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Original Article

Patterns of Alpha Blocker Prescription in Benign Prostatic Hyperplasia in Bangladesh: A Paper-Based Survey

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Abstract

Background: Benign prostatic hyperplasia (BPH) is the progressive enlargement of prostate gland which is an age-related process with a prevalence of about 50.0% of men age between 51 to 60, and the number jumps to 70.0% among men 60 to 69 and around 80.0% of men over 70 years of age. The treatment of BPH depends on the severity of symptoms which aims to improve symptoms, lower the risk of progression and improve quality of life. **Objective:** The aim of this survey was to understand the prescription pattern of alpha blockers in the treatment of BPH among clinicians (urologist) of Bangladesh. **Methodology:** This cross-sectional questionnaire-based survey was conducted between December 2022 to November 2023 in the Department of Pharmacology & Therapeutics at US-Bangla Medical College, Narayangonj, Dhaka, Bangladesh. Data regarding the management of BPH using α-blockers were filled by participants and collated for data analysis using appropriate statistical test. **Results:** Total of 105 urologists' responses were collected and the result was analyzed. According to the survey, 92.9.68% of urologists felt that severity of the BPH symptoms is most common deciding factor for medical management of BPH. For the pharmacological management of BPH patients, around 84.4% opted for α blockers monotherapy as a preferred option. Among α blockers, they preferred tamsulosin as first line therapy for management of BPH patients. In this survey, 82.1% believed that tamsulosin offers highest persistence rate among commonly prescribed α blockers. Looking at the switching to a second α-blocker, 70.4% of urologists felt that tamsulosin shows the highest return rate following initiation of a second α-blocker. More than 70% of participant felt that favorable efficacy or tolerability of tamsulosin is due to its highest persistence and highest return rates. Despite of high tolerability the most frequently complained adverse effect of tamsulosin is retrograde ejaculation in 56% cases. **Conclusions:** Tamsulosin is the most commonly preferred and prescribed α-blocker by Bangladesh clinicians due to its favorable efficacy or tolerability. *[Journal of Current and Advance Medical Research, January 2025;12(1):16-21]*

Keywords: Benign prostatic hyperplasia; lower urinary tract symptoms; α-blocker; tamsulosin; persistence rate; return rate; bladder outlet obstruction

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Introduction

Benign prostatic hyperplasia (BPH), also called prostate enlargement. It is the most common urological problem affecting older men, characterized by the enlargement of the prostate gland, which may lead to urinary obstruction and various lower urinary tract symptoms[1]. BPH is a complex disease from the etiological and pathogenesis point BOO may present as lower urinary tract symptoms (LUTS) which affect health related quality of life (QoL) and psychological wellbeing[2]. The prevalence of BPH is rising in Bangladesh, the burden of BPH is becoming increasingly significant, necessitating a thorough understanding of treatment paradigms within the healthcare system[3]. Severity of symptoms determine the treatment of BPH, watchful waiting, medical therapy, surgical therapy are the approaches of management benign prostatic hyperplasia[4].

Among the therapeutic options available for managing BPH, alpha-adrenergic antagonists (alpha blockers) have gained prominence due to their efficacy in alleviating urinary symptoms by relaxing the smooth muscles in the prostate and bladder neck[5]. Drugs such as tamsulosin, alfuzosin, doxazosin, terazosin and silodosin are frequently prescribed, however, there exists considerable variability in their prescription patterns influenced by factors such as clinician preference, patient characteristics, and local healthcare guidelines[6]. Despite the clinical evidence supporting the role of alpha blockers in the management of BPH, comprehensive studies examining the specific prescribing habits in Bangladesh are limited.

A better understanding of the prescription trends can provide insights into the accessibility and acceptance of these medications, and help identify potential gaps in treatment, especially in the context of local healthcare practices[6]. Despite the clinical evidence supporting the role of alpha blockers in the management of BPH. Therefore, this article aims to explore the current prescribing patterns of alpha blockers for BPH in Bangladesh, drawing upon data from various healthcare facilities across the country. In Bangladesh, clinically four $alpha_1$ blockers are used, namely, terazosin, tamsulosin, alfuzosin, and silodosin. To assess medication adherence, adverse effects, effectiveness, and outcomes, analysis of α-blocker prescription patterns is important[7].

