



## Management of Incontinence for Family Practice Physicians

John P. Lavelle, MB, FRCSI,<sup>a</sup> Mickey Karram, MD,<sup>b</sup> Franklin M. Chu, MD,<sup>c</sup> Roger Dmochowski, MD,<sup>d</sup> Scott A. MacDiarmid, MD,<sup>e</sup> David R. Staskin, MD,<sup>f,g</sup> Peter K. Sand, MD,<sup>h</sup> Rodney Appell, MD,<sup>i</sup> Nurum Erdem, MD, MPH<sup>j</sup>

<sup>a</sup>Division of Urologic Surgery, University of North Carolina School of Medicine, Chapel Hill, North Carolina, USA; <sup>b</sup>Department of Obstetrics and Gynecology University of Cincinnati, Cincinnati, Ohio, USA; <sup>c</sup>San Bernardino Urology Research Center, San Bernardino, California, USA; <sup>d</sup>Department of Urologic Surgery and the Vanderbilt Incontinence Center, Vanderbilt Medical Center, Nashville, Tennessee, USA; <sup>e</sup>Department of Urology, Wake Forest University School of Medicine, Winston-Salem, North Carolina USA; <sup>f,g</sup>Department of Urology, New York-Presbyterian Hospital, Weill-Cornell Medical College, New York, New York, USA; <sup>h</sup>Evanston Continence Center, Northwestern University, Feinberg School of Medicine, Evanston, Illinois, USA; <sup>i</sup>Department of Urology, Baylor College of Medicine, Houston, Texas, USA; and <sup>j</sup>Division of Geriatric Medicine/Program on Aging, University of North Carolina School of Medicine, Chapel Hill, North Carolina, USA

### ABSTRACT

Family practice physicians are likely to encounter urinary incontinence and overactive bladder (OAB) in their patients. An informed family practice physician can generally accurately diagnose the cause and type of incontinence in patients with a properly focused physical examination and, if necessary, auxiliary testing. Accurate diagnosis can lead to effective treatment when physicians are familiar with available treatment options, including pharmacologic, surgical, behavioral therapies, and catheterization. © 2006 Elsevier Inc. All rights reserved.

**KEYWORDS:** Overactive bladder; Pharmacologic management; Stress urinary incontinence; Urge urinary incontinence; Urinary incontinence

Overactive bladder (OAB) and urinary incontinence are common problems that family practice physicians are likely to encounter. Symptoms, which may include urgency, with or without urge incontinence, frequency, and nocturia, may result from a variety of causes. A thorough physical examination and laboratory testing, if necessary, can assist the physician in evaluating a patient's condition and the cause or causes of the symptoms. This article outlines patient evaluation and treatment options for the management of OAB and incontinence for family practice physicians.

