



The Role of General Practitioners in Prescribing Prostate-Specific Antigen Testing for Early Detection and Treatment of Benign Prostate Hyperplasia

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Abstract

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BACKGROUND: Benign prostatic hyperplasia and its clinical manifestation as lower urinary tract symptoms are a major health problem for men over 50 years of age.

AIM: This article aims to demonstrate that general practitioners are in a better position to use prostate-specific antigen testing for identifying men with lower urinary tract symptoms as well as those at risk of disease progression.

METHODS: Thus, they can play a key role in the early detection and diagnosis, as well as in the treatment of men with mild-to-moderate lower urinary tract symptoms who have no evidence of prostate cancer.

RESULTS: The results of studies conducted worldwide show that general practitioners can provide treatment when the intervention of a specialist urologist is not necessary or, guided by their knowledge and clinical judgment, refers the patient to a urologist when the patient's condition warrants it. In this regard, we suggest that primary care for patients with benign prostatic hyperplasia should provide measures for prevention, diagnosis, treatment, and formation of a healthy lifestyle in patients with this type of pathology.

CONCLUSION: This type of medical care can and should be provided by the general practitioner in the primary care setting.

Introduction

Benign prostatic hyperplasia (BPH) is a progressive enlargement of the prostate gland as a result of non-malignant proliferation of stromal and glandular prostate cells [1], [2]. Histologically, BPH is characterized by the presence of discrete nodules in the periurethral zone of the prostate gland [3]. BPH is a socially significant disease that requires early diagnosis and adequate treatment in accordance with the rules of good medical practice. It is an age-related process, with a prevalence of approximately 10% for men in their thirties, 20% for men in their forties, 50–60% for men in their sixties, and a progressive 80–90% for men in their 70s and older [4]. There are other factors that have been described in the scientific literature but not proven to contribute to BPH. These include sexual activity, alcohol use, genetic factors, race, and others [5], [6].

The most common clinical manifestations of BPH are known as lower urinary tract symptoms (LUTSs) which include increased daytime frequency, urgency, nocturia, urinary incontinence, weak flow, urinary intermittency, hesitancy, straining, terminal dribble, incomplete bladder emptying, and post-terminal

dripping [7], [8]. Although LUTSs have a negative impact on men's quality of life, they often fail to or delay seeking medical advice and proper treatment. Therefore, it is imperative that general practitioners (GPs), who, on the one hand, are trusted by patients and have chosen them as their personal physicians, and, on the other hand, are expected to know their own patients well, should routinely ask about the patient's problems related to the function of the urinary tract, especially in men over the age of 50, and order a prostate-specific antigen (PSA) test in case of any complaints from the patient. Thus, GPs can play a key role in the early detection and diagnosis of BPH. They may also be beneficial in the treatment of men with mild-to-moderate lower urinary tract symptoms who have no evidence of prostate cancer.

In the context of the COVID-19 pandemic, which continues today, more and more attention in the scientific literature is being paid to the role of general practitioners in detecting problems related to lower urinary tract symptoms. Being familiar with their patients' family history, GPs can detect risk factors for the development of BPH, provide treatment when the intervention of a specialist urologist is not necessary or refer the patient to a urologist when the patient's condition warrants it [2].

The primary aim of this review article was to demonstrate that GPs can actively contribute to the early diagnosis and treatment of BPH in the following ways:

1. Facilitate access to PSA testing and the necessary care for men over 50 years of age;
2. Improve long-term outcomes of managing lower urinary tract symptoms and halting the progression of BPH;
3. Avoid more complex surgical consultations in cases where the management of primary care in the person of the GP is sufficient.

Research Method

A bibliographic survey of scientific literature and articles from proven, comprehensive, and accurate scientific medical databases was conducted on the various aspects (medical, social, etc.) of the development of benign prostatic hyperplasia and the role of GPs in the early detection, diagnosis, and treatment of the disease. We searched Medline, Web of Science, PubMed, Cochrane Library, electronic scientific libraries (Amedeo electronic library, CyberLeninka, websites of medical periodicals) and in electronic dissertation libraries (dissercat.com, medical-diss.com), etc. Search terms included "prostatic hyperplasia," "benign simple hyperplasia," "quality of life in patients with BPH," "role of general practitioners," "prostate-specific antigen," and "lower urinary symptoms." Over 900 literary sources were found and screened for relevancy to the topic and duplicacy. The most relevant sources

