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Family Practice Program Info *Family Practice Accreditation Info*

CLINICAL UROLOGY

URINARY INCONTINENCE—Louis Kuritzky, MD, Clinical Assistant Professor, Department of Community Health and Family Medicine, University of Florida College of Medicine, Gainesville

Scope of problem: many patients too embarrassed to discuss urinary incontinence (UI) with their doctors; UI incidence rises with age or hospitalization; approximately 50% of nursing home residents have UI

Physiology of internal sphincter contraction: alpha-adrenergic system primary pathway; 75-yr-old man with benign prostatic hyperplasia (BPH), or 62-yr-old woman with scarring from previous pelvic surgery may take phenylephrine for upper respiratory infection and develop acute urinary retention; modulate alpha-adrenergic tone to modulate internal sphincter tone

Physiology of detrusor muscle: under cholinergic regulation so anticholinergics (*eg,* tolterodine, oxybutynin) slow contraction; patient develops flaccid bladder that does not contract; caffeine intake worsens detrusor instability

Physiologic changes with aging: internal sphincter and detrusor muscles develop estrogen insufficiency or fibrosis; external sphincter undergoes sarcopenia; vasopressin circadian rhythm that concentrates urine overnight diminishes; desmopressin (DDAVP) nasal spray keeps patient dry overnight when away from home

Diagnostic evaluation: urinalysis (UA); rule out disorders that promote urinary frequency; urodynamic evaluation usually unnecessary; in-and-out catheterization or ultrasonography recommended; measurement of postvoid residual (PVR) recommended; if PVR greater than or equal to 200 mL, patient must be treated; consultation recommended

General treatment guidelines: *medications*—anticholinergics, *eg*, tolterodine extended release (ER), oxybutynin ER (causes dry mouth); *behavioral techniques*—second-line therapy if patient fails medication (insurance companies often do not pay for biofeedback training)

Types of UI

Urge incontinence: overactive bladder (detrusor hyperactivity) of unknown etiology (unless secondary to Parkinson's or stroke); unpredictable contractions of detrusor cause intense urgency to urinate; uninhibited signals from central nervous system (CNS) cause bladder to contract unpredictably; most common in middle-aged and older women; *symptoms*—urgency; frequency (greater than or equal to 8 in 24 hr); nocturia; urodynamic evaluation shows repetitive spontaneous contractions unrelated to bladder fullness; *treatment*—use general treatment guidelines

Stress incontinence: urethral incompetence; urinary sphincter does not hold tight when intra-abdominal pressure increases (*eg*, laughing, coughing, sneezing, physical activity); most common in reproductive-aged women; *diagnosis*— insert lubricated sterile Q-tip into bladder until no resistance felt, then pull back against internal sphincter; if urethra not adequately supported, bladder neck descends when patient coughs; if urethra angles upward greater than or equal to 30°, urinary sphincter incompetent; *treatment*—patient might benefit from surgery; Kegel exercises strengthen striated muscle of external sphincter (10 repetitions of 10 sec, qid for 8 wk; careful training needed; 30% of patients contract rectal, abdominal, or gluteal muscles, not pelvic floor); alpha-adrenergic agents (*eg*, tricyclic antidepressants [TCAs]) increase alpha tone of internal sphincter

Overflow incontinence: distended bladder becomes insensitive to contractile stimuli; when large urine volume fills bladder, it contracts spasmodically; most common in older men with BPH; *treatment*—always refer to specialist unless able to fix underlying problem, *eg,* fecal impaction, urethral stricture; patients receiving too much anticholinergic medication develop giant bladders because spontaneous contractions initiated from brain and bladder obliterated

Functional UI: nothing wrong with bladder or urethra; comorbidity (*eg*, immobility, cognitive defect) prevents patient from reaching bathroom in time; *treatment*—scheduled voiding (*ie*, patient's caregiver must ensure that individual uses toilet before activities outside home)

INTERSTITIAL CYSTITIS—Michel Pontari, MD, Associate Professor of Urology, Temple University School of Medicine, Philadelphia

Definition: clinical syndrome characterized by pelvic pain and irritative voiding symptoms; must rule out everything else that causes similar symptoms

Epidemiology: 500,000 to 1 million cases in United States; 90% diagnosed in women; glomerulation seen in women with stress incontinence, radiation cystitis, and bilateral tubal ligations, and in 70% of men with chronic pelvic pain syndrome (CPPS)

