

Assessment of lower urinary tract symptoms

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Abstract

Lower urinary tract symptoms (LUTS) encompass a range of symptoms commonly experienced by both men and women. Discrepancies in interpretation require a standardized terminology, with an understanding of the different causations for each symptom. These should replace previous misleading words such as ‘prostatism’. The use of algorithms from evidence-based guidelines limits variations in management and avoids unnecessary investigations. Although symptoms do not predict the underlying pathophysiology, a useful approach is to try and develop a urodynamic diagnosis from the point of taking a history and using appropriate investigations in a logical, step-wise manner to arrive at a working diagnosis.

Keywords Lower urinary tract symptoms; LUTS; prostate; overactive bladder; nocturia; incontinence

Introduction

The term ‘lower urinary tract symptoms’ (LUTS) refers to a symptom complex commonly occurring in both males and females, and may have multiple aetiologies. It is well recognized that symptoms do not correlate well with the underlying pathophysiology, and consequently historic terms such as ‘prostatism’, ‘symptoms of benign prostatic hyperplasia’ and ‘clinical BPH’ have been abandoned and should no longer be used. It must be recognized that the lower urinary tract comprises of a complex functional unit which is comprised of the bladder, bladder neck, prostate in males, the sphincter mechanism controlling the outlet of the bladder, and the urethra. This is subject to a complex interplay of pathophysiological influences that include prostatic enlargement, bladder dysfunction, medication, fluid intake, infection, and extra-urinary tract pathology such as diabetes, and cardiac, renal and neurologic disorders.¹

As there have been discrepancies regarding the interpretation of the various terms used in the past, it is useful therefore to have clarity about the current terminology associated with LUTS:

‘**Benign prostatic hyperplasia**’ (BPH) refers to histologically confirmed hyperplasia of the prostate. This should not be diagnosed by the finding of an enlarged prostate gland on digital rectal examination (DRE) or on ultrasound scanning. The characteristic histological changes of BPH are extremely common and

found in 80% of men aged >80 years.² The prevalence of BPH increases with age and whilst it is often associated with LUTS, only 25–50% of men with BPH have LUTS.¹

‘**Benign prostatic enlargement**’ (BPE) refers to an increase in size of the prostate gland. Only about 50% of men with BPH have BPE.

‘**Bladder outlet obstruction**’ (BOO) is a urodynamically confirmed finding which is characterized by increased detrusor pressure and a reduced urine flow rate.

‘**Lower urinary tract symptoms suggestive of BOO**’ is a term often used to describe a male with predominantly voiding symptoms with an enlarged prostate on DRE. This should not be used without urodynamic confirmation of BOO, and furthermore approximately 50% of men with LUTS do not have BOO.

‘**Overactive bladder**’ (OAB) is defined as urinary urgency, with or without urge incontinence, usually with frequency and nocturia, in the absence of a urinary tract infection or other obvious pathology. Note that this definition applies to both males and females.

‘**Detrusor overactivity**’ (DO) is a urodynamic finding of involuntary detrusor contractions during the filling phase of the bladder. It is found in approximately two-thirds of those presenting with OAB and 50% of those with BOO.

In males, LUTS attributable to benign prostatic hyperplasia (BPH) is a very common problem affecting the ageing male, although obviously BPH represents only one of many causes. The prevalence of LUTS in Europe increases from 14% in men in their fourth decade to >40% in their sixth decade. Assuming an overall prevalence of LUTS of 30%, this would mean that approximately 4 million men aged >40 years have LUTS in the UK.² Bothersome LUTS can occur in up to 30% of men over the age of 65 years.¹ The overlap between LUTS, BOO and BPE is illustrated by Hald’s rings (Figure 1).

Assessment algorithms and guidelines

There are several Clinical Practice Guidelines (CPGs) with regard to the evaluation of LUTS, including those published by the European Association of Urology (EAU), American Urological Association (AUA), the National Institute for Health and Care Excellence (NICE), as well as various national and regional guidelines. The aim of these is to provide an evidence-based framework on which clinicians can base their practice, putting into context the circumstances of the individual patient. Although based on similar evidence, there are variations in the recommendations for the use of diagnostic tests for LUTS. Figure 2 represents the 2015 algorithm published by the EAU, used widely by urologists in the UK.

A review of CPGs concluded that high-quality guidelines have found the evidence base for many diagnostic tests to be not as strong, but nevertheless useful and without which important information may be missed.³ Consequently, whilst considering the evidence for each diagnostic test, the goals of LUTS assessment should be considered:

- To identify the underlying cause of the symptoms.
- To ascertain if treatment is necessary.
- To determine the optimal management option.
- To assess the risk of disease progression.
- To monitor previously instituted management.

