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Benign Prostatic Hyperplasia: A Review

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ABSTRACT

Benign Prostatic Hyperplasia (BPH) is a noncancerous increase in size of the prostate gland. The symptoms of BPH are mostly lower urinary tract symptoms and these include waking up to urinate at night, urgency, frequency, incontinence of urine and inability to empty the bladder completely and weak urine stream. Nocturia in particular has been found to have negative effect on quality of sleep, energy or vitality. Men realizes they have prostate enlargement when they start experiencing lower urinary tract symptoms. Several new biomarkers for individuals with raised PSA concentrations or those diagnosed with prostate cancer are likely to identify individuals who can be spared aggressive treatment.

Keywords: prostate, men, PSA, Cancer and benign prostatic hyperplasia

INTRODUCTION

Benign Prostatic Hyperplasia (BPH) is a noncancerous increase in size of the prostate gland [1-4]. The prostate gland is a small gland that is situated below the bladder and lies anteriorly to the rectum. Its main function is to secrete an alkaline fluid that comprises 70% of seminal volume that lubricates and provide nutrients for the sperms respectively. Benign prostatic hyperplasia progresses with age [5]. The disease process has a prevalence of approximately 10% among men who are thirty, 20% among those in their forties, 50–60% among the sixty-year-olds, and 80–90% among 70-year-old men and above. Prostate enlargement among Ghanaian men between the ages of 40 and 70 is reported to be 64% [6]. The symptoms of BPH are mostly lower urinary tract symptoms (LUTS) and these include waking up to urinate at night, urgency, frequency, incontinence of urine and inability to empty the bladder completely and weak urine stream [7]. Nocturia in particular has been found to have negative effect on quality of sleep, energy or vitality [8]. Men realizes they have prostate enlargement when they start experiencing lower urinary tract symptoms (LUTS) [9].

Etiology of BPH

Benign prostatic hyperplasia is believed to occur as a natural process of ageing but the actual mechanism is not fully understood but it is believed to be under hormonal influence [10]. The cause is still not well known but there are risk factors associated with the development of the condition. These include; age, race, androgens, diet, genetics and growth factors [11-14]. As there are no known causes of BPH, there are no known ways to prevent it. However, lifestyle changes may help to stop the symptoms of BPH getting worse and may even help to improve symptoms.

Pathophysiology of BPH

As previously described, BPH refers to the proliferative process of the prostate leading to enlargement of the gland that results from an increase in the cell number and size as well as from inhibition of apoptosis [15]. This can lead to voiding dysfunction from urethral compression [15]. From a histological perspective, the proliferative process affects both the stromal and epithelial elements of the prostate but to highly varying degrees depending on the individual patient [15]. Pathological BPH develops in the transition zone of the prostate when there is hyperplasia in epithelial and stromal growth that coalesces into microscopic and macroscopic nodules in the prostate gland [15]. With enlargement, there is increased pressure from tissue expansion confined by the capsule, which may lead to compression of the prostatic urethra or bladder neck and result in LUTS [15]. These anatomical and functional changes may, in turn, induce significant alterations in the morphology and physiology of the urothelium and detrusor muscle, which may also contribute to the bothersome LUTS [15-16]. Prostate tissue remodeling in the transition zone with BPH is observed by seven modification factors [16].

Clinical signs and symptoms of BPH and its effect on quality of life

The symptoms of (BPH) are manifested by the lower urinary tract symptoms example nocturia, urine incontinence etc and sometimes accompanied by retention of urine, blood in the urine and urinary tract infection. This can have serious health issues among the elderly men if strategies are not developed to manage it [17].

Diagnosis of BPH

Diagnosis of BPH can be made based on; history taking, physical examination, digital Rectal examination, simple investigations to exclude urinary tract infection, renal damage, ultrasound of the prostate gland, prostate Specific Antigen (PSA) testing [9]. The diagnosis of BPH is typically established when men present for lower urinary tract symptoms (LUTS) and following a medical work-up to eliminate other potential differential etiologies (Pearson & Williams, 2014). Diagnosis relies on documentation of compatible clinical symptoms along with supportive findings of an enlarged prostate on a DRE and then either a positive response to therapy or evidence from further diagnostic testing, including potentially biopsy of the prostate or medical imaging, to rule out other potential causes and confirm BPH [18]. During the physical examination, the Canadian Urological Association recommends DRE as an important tool for assessing the prostate gland size, shape and symmetry, although it must be stressed that the DRE only provides a subjective evaluation of the gland [19]. It is important to mention that BPH is often diagnosed based on clinical signs and that in the majority of cases a histological diagnosis is not obtained prior to attempting treatment. This would be the case in the majority of patients unless there is a family history of PCa or other reasons to be suspicious of PCa based on the initial findings [20]. The history for patients with BPH typically reveals signs of lower urinary tract symptoms and possibly sexual or erectile dysfunction [19]. The onset, duration of symptoms must be considered as well as the use of any medications that could cause LUTS [19]. Other diseases affecting the bladder, prostate, and urethra may also need to be ruled out [19].

CONCLUSION

Majority of patients with BPH have poor quality of life. The educational level, receive support, sleep disturbance affecting partner relationship were the factors found to be significantly associated with the perceived good quality of life of BPH patients. Interference with sleep would lead to poor quality of life. Support from family and friends help to improve quality of life. There would therefore be the need for proper management of nocturia and encouragement of full support to ensure good quality of life among BPH patients.

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