Through this study, we aimed to contribute to the existing literature by shedding light on the therapeutic landscape of BPH management in a rapidly evolving healthcare environment. This survey was aimed to understand the prescription pattern of alpha blockers in the treatment of BPH by urologist of Bangladesh.

Methodology

Study Settings and Population: This cross-sectional questionnaire-based survey was conducted among Bangladeshi urologists. The study place was Department of Pharmacology & Therapeutics at US-Bangla Medical College, Narayangonj, Dhaka, Bangladesh. The duration of this survey was from December 2022 to November 2023. The urologists practicing independently and, in the government, and corporate hospitals in 12 metropolitan cities across 8 divisions of BD, like Dhaka, Chittagong, Rajshahi, Khulna, Barisal, Sylhet, Rangpur, and Mymensingh, as well as Upazila subdivisions like Cumilla, Noakhali, Faridpur, Shariatpur, Bagura, Patuakhali were included in this survey. Patients were also required to have over 180 days of prescription within one year of their first prescription of an alpha-blocker. Patients were excluded from the study if they were prescribed another BPH medication, such as a 5-alpha-reductase inhibitor (5-ARI) or an anticholinergic. We also excluded patients who had comorbidities such as prostate cancer (ICD-10, C61), bladder cancer (C679), neurogenic bladder (N319), urethral stricture (N350, N358, N359), ureteral stone (N201, N202), or BPH-related procedure, which included transurethral surgery (TUR-P, laser vaporization.

Study Procedure: A paper-based questionnaire (Google form) survey (Figure 1) was provided to all study participants via email, where Bangladesh Association of Urological Surgeons (BAUS) played an effective role by providing the email ID of urologists all over the country. The overall information regarding the approach to the management of BPH patients and the usage of alpha blockers in these patients was collected. The filled survey forms were returned by the clinicians via e-mail.

Questions that Asked: These were the questions that were asked to the participants. There are several questions, such as how commonly do you encounter benign prostatic hyperplasia (BPH)patients in your clinical practice? Which factor(s) do you consider most for the medical management of BPH patients, like the size of the prostate, severity of symptoms, serum PSA level, co-existing overactive bladder disorder, or any other? For the medical management of BPH

patients, which of the following pharmacological treatment options (either mono or combination therapy) do you prefer most: α-blocker, 5-alpha-reductase inhibitors (5-ARI), PDE 5 inhibitors, or Antimuscarinic? Which of the following α-blockers do you prefer most in the management of BPH patients, like tamsulosin, alfuzosin, silodosin, doxazosin, or terazosin? Do you agree that "Tamsulosin offers the highest persistence rate compared to other α-blockers" among BPH patients? Do you agree that "Tamsulosin offers the highest return rate compared to other α-blockers" among BPH patients? Do you feel that the favorable efficacy/tolerability of Tamsulosin is responsible for the highest persistence and the highest return rates compared to other α-blockers? Despite high tolerability, which is the most frequently complained adverse effect of tamsulosin, like light headedness, sleepiness, Retrograde ejaculation, stuffy nose, and vertigo.

Statistical Analysis: Statistical analysis was performed by Windows based software named as Statistical Package for Social Science (SPSS), versions 22.0 (IBM SPSS Statistics for Windows, Version 22.0. Armonk, NY: IBM Corp.). Continuous data were expressed as mean, standard deviation, minimum and maximum. Categorical data were summarized in terms of frequency counts and percentages. Chi-square test was used for comparison of categorical variables and Student t test was applied for continuous variables. Every efforts were made to obtain missing data. A two-sided P value of less than 0.05 was considered to indicate statistical significance. Differences between case and control were tested.

