

Initial management of lower urinary tract symptoms and bladder outlet obstruction

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Abstract

Lower urinary tract symptoms (LUTS) affect more than 60% of men and women aged over 40. Symptoms may be classed as storage, voiding or post-micturition and have a variety of systemic, neurological, drug-related or urological causes. There is growing evidence that metabolic syndrome is linked to LUTS. Initial evaluation of LUTS should follow a structured system, with symptom scores and frequency/volume charts. Several features have been identified as risk factors for progression of LUTS and stratification using these factors can aid in planning management. For example, older age and a high-normal concentration of prostate-specific antigen may suggest a higher risk of progression to acute urinary retention. Many patients with LUTS will require no treatment. For those who do, the initial approach should be conservative, with lifestyle changes; this can be followed where necessary by drug treatment using selective α -adrenoceptor blockers, 5- α reductase inhibitors, antimuscarinics, mirabegron, or a combination of these. Phosphodiesterase-5 inhibitors can also improve symptom scores and quality of life, and may become part of the routine management of LUTS.

Keywords BPH; combination therapy; investigation; LUTS; metabolic syndrome; phosphodiesterase-5 inhibitors; treatment

Introduction and terminology

A significant number of men and women over the age of 40 suffer from troublesome lower urinary tract symptoms (LUTS) (62.5% men, 66.6% women). The explanations for these symptoms are multifactorial and include systemic, neurological, drug-related and urological causes. The term 'lower urinary tract symptoms' does not presume a diagnosis and is therefore preferred over terms used in the past, such as 'prostatism'.¹

LUTS can be subdivided into storage, voiding and post-micturition symptoms (Table 1). Storage symptoms, particularly urgency and nocturia, are the most troublesome, whereas voiding symptoms (e.g. hesitancy, slow stream) lead less frequently to medical consultation, although they are more common overall. However, it is rare for patients to present with one group of symptoms in isolation; the majority will have mixed symptoms, as shown in the EpiLUTS study – an investigation of over 14,000 men, of whom 71% complained of LUTS² (Figure 1).

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Evaluating LUTS

GPs can perform initial assessment, with referral to urologists for specific tests, for complicated cases or after failed medical treatment.³

Investigating LUTS (Table 2)

Clinical assessment of men presenting with troublesome LUTS should comprise:

- a targeted medical history and physical examination, including digital rectal examination (DRE)
- urine dipstick to check for blood, glucose, protein, leucocytes and nitrites
- a validated symptom score (e.g. IPSS)
- a urinary frequency volume chart (FVC).

The 2014 National Institute for Health and Care Excellence (NICE) pathway⁴ suggests that prostate-specific antigen (PSA) testing should be offered to men that have LUTS suggestive of prostatic enlargement, men with an abnormal prostate on DRE, or those who are particularly concerned about prostate cancer. However, there is evidence that PSA can also be a good indicator for risk of progression. Marberger et al. demonstrated that, in men with LUTS a PSA over 1.4 ng/ml was associated with a ninefold increase in risk of acute urinary retention (AUR).⁴ Patient information and counselling before PSA testing are essential.

Renal function tests (serum creatinine and eGFR) are indicated only where there is a clinical suspicion of renal impairment, for instance, in patients with nocturnal enuresis, a palpable bladder, recurrent UTIs or renal tract calculi.³

Frequency volume charts (or bladder diaries) are useful for formulating a diagnosis as well as for monitoring response to treatment. They are helpful in identifying nocturnal polyuria and polyuria due to excess fluid intake. An FVC records the time and volume of each void, while bladder diaries also include measurement of fluid intake. However, FVC are not standardized and some may capture additional information such as use of pads or bladder sensation. The consensus is that, to be sufficiently accurate for diagnosis or monitoring, they should be recorded for at least three complete days.

The international prostate symptom score (IPSS) is a validated tool for the assessment of LUTS. It is not a diagnostic questionnaire but allows stratification of symptom severity into mild (1–7), moderate (8–19) and severe (20+) categories. It is particularly valuable if used pre- and post-treatment to measure the treatment effect. Quality of life (QoL) is assessed in an eighth question, which is the most valuable and is also sensitive to change with treatment.

