



European Association of Urology



Editorial

Benign Prostatic Hyperplasia and Lower Urinary Tract Symptoms: Research Priorities

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Lower urinary tract symptoms (LUTS) and benign prostatic hyperplasia (BPH) are highly prevalent in men beyond their fourth decade [1–3]. Previously, LUTS were thought to depend on BPH and bladder outlet obstruction (BOO) in men; however, a simple cause-and-effect relationship cannot be established [4]. In fact, benign prostatic enlargement (BPE) with LUTS remains a very common diagnosis in our daily practice. Epidemiologic studies suggest that age, genetic factors, and sexual hormones play major roles as risk factors for BPH; the only known associations for BPH progression are age and prostate volume [1,4]. More recently, metabolic syndrome, detrusor overactivity, prostatic inflammation, cell-signaling disorders, and neurologic, cardiac, and renal dysfunctions have been hypothesized to contribute to the development of LUTS [1–3]. Hence the very common urologic diagnosis of men with BPE and LUTS is likely to be multifactorial and complex. Clinically, this is demonstrated by the fact that most patients with BPE suffer from LUTS, but only some patients presenting with LUTS have clinically significant BPE [4].

Revision of the terminology of LUTS became necessary to reflect our understanding and to improve patient management. But validated instruments aimed at qualifying urinary symptoms have not been implemented as widely as expected. Most recommendations for the use of diagnostic tests evaluating patients with LUTS continue to be based on

safety issues and expert opinion, with a low level of evidence [4,5].

Despite recent advances in the field, some issues related to this condition are still under investigation. A number of issues remain poorly understood in the field of BPH. The pathophysiology of BPH remains a conundrum. Prostate disorders occur as a result of aging, and the metabolic changes associated with aging seem to be important. Despite the current knowledge of risks factors, we do not know why the prostate grows in one man and does not in others and why symptoms develop in some and not in others [1–4]. Aging is associated with an imbalance of sexual hormones, although the exact role in BPH initiation, development, and progression remains obscure [3]. Androgens have a permissive role in BPH, but there is no clear cause-and-effect relationship [1].

Nocturia still needs to be clarified. Storage symptoms are known to be most bothersome, and nighttime increased urinary frequency bothers not only patients but also their partners. Research on nocturia treatment confirms that no therapy is truly effective, and surgery is not better than drugs in reducing the number of voids per night [6–8].

The importance of urodynamics in the assessment of patients with BPH is still under debate. For many years, clinical experience and dogma directed the management of BPH and BOO, but only in the last decade did clinical

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research show that BOO is not necessarily a progressive condition and the outcome of BPH surgery may be independent of the degree of BOO. The question is not whether we need to do urodynamic evaluation in patients with BPH but is the value of the information we obtain from pressure-flow studies [4]. Despite appropriate investigation and surgical management, we continue to have patients who may remain symptomatic after prostatic surgery [9,10].

Urodynamic study is a powerful way to investigate bladder behavior in the storage phase and in the diagnosis of obstruction, but the clinical value of bladder sensation and detrusor dysfunction remains poorly understood [4]. One of the assumptions in this area is that symptoms in patients with BPE are due to BOO, and treatment consists of reducing outlet resistance to a minimum. However, the lowest class in the Schaefer nomogram is not composed of normal individuals but rather of patients who underwent transurethral resection of the prostate, suggesting this is a natural nonobstructed condition [4]. Finally, after 100 yr of BPH surgery, we do not know how much tissue we should remove. Adenectomy removes the adenoma entirely, whereas transurethral surgery leaves a variable degree of luminal patency with no clear association with symptomatic control.

Surgery is a difficult area of clinical research, and surgeons sometimes avoid challenging successful procedures and concepts of management with an evidence-based view. Despite the fact that peer-reviewed literature flourishes, with hundreds of new papers published every year (eg, >300 papers were indexed in PubMed in 2010 dealing with these topics alone), several issues in the field of BPH remain unanswered:

- The role of androgens and estrogens in LUTS due to BPH
- The pathophysiology of nocturia
- The prognostic value of BOO for BPH progression
- The prognostic value of detrusor underactivity and overactivity in the outcome of BPH treatment
- The relationship between prostate debulking and outcome/durability of BPH surgery

Some of the relevant questions in medicine remain unanswered because, in the absence of an economic interest, there is not enough drive to design, initiate, and complete the research needed to address the different issues. The European Association of Urology has recently supported the development of groups of young academic

urologists with the purpose of boosting the research activity in some critical areas of urology and improving academic collaboration among different centers in Europe. Specifically, we were given the task of investigation in the field of BPH and LUTS. We will start by looking at the feasibility of developing a BOO/BPH nomogram and improving diagnostic tools, characterizing BPH management in Europe, and determining the relationship between bladder stones and BPH. We hope our energies will be enough to address some of the issues noted here. We find the task simultaneously daunting and exciting.

Conflicts of interest: The authors have nothing to disclose.

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