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BENIGN PROSTATIC HYPERPLASIA: A CASE STUDY USING ALPHA BLOCKER AND 5-ALPHA REDUCTASE INHIBITORS COMBINATION THERAPY

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RESEARCH ARTICLE

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Abstract: Benign prostatic hyperplasia is a common disease seen in males above 40 years as a result of progressive enlargement of the prostate. The prostate is usually the size of a pea at birth, increases slowly until puberty and then rapidly until 20 years of age to about adult size. In some cases, it continues enlarging above 40 years leading to benign prostatic hyperplasia. If properly controlled, the patient can continue the daily activities normally, but if left to progress, it can lead to complications which may lead to surgery. In the case presentation of the patient with lower urinary tract symptoms, he was initially managed for urinary tract infections with persistent symptoms, and was later managed for benign prostatic hyperplasia medically, thereby showing significant improvement with amelioration of symptoms.

Keywords: *Prostate, Benign Prostatic Hyperplasia, Prostate-Specific Antigen, Therapy*

Introduction

The prostate is a walnut-sized exocrine gland of the male reproductive system which secrets white alkaline fluid seen as a constituent of semen. The prostate has three zones: peripheral, central, and transition zones.

Benign Prostatic Hyperplasia is the non-malignant enlargement of the prostate, mainly the transition zone. It is usually seen in males above 40 years. When living long enough, most men will develop some histologic features consistent with benign prostatic hyperplasia (Roehrborn et al 2002). They usually develop lower urinary tract symptoms which may be obstructive (hesitancy, straining, weak flow, urinary retention, incontinence) or more bothersome irritative symptoms (frequency, urgency, urge incontinence, nocturia)

In the medical management of benign prostatic hyperplasia, mainly involves two classes of drugs: alpha-blockers and the 5-alpha reductase inhibitors. The alpha-blockers are the most commonly used class. It acts by blocking the alpha-mediated contraction of the prostatic smooth muscle cells and bladder neck (Lepor et al 2002), hence leading to an increase in urine flow rate. They include tamsulosin, doxazosin, prazosin, terazosin, etc (Foglar et al 1995). The use of tamsulosin was based on the fact that it does not interfere with blood pressure control and has a low potential to cause vasodilation (Gerald et al 2002). An appropriate dose will improve the score by 3 to 6 points; however, a significant proportion of this improvement is due to the so-called placebo effect (Djavan et al 2004). The 5-alpha reductase inhibitors act by inhibiting the enzyme 5-alpha reductase necessary in the conversion of testosterone. They include finasteride and dutasteride. It was reported that among men with symptoms of urinary obstruction and prostatic enlargement, treatment with finasteride for four years reduces symptoms and prostate volume, increases urinary flow rate, and reduces the possibility of surgery and acute urinary retention (John et al 1998).

Case Study

A 51 year old male soldier weighing 64kg presented with two year progressive symptoms of lower abdominal pain, dysuria, nocturia, weak erection, and urge incontinence. Prior to this visit, he had been to a peripheral center where he was treated for urinary tract infections with antibiotics. The antibiotics include Tab ciprofloxacin 500mg bd, Tab metronidazole 400mg tds, and Tab diclofenac 50mg bd, all for one week but symptoms persisted necessitating presentation to us for expert management.

He is not known to be hypertensive, diabetic, epileptic, or

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asthmatic. Genotype is AA. There is no history of surgery in the past. However, there was similar history in his family, particularly the father. He takes alcohol occasionally but doesn't take tobacco in any form. There is no history of allergy to any drug.

On examination, he was calm, afebrile, not pale, not dehydrated, no pedal edema. The vital signs were normal with the blood pressure of 120/80mmHg, pulse rate of 82 beats per minute, the temperature of 37.6°C, and respiratory rate of 22 cycles per minute. Digital Rectal Examination done revealed an enlarged prostate with smooth and symmetrical edges.

The laboratory investigations requested and done include the full blood count, random blood glucose, renal function test which were all said to be normal. Ultrasound showed an enlarged prostate but the prostate-specific antigen (PSA) level was 2.8ng/ml which is normal.

Following counseling, he began medical management with the combination therapy of alpha-blockers and the 5-alpha reductase inhibitors. He took tab tamsulosin 0.4mg daily combined with tab finasteride 5mg daily. Within two months of treatment, he reported significant symptom amelioration.

Discussion

The patient had bothersome symptoms and desired treatment. The risk of progression was low because of the small prostate size and low serum PSA level.

In the diagnosis and management of cases of benign prostatic hyperplasia, it is important and necessary to ensure the early presentation of the patient to the hospital as well as early diagnosis of the patient and subsequent commencement of the combination therapy needed for its management. This will help ensure that the condition is well handled and does not progress further to cause the patient more harm in the future.

This is in keeping with other research works. Symptom improvement is typically noted within two to four weeks of initiating alpha-blocker therapy (Logan et al 2005)

It is also in keeping with the fact that the drug combination therapy has been associated with reduction by more than 50% in the risk of acute urinary retention as well as surgical intervention (Roehrborn et al 2004)

Conclusion

The diagnosis and management of benign prostatic hyperplasia at an early stage will lead to a better lifestyle for the patient as well as reduce health expenses. The tamsulosin-finasteride combination has been found to be effective in its management.

References

1. Andriole G. L., & Kirby R (2002): Safety and Tolerability of the Dual 5-alpha Reductase Inhibitor Dutasteride in the Treatment of Benign Prostatic Hyperplasia. *European J Urology 44*(1): 82-88
2. Djavan B., Chapple C., Milani S., &Marberger M. (2004) State of the art on the efficacy and tolerability of alpha 1 adrenoceptor antagonists in patients with lower urinary tract symptoms suggestive of benign prostatic hyperplasia. *Urology 64*: 1081-1088
3. Foglar R., Shibata K., Horie K., Hirasawa A.,& Tsuyimoto G. (1995): Use of recombinant alpha-adrenoreceptors to characterise subtype selectivity of drugs for the treatment of prostatic hypertrophy. *EUR J Pharmacol 288*:201-207
4. Lepor H.,& Lowe F. C. (2002): Evaluation and nonsurgical management of benign prostatic hyperplasia. *In Campbell's Urology. 8th edition.* Edited by Walsh P. C., Retail A. B., Vaughan E. D., Wein A. J. Philadelphia: WB Saunders; 1337-1378
5. Logan Y. T., &Belgeri M. T(2005). Monotherapy versus combination drug therapy for the treatment of benign prostatic hyperplasia. *Am J Geriatr Pharmacother 3*(2):103–114.
6. McConnell J. D., Bruskewitz R., Walsh P., Andriole G., Lieber M., Holtgrewe H. L., Albertsen P., Roehrborn C. G., Nickel J. C, Wang D. Z., Taylor A. M., &Waldstreicher J. (1998): The Effect of Finasteride on the Risk of Acute Urinary Retention and the need for Surgical Treatment among men with Benign Prostatic Hyperplasia. *N Engl J Med338*: 552-563
7. Roehrborn C. G., Marks L. S., Fenter T., et al (2004). Efficacy and safety of dutasteride in the four year treatment of men with benign prostatic hyperplasia. *Urology63*: 709-715
8. Roehrborn C.,& McConnell J. (2002) Etiology, Pathophysiology, Epidemiology and Natural history of Benign Prostatic Hyperplasia. In: Walsh P., Retail A., Vaughan E., Wein A., editors. *Campbell's Urology. 8th edition*. Philadelphia: Saunders. pp. 1297-1336.