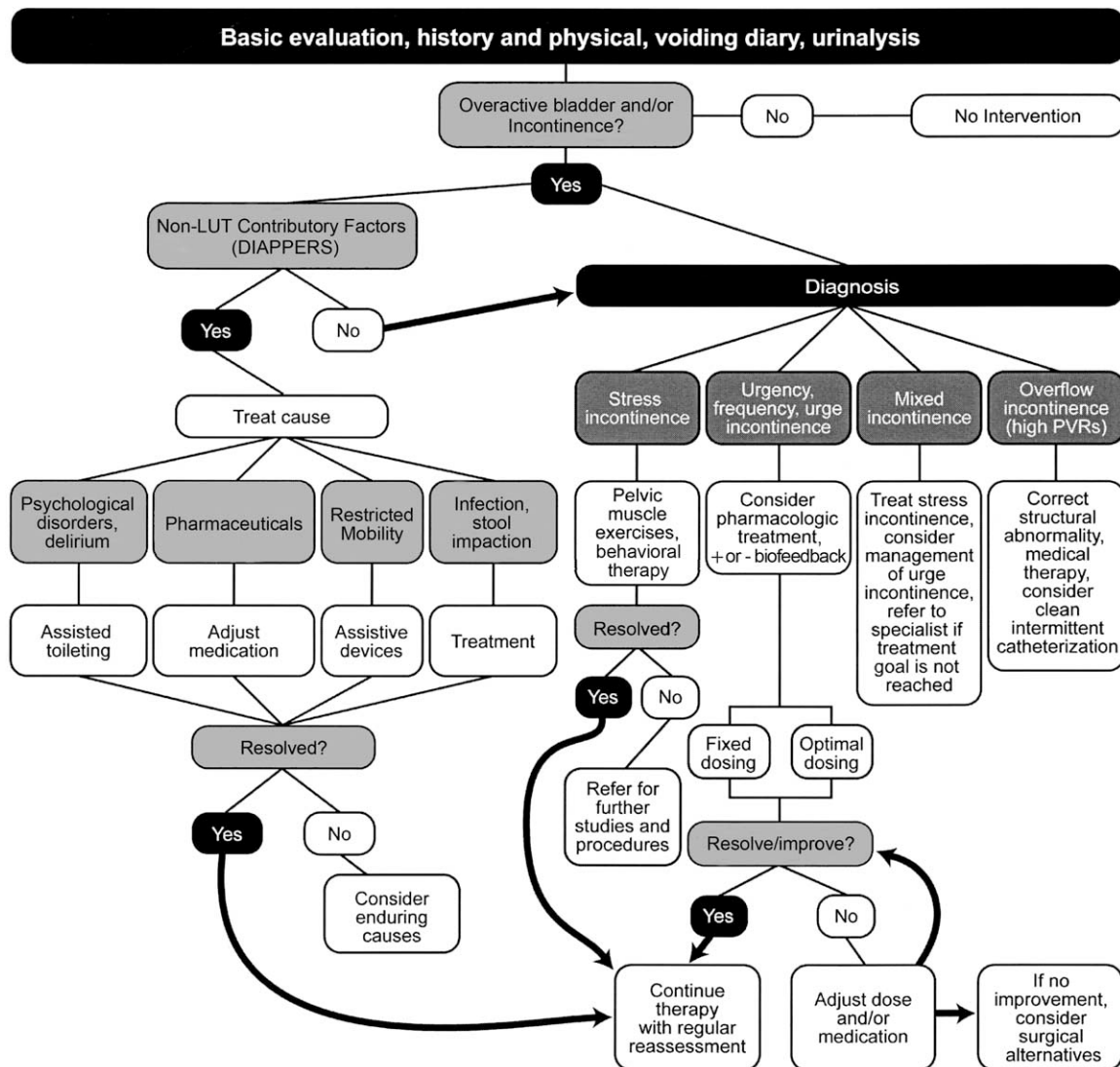
A patient history should detail the OAB and/or incontinence episodes and the physician should include additional directed questions with the goal of eliciting the underlying

causes or nature of the OAB/urinary incontinence symptoms. Non-lower urinary tract contributory factors should be considered and addressed if present. Modifying or eliminating these factors may improve lower urinary tract function, urinary output patterns, genitourinary symptoms, and toileting function. These factors are enumerated by the mnemonic DIAPPERS:

- Delirium (addressed by toileting)
- Infection (urinary—exacerbates incontinence and causes frequency and urgency)
- Atrophic urethritis and vaginitis (contribute to irritative symptoms)
- Pharmaceuticals (anticholinergics = detrusor underactivity—may cause retention; cholinergics = detrusor overactivity—may cause frequency;  $\alpha$ -agonists = outlet overactivity—may cause retention;  $\alpha$ -blockers = outlet underactivity—may cause stress incontinence)
- Psychological disorders (toileting)

Requests for reprints should be addressed to John P. Lavelle, MB, FRCSI, Division of Urologic Surgery, University of North Carolina School of Medicine, Urology Clinic UNC Hospital, CB7235, 2140 Bioinformatics Building, Mason Farm Road, Chapel Hill, North Carolina 27599.

E-mail address: john\_lavelle@med.unc.edu.



**Figure 1** Treatment algorithm flow chart. DIAPPERS = mnemonic for delirium, infection (urinary), atrophic urethritis and vaginitis, pharmaceuticals, psychological disorders, excessive urine production, restricted mobility, stool impaction; LUT = lower urinary tract; PVRs = postvoid residual volumes.