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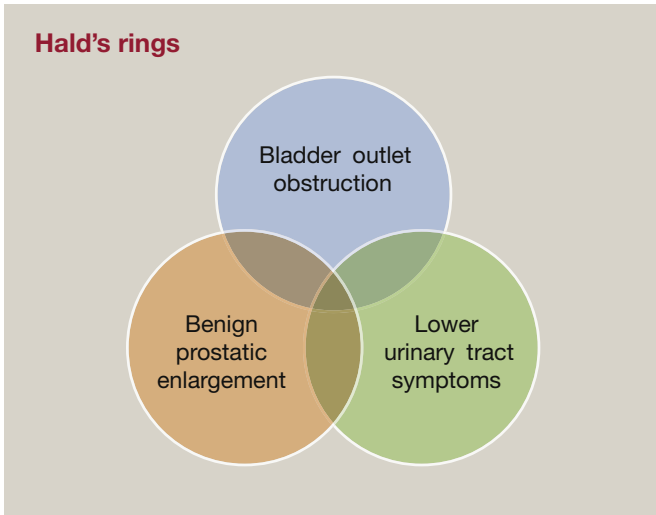
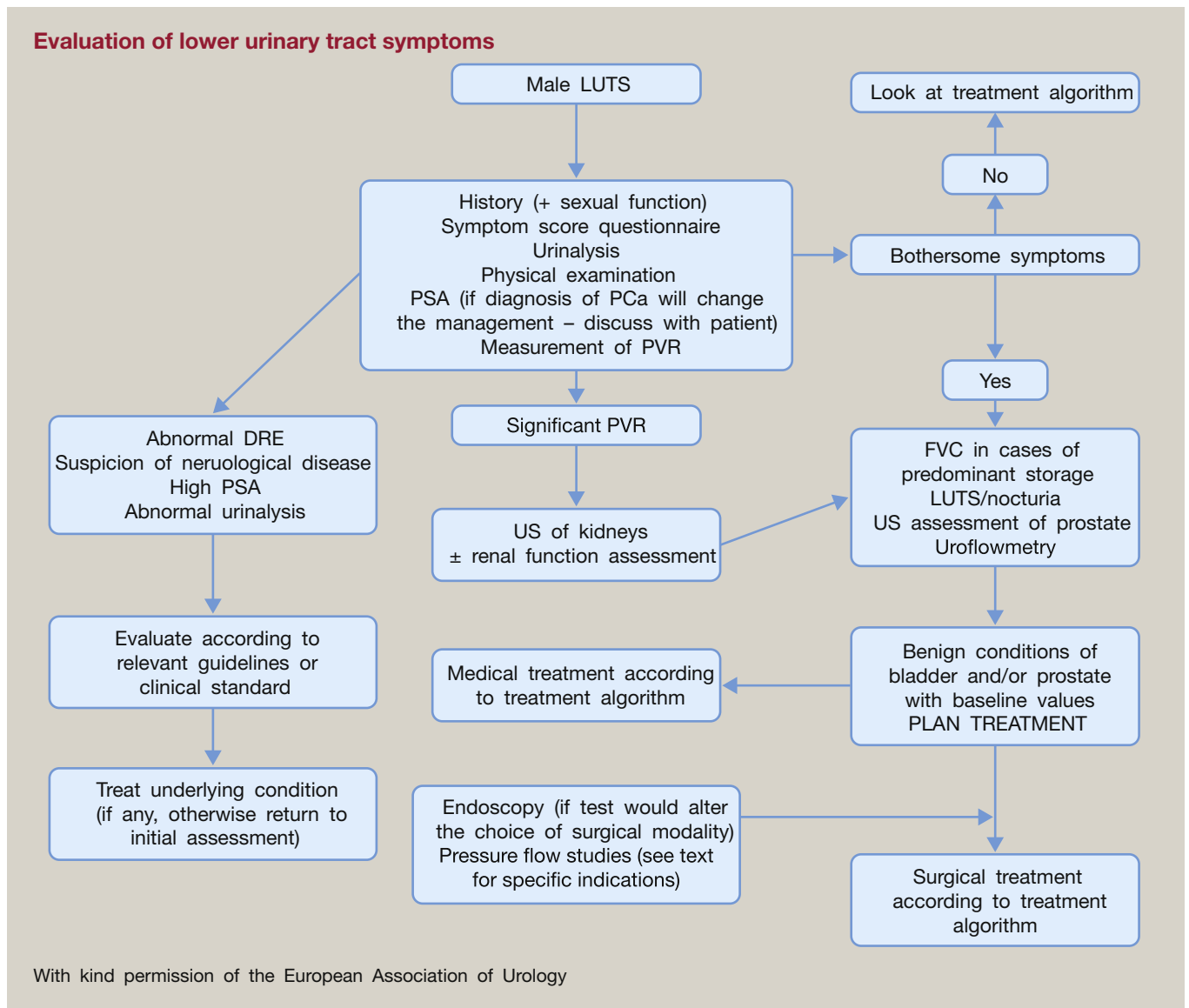


Figure 1

Central to this are the wishes and needs of the patient. NICE guideline recommendations for the diagnosis of LUTS are categorized into initial assessment and specialist assessment. The former is designed to be carried out by any healthcare professional in any setting (e.g. in the community) without specific training in the management of male LUTS. The initial assessment should in most circumstances include the following:

- history including that of sexual function
- physical examination
- assessment of general medical history including associated comorbidities and current medication
- a symptom score questionnaire to assess quality of life and bother
- urinary frequency volume chart
- urinalysis
- serum prostate specific antigen (PSA) if appropriate and after provision of detailed information and obtaining informed consent
- blood tests for renal function in specific situations.



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Figure 2

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