Table 1: The most important information that should be considered by general practitioners in the advisement and monitoring of patients with benign prostatic hyperplasia

Tips for treating BPH in the primary care setting
Prostate size is important in determining the risk of progression and the need for therapy. However, prostate size is difficult to measure by both primary care physicians and urologists. PSA is an important marker of prostate cancer risk in men with LUTS. Elevated PSA (> 1.5 ng/mL) in men with BPH and without prostate cancer may predict risk of progression. Inform patients taking 5-ARIs about their PSA values at follow-up. This information allows them to objectively evaluate the action of 5-ARI, even after 3 months onward. PSA should decrease by about 50% in men taking 5-ARIs. Inadequate reduction in PSA after 6–12 months of 5-ARI therapy should prompt referral to urology.
Alpha-blockers act quickly but do not reduce the risk of progression.
5-ARIs work slowly but reduce the risk of progression.
5-ARIs work better in men with large prostates (< 30 cc) and higher PSA levels (< 1.5 ng/mL).
Combination therapy works better than monotherapy.
5-ARIs and tamsulosin may reduce ejaculate volume.
Reduced ejaculation can be used as a marker to demonstrate to men that 5-ARI is working.
The patient should be informed that this change in volume should not reduce sexual pleasure and is reversible.
Patients should understand that stopping the growth of their prostate is important to prevent the likelihood of needing surgery and bleeding down the road. Although only a minority of men will actually need to have a TURP or experience significant bleeding, taking a 5-ARI greatly reduces this risk and as a result is appreciated by many men.
If the patient is doing well on combination therapy, trial discontinuation of the alpha-blocker is worth considering.
A urological consultation is warranted if cancer is suspected, medical therapy is ineffective, and/or complications are present.
Inform patients that 5-ARI therapy for most men is a lifelong treatment and that the use of 5-ARIs is as preventive care, not treatment of an urgent or urgent problem. It is always better to prevent something than to fix a problem in a hurry.
Men may be told that their hair may become slightly thicker as a side effect of their 5-ARI treatment.

BPH: Benign prostatic hyperplasia, PSA: Prostate-specific antigen, LUTS: Lower urinary tract symptom.

and their conclusions were summarized in the present review article.

Results

PSA testing

The analysis of the scientific literature showed that the prostate-specific antigen (PSA) is an established biomarker for prostate cancer, but it can also be used in the diagnosis of BPH, providing important information about disease progression [9]. Men with higher serum PSA levels and no clinical evidence of prostate cancer have a higher risk of future prostate growth, worsening of symptoms and flow rate, and surgery [10]. It is imperative that the benefits and risks of PSA testing be discussed with the patient. Any patient who has symptoms of BPH, or who is considering medical or interventional therapy for BPH and would be a candidate for prostate cancer treatment, should have a serum PSA test [11]. The test is also helpful in deciding the most appropriate therapy. PSA gives a more accurate reflection of prostate volume, which correlates with the risk of symptom progression [12]. A serum PSA value of 1.5 ng/mL or more is indicative of a prostate volume of at least 30 cc. Determination of PSA with 5-ARI helps to establish a reference point before treatment [13]. Any patient with an age-related elevated serum PSA or whose level has increased significantly over time (more than 0.75 ng/mL per year) should be referred to an urologist. Based on the scientific literature on PSA, we can make the following recommendation to GPs:

Recommendation 1

- a) Start PSA testing when the patient is 50 years of age.
- b) If there is a family history of prostate cancer (first-degree relative) or if the patient belongs to a high-risk group, this test may be assigned earlier.
- c) Refer to urologist patients with elevated serum PSA or whose level has increased significantly over time (more than 0.75 ng/mL per year).

Assessment of LUTS

There are several methods for assessing the severity of symptoms in patients with BPH. The best known are the international prostate symptom scale (IPSS) and the AUA Symptom Severity Index. The first BPH-specific questionnaire for HRQoL, published in 1988, measures patients' abilities to perform daily activities, levels of BPH-related discomfort, and levels

of worry about their health [14]. The AUA Symptom Severity Index uses additional questionnaires to measure patients' concerns about general health and mental health and the impact of BPH on patients' quality of life (QoL) [15].

In 1993, Lukacs and colleagues developed a BPH-specific QoL measure consisting of 20 questions related to the physical, mental, social, and general impact of BPH. In 1997, this questionnaire was shortened to nine questions, which is more practical and remains as useful as the original [16].