- Excessive urine production (or physiologic or pharmacologic nocturia)
- Restricted mobility (toileting)
- Stool impaction (retention).

OAB and urinary incontinence causes include urgency, frequency, urge incontinence, stress incontinence, and mixed incontinence. It is important to determine from the patient's history whether the OAB and/or incontinence are attributable to dysfunction of the bladder's storage mechanisms or to a function of increased nocturnal urine production leading to frequency, thereby precipitating or exacerbating incontinence.

## PHYSICAL EXAMINATION

The physical examination should be directed toward confirming the diagnosis of OAB and/or incontinence, in-

cluding physically demonstrating the incontinence, and screening for possible complications of incontinence, such as perineal skin irritation, breakdown, or infection. A careful neurologic examination should also be performed, screening for sensory problems or specific long-tract muscle weaknesses. Neuromuscular coordination, tremors, and mental and physical functional capacity should be considered when evaluating treatment options including pharmacologic, behavioral, surgical, or assistive (e.g., clean intermittent catheterization or timed voiding) treatments (**Figure 1**).

## LABORATORY OR ANCILLARY TESTING

Examination of urine is also essential to exclude other possible pathologies, specifically glycosuria (new-onset diabetes mellitus—further evaluation), hematuria (potential

**Table 1** Urodynamic studies

Procedure	Description
Cystometry	A study of bladder filling: the bladder is filled with fluid and pressures are measured
Uroflowmetry	Measures of flow rate
Pressure—Flow	Simultaneous measurement of bladder pressure during contraction with flow to assess degree of obstruction
Electromyographic studies	Stimulus-evoked responses measure contractions and reflexes; most useful in conjunction with cystometry

cancer or calculi—must have upper tract study and cystoscopy; an absolute indication for referral), proteinuria (renal disease—further evaluation), or pyuria (infections must be treated). These pathologies should be investigated first, the cause should be determined, and the contribution of the pathology to the patient's incontinence should then be evaluated. A voiding diary (usually a 3-day diary) should be maintained to help determine the baseline frequency, incontinence frequency and associations, and mean and maximum bladder functional capacity; patient adherence to keeping a diary may be an issue. In conjunction with the rest of the examination, the diary can help exclude problems with polyuria or diabetes insipidus.

Some type of formal testing of the bladder and continence mechanisms may be performed. This normally may take the form of one or more tests of storage or emptying (e.g., cystometry). These tests are usually performed by a specialist or at an incontinence center. Urodynamic studies may include  $\geq 1$  of the procedures listed in **Table 1**. The decision to use some or all of these tests should consider individual urodynamics and the needs of each individual case. A family practitioner can partner with an incontinence center or a urologist to have these tests performed.

## TREATMENT OPTIONS

### Pharmacologic

Antimuscarinic agents are often used in the management of OAB. Treatment may require dose adjustment to achieve optimal results, ideally balancing efficacy with the individual patient's tolerability of the medication. The most common side effects of antimuscarinic agents are dry mouth and constipation, which are seen with all antimuscarinic agents to various degrees.

### Behavioral

Behavioral treatment can decrease the frequency of incontinence episodes through techniques such as bladder retraining, pelvic muscle rehabilitation, or toileting assistance. Bladder retraining instructs patients to urinate according to a schedule and to resist or inhibit urinary urges that occur outside the schedule. By extending the duration of intervals between scheduled voids, patients can often reduce episodes

