Section: Urology

Original Research Article

CLINICAL PROFILE AND REAL-WORLD USE OF ALPHA-BLOCKERS IN MEN WITH BENIGN PROSTATIC HYPERPLASIA: A ONE-YEAR RETROSPECTIVE OUTPATIENT STUDY FROM A GOVERNMENT GENERAL HOSPITAL IN SOUTHERN INDIA

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ABSTRACT

Background: Aim: Benign prostatic hyperplasia (BPH) is a common cause of lower urinary tract symptoms (LUTS) among ageing men. Although alpha-blockers are widely used as first-line medical therapy, real-world evidence regarding their prescribing patterns, treatment outcomes, and tolerability in Indian government healthcare settings remains limited. This study aimed to describe the clinical profile of men with BPH and evaluate the real-world use, outcomes, and documented adverse effects of alpha-blocker therapy. **Materials and Methods:** This retrospective observational study included consecutive men aged ≥40 years with clinically diagnosed BPH who attended the Urology Outpatient Department of a tertiary government teaching hospital in Southern India between January and December 2025. Patients receiving tamsulosin, silodosin, or alfuzosin with complete baseline and follow-up records were included. Demographic characteristics, International Prostate Symptom Score (IPSS), peak urinary flow rate (Qmax), prostate volume, prescribed alpha-blocker, clinician-recorded symptomatic response, follow-up IPSS, and documented adverse drug reactions were analysed. A reduction of ≥3 points in IPSS was considered clinically meaningful. The primary analysis was descriptive, and change in IPSS was evaluated using an exploratory paired analysis. **Results:** Among 221 men (mean age 63.7 years), 91.9% had moderate and 8.1% severe symptoms; mean baseline IPSS was 15.2, mean prostate volume 44.4 mL, and mean Qmax 10.6 mL/s. Tamsulosin was the most prescribed agent (82.8%), followed by silodosin (14.0%) and alfuzosin (3.2%). Documented adverse drug reactions were observed in 49 patients (22.1%) and Ejaculatory dysfunction in 28 patients (12.6%), while dizziness was documented in 21 patients (9.5%). No serious adverse drug reactions were recorded. On follow-up, clinicians recorded improvement in 78.7% of patients; however, the mean IPSS change was small (15.2 to 14.4; mean fall 0.8 points), and only 5.0% achieved a ≥3-point reduction — a marked discordance between the global rating and the symptom score. **Conclusion:** In routine outpatient practice, tamsulosin was the predominant alpha-blocker prescribed for men with BPH, and clinician-recorded symptomatic improvement was common. However, clinically meaningful improvement based on IPSS was observed in only a small proportion of patients. Alpha-blocker therapy was generally well tolerated, with no serious adverse reactions documented. These findings emphasize the importance of incorporating standardized symptom assessment into routine follow-up to objectively evaluate treatment response.

INTRODUCTION

Benign prostatic hyperplasia (BPH) is one of the most prevalent benign conditions affecting ageing men and represents a major cause of lower urinary tract symptoms (LUTS) worldwide.[1] The prevalence of histological BPH increases progressively with advancing age, affecting

approximately 50% of men by the sixth decade of life and up to 80–90% of men older than 80 years.[2] As global life expectancy continues to rise, the burden of BPH-associated LUTS is expected to increase substantially, resulting in significant impairment of quality of life, increased healthcare utilization, and considerable socioeconomic impact.

Lower urinary tract symptoms secondary to BPH include urinary frequency, urgency, nocturia, weak urinary stream, intermittency, hesitancy, straining, and a sensation of incomplete bladder emptying.[3] Although BPH is a benign condition, persistent symptoms can adversely affect sleep, daily functioning, psychological well-being, work productivity, and overall health-related quality of life. Progressive bladder outlet obstruction may also predispose patients to complications such as acute urinary retention, recurrent urinary tract infection, bladder calculi, hematuria, and deterioration of renal function if left untreated.[4]

The initial evaluation of men presenting with LUTS suggestive of BPH is guided by recommendations from the European Association of Urology (EAU) and the American Urological Association (AUA).[5] Routine assessment includes a detailed medical history, physical examination including digital rectal examination, symptom assessment using the International Prostate Symptom Score (IPSS), urinalysis, and selected investigations such as uroflowmetry and ultrasonographic estimation of prostate volume and post-void residual urine when clinically indicated. Among these tools, the IPSS remains the most widely validated instrument for quantifying symptom severity and monitoring treatment response in both clinical practice and research.[6]