Etiology: unknown; no association with infectious agents, *eg, Helicobacter pylori, Chlamydia, Ureaplasma*; hypothesized that epithelial defect allows urine into interstitium, inflaming nerves and causing urge to urinate in absence of bladder distention; based on twin studies, genetic susceptibility likely

Symptoms: frequency, urgency, nocturia, and pain in absence of other causes (*eg,* urethral diverticulum, bladder cancer, genital herpes); entire pelvic floor commonly dysfunctional because central inflammatory focus spreads to sacral dermatome (umbilicus to midthigh); results in gynecologic problems, pelvic pain, vulvodynia, dyspareunia, irritable bowel syndrome (IBS), spastic colon

Diagnostic work-up: history (*eg*, frequency of voiding during day and night, pain symptoms); UA to rule out microhematuria (due to, *eg,* kidney stones, cancer); urine culture (10% of patients with urinary tract infection [UTI] do not respond to antibiotics and symptoms persist); urine cytology in women greater than or equal to 40 yr of age to rule out carcinoma in situ of bladder; physical, pelvic, and

rectal examinations to look for urethral diverticula, herpetic lesions, masses, tumors; potassium sensitivity test not useful; cystoscopy under local anesthesia recommended; cystoscopy under general anesthesia with distended bladder and biopsy only if lesions visible or cytology abnormal; urodynamics optional

Treatment

Self-help: individually based dietary modification; tomatoes or orange juice may or may not irritate

Bladder retraining: reset point at which patients feel bladder full; increase interval between voids from baseline, *eg*, from 30-min interval to 45-min or 1 hr

Pelvic floor physical therapy or biofeedback: helpful; sphincter muscles often tight and inactivated; no side effects

Acupuncture: mechanism not understood but treatment acceptable due to absence of side effects

Medication: *pentosan*—100 mg tid coats bladder; effective in 30% to 40% of patients; side effects include reversible alopecia, diarrhea, headache, rash, liver function abnormalities, heparin-like thrombocytopenia; requires monitoring with liver function tests, platelet count, and prothrombin time every 6 mo; *TCAs— eg,* amitriptyline; reduce neuropathic pain and urinary frequency; start at 10 to 25 mg qhs (sedation most common side effect) to maximum 150 mg; *antihistamines*—reduce pain; hydroxyzine 10 to 25 mg qhs for 1 wk, maximum 75 mg (25 mg in morning, 50 in evening); full effect takes approximately 3 mo; *gabapentin*—for neuropathic pain start with 300 to 400 mg/day for 2 to 3 days, increase to bid, then tid, over 2 to 3 wk; *á-blockers—eg*, tamsulosin; relax external sphincter (0.4 to 0.8 mg); *anticholinergics—eg*, tolterodine, oxybutynin; effective for urgency and frequency; *montelukast*—usually used for asthma; 10 mg qd; does not sedate

Intravesical therapies—National Institutes of Health (NIH) trial testing BCG vaccine for patients with carcinoma in situ and pelvic pain; dimethyl sulfoxide (DMSO); oxychlorosene less used now; hyaluronate

Neuromodulation: InterStim Therapy good for patients with intractable pain who fail other treatment; percutaneous electrodes placed in sacrum; continuous electrical impulse reduces pain; risk for superficial infection; no long- term data

Surgery: removal of bladder not recommended (patients still have pain); bladder augmentation with bowel, cystectomy, and diversion not effective

PROSTATITIS—Dr. Pontari

Type I: acute bacterial prostatitis (BP)

Clinical presentation: fever; acute-onset dysuria; *Escherichia coli* most common organism in cultures; white blood cell (WBC) count usually elevated; assess emptying of bladder; patient may have UTI symptoms because of inability to void

Diagnostic assessment: noninvasive method preferred; Foley catheter to drain bladder can worsen underlying infection; avoid vigorous prostate massage in patients with inflamed prostate (risk for sepsis)

Treatment: intravenous (IV) antibiotics (*eg,* ampicillin, gentamicin, tobramycin, quinolones; if admitted to hospital, give IV fluids; once patient off IV antibiotics and afebrile, must give oral antibiotics (preferably quinolone for greater than or equal to 1 mo) to prevent chronic BP; suprapubic tube necessary if patient having urinary retention; pain medications; stool softeners

(constipation makes voiding problems worse); nonsteroidal anti-inflammatory drugs (NSAIDs) for 10 days; prostatic abscess possible if infection does not respond within 48 hr to IV antibiotics (pain on palpation present); computed tomography (CT) needed; transurethral resection of prostate (TURP) may be necessary to drain abscess

