Update on AUA Guideline on the Management of Benign Prostatic Hyperplasia

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Purpose: To revise the 2003 version of the American Urological Association's (AUA) Guideline on the management of benign prostatic hyperplasia (BPH).

Materials and Methods: From MEDLINE® searches of English language publications (January 1999 through February 2008) using relevant MeSH terms, articles concerning the management of the index patient, a male ≥45 years of age who is consulting a healthcare provider for lower urinary tract symptoms (LUTS) were identified. Qualitative analysis of the evidence was performed. Selected studies were stratified by design, comparator, follow-up interval, and intensity of intervention, and meta-analyses (quantitative synthesis) of outcomes of randomized controlled trials were planned. Guideline statements were drafted by an appointed expert Panel based on the evidence.

Results: The studies varied as to patient selection; randomization; blinding mechanism; run-in periods; patient demographics, comorbidities, prostate characteristics and symptoms; drug doses; other intervention characteristics; comparators; rigor and intervals of follow-up; trial duration and timing; suspected lack of applicability to current US practice; and techniques of outcomes measurement. These variations affected the quality of the evidence reviewed making formal meta-analysis impractical or futile. Instead, the Panel and extractors reviewed the data in a systematic fashion and without statistical rigor. Diagnosis and treatment algorithms were adopted from the 2005 International Consultation of Urologic Diseases. Guideline statements concerning pharmacotherapies, watchful waiting, surgical options and minimally invasive procedures were either updated or newly drafted, peer reviewed and approved by AUA Board of Directors.

Conclusions: New pharmacotherapies and technologies have emerged which have impacted treatment algorithms. The management of LUTS/BPH continues to evolve.

Key Words: prostatic hyperplasia, urinary retention, adrenergic alpha-antagonists, 5-alpha-reductase inhibitors, behavior therapy, transurethral resection of prostate

Abbreviations and Acronyms

5-ARIs = 5-alpha-reductase inhibitors

BOO = bladder outlet obstruction

BPH = benign prostatic hyperplasia

CAM = complementary and alternative medications

ED = erectile dysfunction

HoLRP/HoLEP/HoLAP = holmium laser resection/enucleation/ablation of the prostate

IFIS = intraoperative floppy iris syndrome

LUTS = lower urinary tract symptoms

PSA = prostate specific antigen

QoL = quality of life

TUIP = transurethral incision of the prostate

TUMT = transurethral microwave thermotherapy

TUNA = transurethral needle ablation of the prostate

TURP = transurethral resection of the prostate

TUVP = transurethral vaporization of the prostate

UTI = urinary tract infection

The complete guideline is available at **www.AUAnet.org/BPH2010**.

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BENIGN prostatic hyperplasia is a histologic diagnosis that refers to smooth muscle and epithelial cell proliferation within the prostatic transition zone.[1] The enlarged gland has been proposed to contribute to lower uri-

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nary tract symptom via at least two routes (1) direct bladder outlet obstruction (static component) and (2) increased smooth muscle tone and resistance (dynamic component). In the management of bothersome LUTS, it is important that healthcare providers recognize the complex interactions of the bladder, bladder neck, prostate and urethra, and that symptoms may result from interactions of these organs as well as the central nervous system. The 2010 BPH Guideline attempts to acknowledge that LUTS represents a broad spectrum of etiologies, and focuses on the management of such symptoms.

LUTS in the aging male can have a marked impact on individual health and society at large.[2,3] Although LUTS secondary to BPH (LUTS/BPH) is not often life-threatening, the impact of LUTS/BPH on quality of life can be significant. Traditionally, the primary treatment goal has been to alleviate bothersome LUTS. More recently, treatment has addressed the prevention of disease progression.[4] This Guideline reviews a number of important aspects in the management of LUTS/BPH including diagnostic tests to identify the underlying pathophysiology and symptom management. Complementary and alternative medications, watchful waiting, and lifestyle issues are addressed. The current literature on the standard surgical options and on minimally invasive procedures is also reviewed.

Recently, the association between LUTS and erectile dysfunction has been clarified. Lifestyle factors – such as exercise, weight gain and obesity – also appear to have an impact on LUTS. We expect these risk factors to grow in importance with the aging of the male population and the obesity epidemic. The expected increase in prevalence will place increased demands on the health system and put a premium on efficient, evidence-based management in both primary and specialty care.

DEFINITIONS AND TERMINOLOGY

For the 2010 Guideline, **the Index Patient** is a male ≥45 years of age who is consulting a qualified healthcare provider for his LUTS. He does not have a history suggesting non-BPH causes of LUTS and his LUTS may or may not be associated with an enlarged prostate gland, BOO, or histological BPH. **Lower urinary tract symptoms** include storage and/or voiding disturbances common in aging men and can be due to structural or functional abnormalities in one or more parts of the LUT or abnormalities of the peripheral and/or central nervous systems that provide neural control of the LUT. LUTS may also be secondary to cardiovascular, respiratory or renal disease.

METHODOLOGY

The 2010 guideline statements were based on a systematic review and synthesis of the literature on current therapies for the treatment of BPH. The methodology followed the same process used in the development of the 2003 Guideline and, as such, did not include an evaluation of the strength of the body of evidence as will be instituted in future Guidelines produced by the American Urological Association. The full Guideline document including methodology can be accessed at http://www.auanet.org/content/guidelines-and-quality-care/clinical-guidelines.cfm.

The guideline statements (indicated as bolded text in this paper) were drafted by the Panel based on evidence and tempered by the Panel's expert opinion. As in the previous Guideline, these statements were graded using three levels of flexibility in their application. A "standard" has the least flexibility as a treatment policy; a "recommendation" has significantly more flexibility; and an "option" is even more flexible.

DIAGNOSTIC EVALUATION OF THE INDEX PATIENT

After review of the recommendations for diagnosis published by the 2005 International Consultation of Urologic Diseases[5] and reiterated in 2009[6], the Panel unanimously agreed that the contents remain valid and reflected "best practices." The diagnostic guidelines can be found at **www.AUAnet.org/BPH2010**.

Basic Management

The algorithm describing basic management classifies diagnostic tests as either recommended (should be performed on every patient during the initial evaluation) or optional (test of proven value in the evaluation of select patients) (fig. 1). In general, optional tests are performed during a detailed evaluation by a urologist. If the initial evaluation reveals the presence of LUTS associated with results of a digital rectal exam suggesting prostate cancer, hematuria, abnormal prostate-specific antigen levels, recurrent urinary tract infection, palpable bladder, history/risk of urethral stricture, and/or a neurological disease raising the likelihood of a primary bladder disorder, the patient should be referred to a urologist for appropriate evaluation before treatment. Baseline renal insufficiency appears to be no more common in men with BPH than in men of the same age group in the general population.

Not Recommended: The routine measurement of serum creatinine levels is not indicated in the initial evaluation of men with LUTS secondary to BPH.