Alpha-adrenergic receptor antagonists (alpha-blockers) are recommended as first-line pharmacological therapy for men with moderate-to-severe LUTS attributable to BPH who do not have absolute indications for surgery.[7] These agents improve urinary flow and reduce symptom severity by relaxing smooth muscle within the prostate, bladder neck, and prostatic urethra without substantially reducing prostate volume. Tamsulosin, silodosin, and alfuzosin are among the most frequently prescribed alpha-blockers because of their rapid onset of action, favorable safety profile, and proven efficacy demonstrated in randomized controlled trials and meta-analyses8. Nevertheless, differences in prescribing practices often reflect local drug availability, institutional formularies, physician preference, and patient affordability, particularly in resource-constrained public healthcare systems.

Although numerous randomized clinical trials have established the efficacy of alpha-blockers, evidence generated under controlled trial conditions may not fully represent routine clinical practice. Real-world observational studies are increasingly recognized as an important complement to clinical trials because they reflect heterogeneous patient populations, everyday prescribing behaviour, treatment adherence, and outcomes observed under routine healthcare delivery. Such evidence is particularly relevant in low- and middle-income countries where healthcare resources, patient follow-up, and access to medications differ substantially from those in highly controlled research settings.

Published real-world data describing the demographic profile of men with BPH, patterns of alpha-blocker prescribing, symptom severity, uroflowmetric characteristics, adverse effects, and treatment outcomes from government teaching hospitals in India remain limited9. Government hospitals cater to large rural and semi-urban populations, where delayed healthcare-seeking behaviour, socioeconomic constraints, and limited availability of newer pharmacological agents may influence disease presentation and therapeutic decision-making. Understanding these real-world patterns is essential for evaluating current clinical practice and identifying opportunities to improve standardized patient assessment and follow-up.

The present study was therefore undertaken to describe the demographic and clinical characteristics of men with BPH attending the Urology Outpatient Department of Government Medical College and Government General Hospital, Ongole, during January to December 2025. Specifically, the study aimed to evaluate baseline symptom severity using IPSS, uroflowmetry findings, prostate volume, prescribing patterns of alpha-blockers, documented adverse effects, and treatment outcomes observed during routine outpatient follow-up. In addition, the study explored the relationship between clinician-assessed symptomatic improvement and changes in IPSS recorded during follow-up, thereby providing real-world evidence on the management of BPH in a government teaching hospital serving predominantly rural and semi-urban communities.

MATERIALS AND METHODS

2.1 Study Design and Setting

This retrospective observational study was conducted in the Department of Urology, Government Medical College and Government General Hospital, Ongole, Andhra Pradesh, India, a tertiary care government teaching hospital serving predominantly rural and semi-urban populations. The study involved a retrospective review of outpatient medical records of men diagnosed with benign prostatic hyperplasia (BPH) who attended the Urology Outpatient Department between **1 January 2025 and 31 December 2025**.

The study was designed and reported in accordance with the **Strengthening the Reporting of Observational Studies in Epidemiology (STROBE)** guidelines for observational studies[10].

2.2 Study Population

The study population consisted of adult male patients presenting with lower urinary tract symptoms (LUTS) secondary to clinically diagnosed benign

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prostatic hyperplasia who received medical treatment with an alpha-adrenergic receptor antagonist during the study period.

Medical records were screened consecutively to minimize selection bias.

2.3 Inclusion Criteria

Patients were eligible if they fulfilled all of the following criteria:

- Male patients aged 40 years or older.
- Clinical diagnosis of benign prostatic hyperplasia based on clinical evaluation and ultrasonographic evidence of prostate enlargement.
- Presence of lower urinary tract symptoms.
- Prescribed an alpha-blocker (tamsulosin, silodosin, or alfuzosin).
- Availability of complete baseline clinical records, including:
  - International Prostate Symptom Score (IPSS)
  - Peak urinary flow rate (Qmax)
  - Ultrasonographic prostate volume
  - Follow-up clinical assessment.

2.4 Exclusion Criteria

Patients were excluded if they had:

- Histologically confirmed or clinically suspected carcinoma of the prostate.
- Previous prostate surgery.
- Neurogenic bladder dysfunction.
- Long-term indwelling urinary catheter.
- Concomitant treatment with 5-alpha reductase inhibitors during the study period.
- Incomplete medical records or missing key study variables.