Ethical Consideration: All procedures of the present study were carried out in accordance with the principles for human investigations (i.e., Helsinki Declaration 2013) and also with the ethical guidelines of the Institutional Research Ethics Committee. Formal ethics approval was granted by the local ethics committee. Participants in the study were informed about the procedure and purpose of the study and confidentiality of information provided. All participants consented willingly to be a part of the study during the data collection periods. All data were collected anonymously and were analyzed using the coding system.

Results

Total 105 urologists participated in this survey. The results of the survey were subjective based on the clinicians' clinical experience and practice in BD. In our survey, about 50.0% of urologists believed that the prevalence of BPH is very common, and 42.9% common in our country. This is reflecting a significant public health problem of BPH among people of Bangladesh (Figure I).

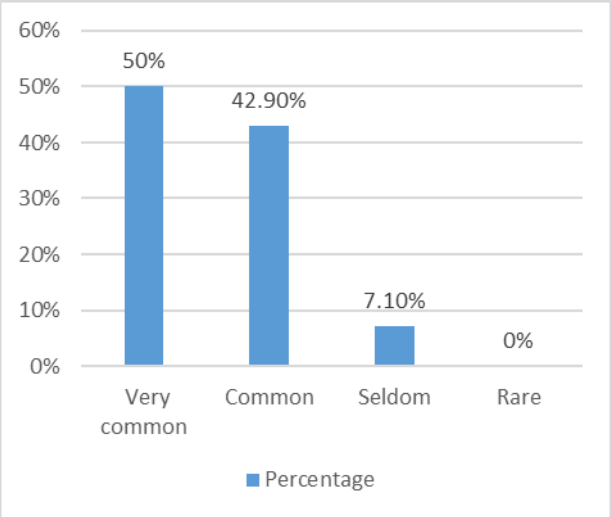

Figure I: Frequency of BPH Patients Encountered in Clinical Practice

Several factors should be considered while managing these patients. According to the survey, 92.9% of the clinicians believed that the severity of the BPH symptoms is the most common deciding factor for medical management of BPH patients, followed by the size of the prostate (7.1%) (Figure II).

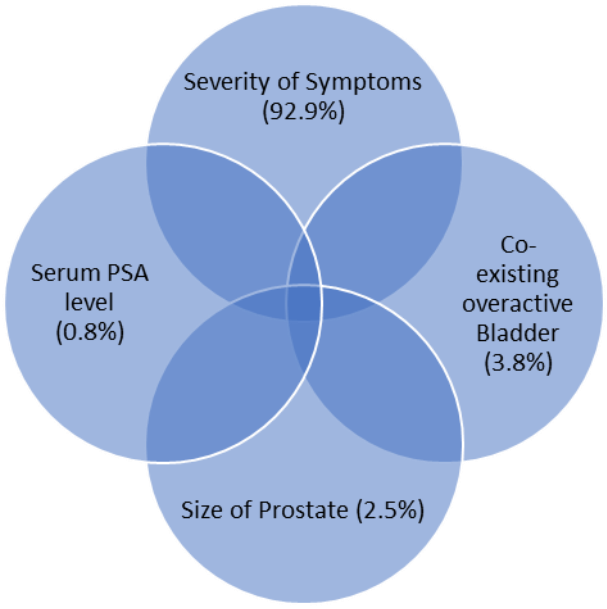

Figure II: Clinical Factors Considered during BPH Management

Among the available pharmacological management options for BPH, 84.4% urologists favoured α-blocker monotherapy as a preferred option, followed by a combination of α-blockers and 5α-reductase inhibitors (13.01%), antimuscarinic 0 .36%, and PDE5 inhibitors 0.23% (Figure III).

