lacking in efficacy or limited by adverse drug effects. Pharmacologic therapy for overflow incontinence is directed at facilitating

bladder emptying and decreasing residual urine. There are two approaches to pharmacologic therapy. The first is to use a cholinergic agent to increase the strength of detrusor contractions in cases where detrusor atony exists.

Bethanechol is the agent most often used.

- A second pharmacologic approach to overflow incontinence may be the use of an α -adrenergic blocking agent (doxazosin, prazosin, terazosin).

K. Catheterization

- Catheterization is usually reserved for use as a supportive measure for women with spinal cord injury with urinary retention or persistent overflow incontinence not responsive to behavioral voiding techniques or medications.