of incontinence. Bladder retraining has been particularly effective in patients with detrusor instability. Pelvic muscle rehabilitation uses pelvic muscle exercises, such as Kegel exercises, to allow for stronger urethral resistance and pelvic support; these may incorporate biofeedback, electrical stimulation, or vaginal weight training. These techniques require a higher degree of patient commitment compared with other techniques and are not useful in patients with disabling cognitive or motor dysfunctions. Toileting assistance techniques are caregiver-dependent techniques generally used to treat patients with cognitive or motor dysfunctions who cannot manage techniques such as bladder retraining or pelvic muscle exercises. These techniques include scheduled or prompted toileting; scheduled toileting, similarly to bladder retraining, requires the patient to urinate frequently on a fixed schedule. The schedule is maintained by the caregiver, and the patient is not instructed to resist urges. A similar technique, habit training, attempts to match a voiding schedule to the patient's natural schedule; this technique is only applicable for patients who have an easily maintained natural schedule. Prompted voiding is primarily used for patients with cognitive dysfunctions that preclude the use of other techniques; it may be used in patients who are able to request assistance but is often used with patients who require caregiver attention to determine when urination should occur or has occurred. Behavioral treatments, which have no side effects and generally do not interfere with other treatment protocols, have been shown to be effective in reducing incontinence episodes. Family practice physicians can often implement behavioral treatment techniques; however, it is important to select the proper technique for each patient to achieve the desired results and, in patients who are not cognitively impaired, for physician and patient to discuss expected treatment goals and outcomes.

### Surgical and Minimally Invasive Treatments

If the pharmacologic management of OAB is unsuccessful, other approaches are necessary. Possible surgical approaches include the use of neuromodulation or augmentation of the bladder using bowel segments. Neuromodulation requires implantation of a "bladder pacemaker" with a lead that stimulates sacral nerve roots. Bladder augmentation requires resection and anastomosis of bowel segment to the

bladder and is associated with the morbidity of other bowel surgeries in this patient group.

In the case of stress incontinence, where there is an anatomic problem with the sphincteric mechanism, a surgical procedure is usually required to provide long-term satisfactory results. From a primary care physician's point of view, these cases of incontinence should be referred for urologic management.

Treatment may be more difficult in the case of mixed incontinence. The general treatment parameters are to determine the exact cause of incontinence by urodynamics. The physician may choose to treat the OAB component first, as it comprises the most unpredictable symptoms of incontinence and is associated with a larger volume of urinary loss. Stress incontinence is associated with activities or actions that increase intra-abdominal pressure, such as lifting, sneezing, or laughing. Surgical correction of stress or effort incontinence has been simplified with minimally invasive procedures, such as the tension-free vaginal tape, or TVT, system (polypropylene mesh; Ethicon, Somerville, NJ) or the suprapubic arc sling system (SPARC; American Medical Systems, Minneapolis, MN), and this contributory symptom may be treated before, concomitantly with, or after OAB therapy.

### Catheterization

Intermittent or indwelling catheterization should be considered in some cases of overflow incontinence (chronic retention of urine), particularly in patients with detrusor or bladder injury, women with diabetes and incontinence, and men with benign prostatic hyperplasia. Overflow incontinence is less frequently seen than other types of bladder dysfunction. In overflow incontinence, the bladder is atonic and does not contract sufficiently to allow emptying. This is sometimes the result of narcotic analgesics or other medications, often

postoperative medications, in which case the patient will normally recover sometime after discontinuing these medications and catheterization may be necessary only in the short term. Patients with injury to the detrusor muscle or damage to the bladder may have a long-term or permanent injury that will recover very slowly, if at all, and catheterization may be the best treatment option. Diabetes is reportedly associated with a 30% to 70% increased risk of incontinence in women,<sup>1</sup> and the risk of urge incontinence in these women is estimated at approximately 50%. A number of these patients with diabetes may develop a form of diabetic cystopathy in which they may not be able to sense bladder fullness; thus their voiding reflex is damaged or nonfunctional, resulting in overflow incontinence. Men with benign prostatic hyperplasia may present with overflow incontinence where the bladder is obstructed and the patient leaks rather than voids. The management of overflow incontinence is to provide regular drainage of the bladder, generally through a regimen of clean intermittent catheterization or catheter drainage, depending on the physical and mental limitations of the patient and the etiology of the overflow incontinence.

By using a focused physical examination and ordering appropriate laboratory or ancillary testing, the informed family practice physician can often accurately diagnose the cause and type of incontinence. The physician may then consider a variety of treatment options, including pharmacologic, surgical, or behavioral therapies, or catheterization, when selecting the optimal treatment regimen.

### Reference

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