Type II: chronic BP; colonization of prostate with culture-confirmed bacteria causing recurrent UTI; chronic episodic pelvic pain, but patients asymptomatic during 1.0- to 1.5-yr intervals between acute infections

Evaluation: urine culture; PVR to ensure patient emptying bladder

Treatment: sulfonamides and fluoroquinolones for 4 to 12 wk standard; for culture-confirmed recurrence, trimethoprim-sulfamethoxazole (Bactrim DS) qd for 3 mo; TURP causes incontinence; microwave thermotherapy not effective

Type III: chronic pelvic pain syndrome (CPPS); CPPS patients score worse on mental-health components of quality- of-life (QOL) surveys than patients with severe diabetes or congestive heart failure

Clinical presentation: key defining symptom pelvic pain greater than or equal to 3 mo, with or without voiding symptoms or infection; in type IIIA, patient has WBCs in expressed prostatic secretions, BP symptoms but negative cultures, and prostatodynia; in type IIIB, patient has pelvic pain with no WBCs in any fluid

Epidemiology: 2 million primary care and neurology visits yearly for CPPS; average neurologist in Wisconsin sees 100 CPPS patients yearly

Etiology: unknown; occult infections with *Chlamydia, Ureaplasma*, or viruses not found; some men have primary voiding dysfunction; incidence of neurologic disease 5 times higher in men with CPPS

Evaluation: pain with ejaculation most characteristic symptom; pain also in penis, testes, suprapubic area; *look for*—bacterial source; neurologic problems (*eg,* car accident, disc disease), especially with extrapelvic pain; UA to rule out hematuria and stones; history of bladder cancer, chronic appendicitis, sigmoid diverticulitis, postherpetic neuralgia; urethral stenosis, penile lesions, testicular masses, or hydroceles; IBS; urethral stricture due to earlier gonococcal infection; pelvic surgery; *other tests*—urine cytology; PVR to ensure patient emptying bladder; urodynamics optional unless patient failed initial treatment; CT for patient with refractory CPPS; if pain with ejaculation present, consider endorectal magnetic resonance imaging (MRI); serum testosterone (40% of men with chronic pelvic pain have low testosterone); check for pituitary tumor and growth hormone abnormalities; NIH chronic prostatitis 9-question symptom questionnaire probes pain, urinary symptoms, and QOL

Treatment: *first-line therapy*—one course of antibiotics even if cultures negative; repeat course only if positive culture repeated; follow with alpha-blockers for 3 mo; NSAIDs as needed; prostate massage 3 times weekly for 6 wk (train family member or caregiver if patient cannot get to office that often); *second-line therapy*—amitriptyline for frequency and pelvic pain; hydroxyzine; antihistamines; pentosan for men with interstitial cystitis symptoms; gabapentin for spasm; finasteride shrinks prostate (may help inflammation, but do not use in young men due to possible decreased fertility); diazepam, cyclobenzaprine, or tizanidine to relax pelvic floor muscles (decreases spasm and pain); chronic pain may warrant opioids (refer to pain specialist); *surgery*—bladder neck incision or InterStim Therapy may help; avoid TURP or radical prostatectomy; pain may not disappear even though prostate removed

Type IV: asymptomatic inflammatory prostatitis commonly found in prostatic biopsies after positive

prostate-specific antigen (PSA) test and in 95% of TURP histologies; no pelvic pain

Educational Objectives

The goal of this activity is to educate the participant about urinary incontinence and interstitial cystitis in men and women, and chronic pelvic pain syndrome in men. After hearing and assimilating this program, the clinician will be better able to:

1. Discuss the physiologic basis of urinary incontinence.
2. Distinguish the 4 types of urinary incontinence.
3. Evaluate a patient with urinary incontinence.
4. Diagnose and treat interstitial cystitis
5. Manage the treatment of chronic pelvic pain syndrome in men.