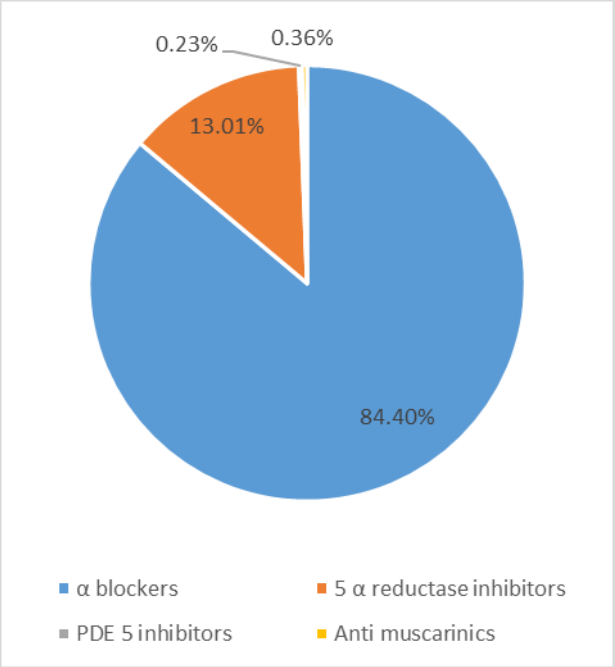

Figure III: Preferred Class of Drugs for BPH Management

Around 82.1% of urologists believed that tamsulosin offers the highest persistence rate compared to other α-blockers, disagree 4.5%. Among patients who switched to a second α-blocker, 70.4% of urologists felt that tamsulosin shows the highest return rate following initiation of a second α- blocker when compared with other α-blockers (Table 1).

Table 1: Level of Agreement of Clinicians on Highest Persistence Rate and Return Rate with Tamsulosin Compared with Other Alfa-Blockers

Agreement of Clinicians	Agree	Disagree	Neither agree nor disagree	No Response
Persistence rate of tamsulosin	82.1%	4.5%	12.5%	0.9%
Return rate with tamsulosin	70.4%	9.5%	18.5%	1.6%

Despite high tolerability, the most frequently complained adverse effect of tamsulosin is retrograde ejaculation in about 56.0% cases, where light-headedness (32.0%), vertigo (4.0%), sleepiness (2.0%), stuffy nose (2.0%), and no response 4% (Figure IV).

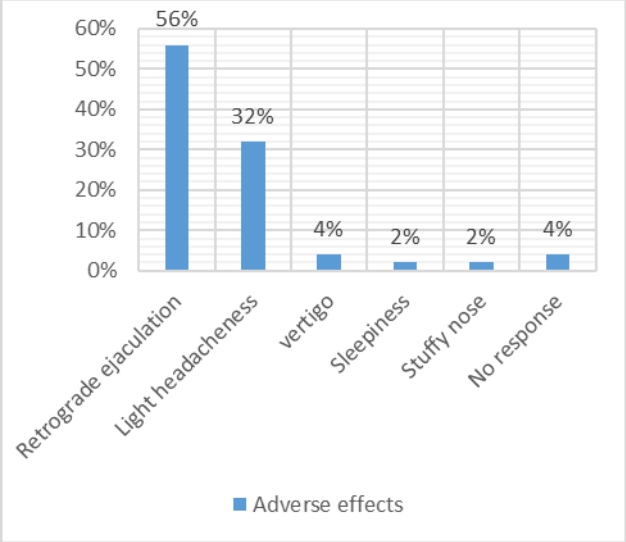

Figure IV: Response to Most Frequently Occurring Adverse Effects Caused by Tamsulosin

Discussion

BPH, which is also known as an old man's disease due to the increase in life expectancy, the number of elderly patients with BPH is also increasing rapidly[8]. Similarly, in our survey, around 92% of urologists believed that cases of BPH are very common or common in BD. BPH is a chronic progressive disease that is associated with serious long-term complications, such as urinary retention, refractory urinary retention, recurrent UTI, renal insufficiency, and recurrent gross hematuria.

Patients with BPH experience a significant deterioration in QoL due to the severity of symptoms[9]. Among available factors, the severity of symptoms was the most common deciding factor for the management of BPH patients in our survey. This result was similar to prostate research on behaviour and education (PROBE) survey conducted by Emberton et al[10], Moon et al[15], Tomar et al[16]. In contrast to our result, the size of the prostate and severity of BPH symptoms were the most common (92.9%) factors governing the combination therapy for medical management of BPH patients in a study conducted by Sabnis et al[11], Moon et al[15] and Tomar et al[16].