Flow-rate testing, post-void residual volume (PVR) and urodynamic testing: flow rate can give a probability of obstruction but cannot discriminate between poor detrusor function and bladder outlet obstruction. It is recommended in specialist assessment of LUTS together with PVR measurement, which also has a poor correlation with obstruction.⁵

More specialized assessment of obstruction is carried out using urodynamic (pressure flow) testing. This is the only

Types of urinary symptoms

Storage symptoms

- Frequency
- Nocturia
- Urgency
- Incontinence
- Altered bladder sensation

Voiding symptoms

- Slow stream
- Intermittent stream
- Hesitancy
- Straining
- Splitting or spraying of stream
- Terminal dribbling

Post-micturition symptoms

- Incomplete emptying
- Post-micturition dribble

Table 1

accurate way to discriminate between bladder outlet obstruction, detrusor over-activity and reduced detrusor contractility. Urodynamics should be considered in the significantly older (and younger) patient, those with co-existing neurological disease, patients who have failed surgical treatment, and patients with unusual symptom combinations.

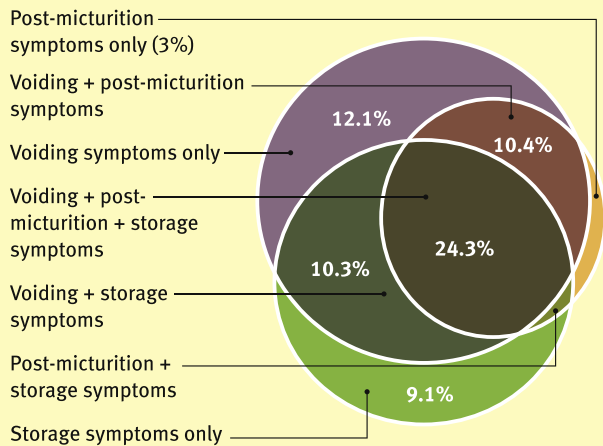
Proportion of types of urinary symptoms in men

Most men have BOTH voiding and storage symptoms

- N = 14,139 men ≥ 40 years old
- 71% reported LUTS

EpiLUTS*

- Voiding symptoms
- Storage symptoms
- Post-micturition symptoms



*Sexton CC et al. BJU Int 2009;103(Supp3):12-23

Figure 1

Causes of urinary symptoms in men

Neurological diseases

- Parkinson's
- Dementia
- Diabetic neuropathy
- Multiple sclerosis

Other systemic diseases

- Diabetes mellitus
- Diabetes insipidus
- Cardiac failure
- Metabolic syndrome

Drugs

- Opioids
- Antimuscarinics (including tricyclic antidepressants, ipratropium bromide)
- Diuretics
- Alcohol
- Caffeine
- Benzodiazepines
- Lithium
- Antipsychotics

Other causes

- Prolapse
- Pelvic mass

Urological causes

- Benign prostatic enlargement
- Urethral strictures
- Calculi
- Bladder and prostate cancer
- Urinary tract infections
- Phimosis
- Meatal stenosis
- Interstitial cystitis

Table 2

Upper tract imaging or cystoscopy is not recommended in the initial evaluation of uncomplicated LUTS.³

Treatment

Several factors drive the decision to treat. These include the severity of the symptoms and their impact on a patient's QoL, the risk of disease progression, the patients' co-morbidities and other complications of the disease.

LUTS should trigger referral to a urologist if they are associated with 'red-flags', such as:

- DRE suggestive of prostate cancer
- elevated age-related PSA
- renal dysfunction
- haematuria
- bladder pain
- recurrent infection
- palpable or percussible bladder
- very severe symptoms.

Conversely, many patients can be reassured and/or treated conservatively with lifestyle modifications, such as avoidance of caffeinated drinks and excessive alcohol, or limitation of fluid

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