Discussed on This Program

Amitriptyline HCl [Elavil]
Ampicillin [Principen]
BCG, intravesical (Bacillus of Calmette and Guérin) [Pacis, TheraCys, TICE BCG]
Cyclobenzaprine HCl [Flexeril]
Desmopressin acetate (1-deamino-8-D-arginine vasopressin) [DDAVP, Stimate]
Diazepam [Diastat, Diazepam Intensol, Valium]
Dimethyl sulfoxide (DMSO) [Rimso-50]
Finasteride [Propecia, Proscar]
Gabapentin [Neurontin]
Gentamicin sulfate (several trade names)
Hydroxyzine (several trade names)
Ibuprofen (several trade names)
InterStim Therapy
Montelukast sodium [Singulair]
Oxybutynin chloride [Ditropan, Ditropan XL, Osytrol]
Oxychlorosene sodium [Clorpactin WCS-90]
Pentosan polysulfate sodium [Elmiron]
Phenylephrine HCl (several trade names)
Pseudoephedrine HCl (d-isoephedrine HCl; several trade names)
Sodium hyaluronate (several trade names)
Tamsulosin HCl [Flomax]
Tizanidine HCl [Zanaflex]
Tobramycin sulfate (several trade names)
Tolterodine tartrate [Detrol, Detrol LA]
Trimethoprim-sulfamethoxazole (co-trimoxazole; TMP-SMZ) [Bactrim DS, others]

Suggested Reading

Managing acute and chronic urinary incontinence. AHCPR Urinary Incontinence in Adults Guideline Update Panel. *Am Fam Physician* 54:1661-72, 1996; **Appell RA**: Clinical efficacy and safety of tolterodine in the treatment of overactive bladder: a pooled analysis. *Urology* 50(6A Suppl):90-6; discussion 97-9, 1997; **Bouchelouche K, et al:** The cysteinyl leukotriene D4 receptor antagonist

montelukast for the treatment of interstitial cystitis. *J Urol* 166:1734-7, 2001; **Caropreso D, et al:** Alpha-blockers: an effective treatment for prostatitis? *Curr Urol Rep* 1:148-54, 2000; **Cheah PY, et al:** Terazosin therapy for chronic prostatitis/chronic pelvic pain syndrome: a randomized, placebo controlled trial. *J Urol* 169:592-6, 2003; **Chen R, et al:** Acupuncture ameliorates symptoms in men with chronic prostatitis/chronic pelvic pain syndrome. *Urology* 61:1156-9; discussion 1159, 2003; **Curhan GC, et al:** Epidemiology of interstitial cystitis: a population based study. *J Urol* 161:549-52, 1999. Comment in: *J Urol* 162:500, 1999; **Elbadawi A, et al:** Structural basis of geriatric voiding dysfunction. IV. Bladder outlet obstruction. J *Urol* 150:1681-95, 1993; **Fihn SD:** Clinical practice. Acute uncomplicated urinary tract infection in women. *N Engl J Med* 349:259-66, 2003; **Hanno PM:** Analysis of long-term Elmiron therapy for interstitial cystitis. *Urology* 49(5A Suppl):93-9, 1997; **Hansen HC:** Interstitial cystitis and the potential role of gabapentin. *South Med J* 93:238-42, 2000; **Hassouna M, et al:** Update on sacral neuromodulation: indications and outcomes. *Curr Urol Rep* 4:391-8, 2003; **McNaughton Collins M:** The impact of chronic prostatitis/chronic pelvic pain syndrome on patients. *World J Urol* 21:86-9, 2003 Epub 2003 Apr 02; **Nickel JC:** Interstitial cystitis. Etiology, diagnosis, and treatment. *Can Fam Physician* 46:2430-4, 2437-40, 2000; **Preboth MA, et al:** Quantum Sufficit, Just Enough. Am *Fam Phys* 59:18, 1999; **Resnick NM:** Geriatric incontinence. *Urol Clin North Am* 23:55-74, 1996; **Schaeffer AJ, et al:** Overview summary statement. Diagnosis and management of chronic prostatitis/chronic pelvic pain syndrome (CP/CPPS). *Urology* 60(6 Suppl):1-4, 2002; **Schaeffer AJ, et al:** Chronic Prostatitis Collaborative Research Network Group. Demographic and clinical characteristics of men with chronic prostatitis: the national institutes of health chronic prostatitis cohort study. *J Urol* 168:593- 8, 2002; **Schaeffer AJ:** The expanding role of fluoroquinolones. *Dis Mon* 49:129-47, 2003; **Weiss BD:** Diagnostic evaluation of urinary incontinence in geriatric patients. *Am Fam Physician* 57:2675-84, 2688-90, 1998; **Ye ZQ, et al:** Biofeedback therapy for chronic pelvic pain syndrome. *Asian J Androl* 5:155-8, 2003

Faculty Disclosure

In adherence to ACCME guidelines, the Audio-Digest Foundation requests all lecturers to disclose any significant financial relationship with the manufacturer or provider of any commercial product or service discussed. The following has been disclosed: Dr. Pontari is a consultant to Pfizer US Pharmaceutical Group and has participated in clinical trials for Roche Laboratories and Merck & Co.

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