Our study shows that 84.4% preferred α-blockers as first choice treatment, while 13.0% clinicians prescribed 5α-reductase inhibitors in combination with α-blockers. This result does not comply with a

study conducted by Sabnis et al[11] and Tomar et al[16]. This is consistent with the current clinical guidelines as well as practice recommendations in most countries[12-14]. Thus, the current management is appropriately focused on a rapid relief of symptoms. Among the α-blockers, tamsulosin was the most commonly prescribed α-blocker in our study. This result was similar to a study conducted by Sabnis et al[11] and Tomar et al[16]. This may be attributable to the older and most trusted drug, lower cost, as well as easy availability of tamsulosin across the country.

In our survey, around 82.1% of urologists claimed that tamsulosin offers "the highest persistence rate" among α-blockers, and around 70.4% of clinicians believed that tamsulosin offers "the highest return rate" following initiation of a second α-blocker when compared with other α-blockers. Our findings were approximately close to a study conducted by Moon et al[15] and Tomar et al[16]. This reflects the patient satisfaction with use of tamsulosin in BPH management. In our survey, more than 70.0% of clinicians believed that the favourable efficacy/tolerability ratio of tamsulosin is responsible for the highest persistence and return rates compared with other α-blockers.

Based on the patient's own experience with the effects and side effects of the medication, it has been reported by a urologist that Tamsulosin, a medication for benign prostatic hyperplasia (BPH), can cause ejaculatory dysfunction as a side effect in 56.0% of patients, including reduced ejaculate volume and retrograde ejaculation, where semen goes into the bladder instead of out of the body. Most patients are more concerned about sexual dysfunction rather than other side effects, such as dizziness and vertigo.

Based on findings, it can be concluded that tamsulosin offers better efficacy, safety, and tolerability for the BPH management. This has been reflected in a survey, where 70.4% of clinicians believed that the favourable efficacy or tolerability of tamsulosin is responsible for the highest persistence and the highest return rates compared to other α-blockers.

The study has some limitations. First, the responses collected were subjective and may have so called possibility of response bias. Secondly, it did not include detailed clinical information such as prostate volume, symptom score (International Prostate Symptom Score), uroflowmetry, or residual volume, which may influence the choice and response to medication. Third, the study design was close ended questionnaires which may have impact on the final results. Despite these limitations, this survey helps clinicians to choose most appropriate α-blocker in their real clinical practice for the management of BPH patients.

Conclusion

BPH and ensuing LUTS is a significant health issue affecting millions of men. There are enormous gaps in knowledge; therefore, there are also significant opportunities for discovery. Many unanswered questions exist, including but not limited to the role of inflammation, metabolic dysfunction, obesity, and environmental factors in etiology, as well as the role of behavior modification, self-management, and evolving therapeutic algorithms in both the prevention and progression of disease. The burden of BPH is high among our population. Most of our clinicians preferred α-blockers as first-choice treatment for BPH management, either as monotherapy or in combination with 5α-reductase inhibitors. Among the α-blockers, tamsulosin was most commonly prescribed by clinicians due to its favourable efficacy or tolerability as reflected by its highest persistence and highest return rates. In addition to the existing options for monotherapy, combination therapies can also be considered. When prescribing combination therapy, costs, adverse effects, and possible drug interactions must be assessed and taken into account. It is also important to continuously follow patients to monitor their compliance and the adverse effects of the drugs.

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Conflict of Interest
The authors have no conflicts of interest to disclose

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Data Availability
Any inquiries regarding supporting data availability of this study should be directed to the corresponding author and are available from the corresponding author on reasonable request.

Ethics Approval and Consent to Participate
Ethical approval for the study was obtained from the Institutional Review Board. As this was a prospective study the written informed consent was obtained from all study participants. All methods were performed in accordance with the relevant guidelines and regulations.

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