The IPSS, published in 1994, uses virtually the same seven questions as the AUA Symptom Severity Index, but adds one question about the extent to which patients consider their symptoms bothersome. This question is now called "*distress rating*," although it was previously known as the health-related quality of life (HRQoL) index [17].

Each of these questionnaires, sometimes intended for self-questioning, allows the patient to share about his symptoms and the impact of his complaints on his quality of life. They simplify our ability to recognize the true lower urinary tract symptoms (LUT) associated with BPH, help us differentiate storage from bladder emptying symptoms, stratify the extent, and monitor the subjective impact of the problem. The results of a recent international European study on nocturia and nocturnal polyuria, presented at EAU 16 in Munich, suggest that patients self-reporting nighttime and daytime urine volume can serve as a voiding diary and be used to assess the condition of the patients [18].

It needs to be emphasized that the majority of urologists agree that tests and questionnaires can be administered by a general practitioner, and ideally urologists should be available for more comprehensive assessments such as urinary flow assessment, imaging and endoscopic examinations for abnormal conditions, hematuria, or for patients who do not respond well to initial medical treatment [19].

Extrapolating from the reviewed sources on LUTS, we offer the following recommendation to GPs:

Recommendation 2

- a) Use the IPSS or AUA Symptom Severity Index in assessing the severity of LUTS in patients with BHP and prostate problems, especially when they are around or over 50 years of age or have a family history of prostate diseases.
- b) Interpret LUTS scores in conjunction with the PSA test result and the patients' genetic and other predispositions for prostate diseases.
- c) In cases of elevated PSA and moderate-to-severe LUTS refer the patient to a urologist.

Lifestyle changes

Experts are of the opinion that the first treatment option for patients with well-tolerated and uncomplicated LUTS should be lifestyle advice. A complex pathological condition called "metabolic syndrome" resulting from poor eating habits, sedentary behavior, and excessive alcohol consumption, has been identified in epidemiological studies that demonstrate that risk factors associated with lifestyles play a major role in the occurrence of LUTS and also erectile dysfunction in aging men [20]. Key points of this approach are reduced fluid intake, especially caffeine and alcohol, getting used to a relaxed and possibly double emptying of the bladder, maximum avoidance of constipation, and taking medications such as diuretics over time [21]. All this could be done without traumatizing the GP patient. Patients who complain of nocturia and who are on diuretic therapy for heart failure, hypertension, renal impairment, or other causes should be advised to take their pill in the late afternoon [22]. Thus, most of the diuretic effect will occur in the hours before bed, resulting in less urine production at night and less disruption to sleep and quality of life.

Recommendation 3

- a) GPs can provide informed recommendations about relevant dietary and lifestyle changes that can help alleviate the frequency and severity of LUTS.
- b) In cases with increased PSA and moderate-to-severe LUTS, a referral to a urologist should be made.

Table 1 summarizes the most important information that should be considered by general practitioners in advising and monitoring patients with BPH.

Discussion and Conclusion

Nowadays, there are various options for the treatment of BPH, using medications, conventional or minimally invasive surgical treatments [13], [23], [24]. No other medical specialty has been overwhelmed with more new therapeutic developments in the past 20 years than prostate diseases. This is mainly due to the fact that new insights into the origin of this condition are being gained through continuous research. Yet, the role of general practitioners in the diagnosis and monitoring of patients with BHP and LUTS has not been given due attention [25], [26]. Moreover, studies have shown that urologists are more likely than primary care physicians to perform PSA tests and assess LUTS severity in men with prostate problems [26].

This is unfortunate because GPs have unique opportunities to screen for BPH and, if necessary, initiate medical therapy that can alleviate symptoms, delay disease progression, and reduce the likelihood of BPH surgery [27]. Primary care physicians can detect inflammatory processes of the prostate that can later lead to BPH [28], [29]. They also have the capacity to refer men to urologists when a more precise diagnosis is needed in cases with elevated PSA levels and moderate-to-severe LUTS [30].

The COVID-19 pandemic highlighted the critical role of primary care physicians in relieving the hospital system and providing a large portion of the care for patients who require monitoring, early detection of symptoms, diagnosis, and referral to specific specialists as needed. Primary medical care is required for patients with benign prostatic hyperplasia to provide measures for prevention, diagnosis, treatment, and the development of a healthy lifestyle. The general practitioner can and should provide this type of care.

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