

Clinical testing for overactive bladder

Victor Nitti, MD

Department of Urology, Langone Medical Center, New York University, New York, NY

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Abstract

While the diagnosis of overactive bladder (OAB) is made clinically, simple office testing (e.g., urinalysis and culture, assessment of post-void residual urine) should be part of the work-up of all patients with these symptoms. There are certain situations in which testing should be undertaken before initiating treatment or for monitoring response. Supplemental testing should be considered in cases where routine evaluation raises the suspicion of a problem or condition that either needs further evaluation or may predispose the patient to failure of therapy. Further testing may also be considered for patients who are refractory to treatment and those with significant neurological disease. Depending on the particular case, supplemental testing may include comprehensive urodynamic testing, endoscopic evaluation of the lower urinary tract, imaging of the upper urinary tract, neurologic evaluation or spine imaging.

The diagnosis of overactive bladder (OAB) is a clinical one, based on the presence of urgency, with or without incontinence, usually with frequency and nocturia in the absence of an underlying metabolic or pathologic condition.¹ Strictly speaking, then, testing is not required to identify the presence of urgency, but there are clinical situations in which testing should be undertaken before initiating treatment or for monitoring response. This brief review discusses which tests are appropriate and when they should be considered.

Clinical assessment

For most cases of OAB, the assessment is clinical. A comprehensive clinical work-up should include: a detailed patient history (Table 1) which includes an assessment of urinary symptoms and their duration (including storage and voiding symptoms) an assessment of the patient's quality of life and desire for treatment; and a focused physical examination, including abdominal, pelvic and perineal examination and a brief neurologic examination; a cough test to demonstrate stress incontinence, if appropriate; and assessment of vol-

untary pelvic floor muscle contraction.

Simple office testing should also be a part of the initial assessment and work-up, including urinalysis and culture and assessment of post-void residual urine. All hematuria should be fully worked up and infections treated. While it is not our routine practice to treat asymptomatic bacteriuria, when a patient initially present with symptoms of OAB it is recommended that an initial positive urine culture be treated. Post-void residual (PVR) may also be helpful; any abnormal PVR should be confirmed with a subsequent test.

A voiding and intake diary is particularly useful: it provides a considerable amount of information, is free, and does not require much time or effort from the physician or staff. Such diaries should be made as easy as possible for patients to complete, while providing the maximum amount of relevant information to the physician. The important variables are: number of voids, fluid intake, voided volumes (overnight and first a.m. voids are the most likely to demonstrate the bladder's ability to store urine), urgency episodes and incontinence episodes. While diaries are very difficult to obtain for some patients, most can complete them accurately.

Initiating treatment

If there is no significant abnormality on physical exam, urine analysis and PVR, and no concerns regarding the patient's history, treatment for OAB can be initiated without further workup. In some cases where abnormalities are found, treatment can be initiated, but abnormality must be worked up (e.g., hematuria).

Supplemental testing

Who to test and when?

Supplemental testing should be considered for patients in whom the simple evaluation described above raises suspicion of a problem or condition that either needs evaluation or may predispose the patient to failure of therapy (e.g.,

Table 1. Relevant elements of an OAB-focused history

- Age
- Duration
- Severity
- Degree of bother/affect on activities of daily life
- Fluid intake
- Lifestyle characteristics
- Obstetrical/gynecological history/estrogen status
- Association with other voiding and storage symptoms
- Association with other diseases
- Prior surgery
- Pelvic radiation
- Neurological disease
- Prior therapy

OAB: overactive bladder.

prior lower urinary tract surgery, pelvic radiation, young nulliparous women with urgency urinary incontinence). In addition, further testing should be considered for patients who are refractory to treatment (i.e., those whose symptoms are not effectively treated by standard conservative methods: behavioural modification, physiotherapy and pharmacotherapy) and those with significant neurological disease known to affect the lower urinary tract. The type of testing required will depend on the individual situation.

Why supplemental testing?

The rationale for supplemental testing prior to “second-line therapies” for OAB has to do with the fact that these therapies may be either invasive, expensive, or have significant side effects. By ordering further testing, one can more accurately characterize lower urinary tract function and in addition to diagnosing storage abnormalities such as detrusor overactivity, one may also identify an underlying cause that will provide guidance about the type of therapy that may be effective (for example voiding phase dysfunction or significant stress urinary incontinence).

For patients with neurological diseases in particular, further testing is important to avoid potential complications of the disease. Certain neurological diseases are associated with potentially dangerous conditions that can result in high storage pressures, incomplete bladder emptying and upper tract deterioration. These include detrusor-external sphincter dyssynergia (DESD), detrusor-internal sphincter dyssynergia, impaired bladder compliance and impaired detrusor contractility.

Which tests, and what do they tell us?

There are several additional tests that can be ordered for selected patients (Table 2).

Table 2. Supplemental tests done in special circumstances

- Cystoscopy
- Urodynamics
- Imaging
 - Upper tract
 - Spine
- Neurological evaluation

Comprehensive urodynamic testing goes beyond the detection and documentation of detrusor overactivity (although knowing the characteristics of this overactivity can be helpful as well). Some of the underlying causes of OAB or conditions that can co-exist with OAB that can be identified through this type of supplemental testing include bladder outlet obstruction, other voiding-phase dysfunction, impaired compliance or impaired contractility.

Endoscopic evaluation of the lower urinary tract can identify a number of potential underlying causes of the OAB symptomatology. These include bladder tumor, carcinoma in-situ, ulcers, bladder stones, foreign bodies and cystitis.

Imaging of the upper urinary tract may also be helpful for certain patients. These include those with ominous urodynamic findings (e.g., high pressure storage, DESD) and those with incomplete emptying or hematuria. Imaging of the upper tract is also necessary in preparation for lower urinary tract reconstruction.

Neurologic evaluation or spine imaging may also be considered for some of these patients with ominous urodynamic findings or those with associated neurologic symptoms.

Conclusions

In most cases a good history, physical examination, PVR and voiding diaries (if obtainable) are all that is necessary to initiate treatment of OAB. Further testing is most useful for patients with neurological disease, refractory OAB, or those in whom simple evaluation raises suspicion of an underlying urological or non-urological problem that may require further evaluation or treatment.

Competing interests: Dr. Nitti is a consultant for Pfizer, Astellas and Allergan.

This paper has been peer-reviewed.

Reference

1. Abrams P, Cardozo L, Fall M, et al. The standardisation of terminology in lower urinary tract function: report from the standardisation sub-committee of the International Continence Society. *Urology* 2003;61:37-49.

Correspondence: Dr. Victor Nitti, NYU Urology Associates, 150 East 32nd St., 2nd Floor, New York, NY 10016; victor.nitti@nyumc.org