2.5 Sample Size

Because this was a retrospective record-based observational study, no formal sample size calculation was performed. All consecutive patients fulfilling the eligibility criteria during the study period were included.

A total of **221 patients** met the inclusion criteria and constituted the final study cohort.

2.6 Data Collection

Data were extracted from hospital outpatient records using a standardized data extraction form specifically designed for the study.

The following variables were collected:

Demographic Variables

- Age

Clinical Variables

- Baseline International Prostate Symptom Score (IPSS)
- IPSS severity category
- Peak urinary flow rate (Qmax)
- Prostate volume measured by ultrasonography

Treatment Variables

- Alpha-blocker prescribed
- Drug dosage

Outcome Variables

- Clinician-recorded symptom improvement
  - Follow-up IPSS
- Documented adverse drug reactions

Each patient was assigned a unique study identification number to maintain confidentiality before data analysis.

2.7 Outcome Measures

Primary Outcomes

The primary outcomes were:

- Demographic and clinical profile of patients with BPH.
- Prescribing pattern of alpha-blockers.
- Frequency of documented adverse drug reactions.
- Clinician-recorded symptomatic improvement during follow-up.

Secondary Outcome

The secondary outcome was the change in International Prostate Symptom Score (IPSS) between baseline and follow-up.

A reduction of **≥3 points** in IPSS was considered to represent clinically meaningful improvement, consistent with previously validated minimal clinically important difference estimates[11].

2.8 Definitions

Lower urinary tract symptom severity was classified according to IPSS[12]:

- Mild: 0–7
- Moderate: 8–19
- Severe: 20–35

Peak urinary flow rate (Qmax) was obtained using uroflowmetry performed during routine clinical care.

Prostate volume was measured using transabdominal ultrasonography.

Clinician-rated improvement represented the treating urologist's overall clinical assessment documented during follow-up.

2.9 Statistical Analysis

Data were entered into Microsoft Excel (Microsoft Corporation, Redmond, WA, USA) and verified for completeness before analysis.

Continuous variables were assessed for completeness and summarized as mean ± standard deviation (SD) or median with interquartile range (IQR), depending on their distribution.

Categorical variables were summarized as frequencies and percentages.

The primary analysis was descriptive.

As an exploratory post hoc analysis, baseline and follow-up IPSS values were compared using a paired Student's t-test. Because this comparison was not specified in the original study protocol, the results should be interpreted as hypothesis-generating rather than confirmatory.

A two-sided **P value <0.05** was considered statistically significant.

2.10 Ethical Considerations

The study protocol was reviewed and approved by the **Institutional Ethics Committee (IEC), Government Medical College and Government General Hospital, Ongole**, (IEC Application No. IEC/GMC-OGL/435/2026; approval dated 28 April 2026).

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The study involved retrospective analysis of anonymized medical records without any direct patient contact or alteration of patient management. The Institutional Ethics Committee granted a waiver of informed consent because the study involved minimal risk and utilized de-identified routinely collected clinical data.

The study was conducted in accordance with the ethical principles of the **Declaration of Helsinki**.

RESULTS

3.1 Baseline Demographic and Clinical Characteristics

A total of **221 patients** fulfilled the eligibility criteria and were included in the final analysis. The mean age of the study population was **63.7 ± 9.7 years**. The majority of patients (**140, 63.3%**) belonged to the **60–79-year** age group.

The mean baseline International Prostate Symptom Score (IPSS) was **15.2 ± 3.8**, with a median of **14** (interquartile range [IQR], 13–16). Based on symptom severity, **203 patients (91.9%)** had moderate lower urinary tract symptoms (IPSS 8–19), whereas **18 patients (8.1%)** had severe symptoms (IPSS 20–35). No patient presented with mild symptoms.

The mean prostate volume measured by ultrasonography was **44.4 ± 9.0 mL**, and the mean peak urinary flow rate (Qmax) was **10.6 ± 1.0 mL/s**.

The baseline demographic and clinical characteristics are summarized in **Table 1**.

3.2 Symptom Severity

Moderate lower urinary tract symptoms constituted the predominant clinical presentation in this cohort. Of the **221 patients**, **203 (91.9%)** were classified as having moderate symptoms, while **18 (8.1%)** had severe symptoms according to the International Prostate Symptom Score. No patient was classified as having mild symptoms which represents the usual late presentation our setting.

The overall mean baseline IPSS was **15.2 (SD 3.8; median 14)**, indicating a clinically significant symptom burden within the study population.

3.3 Baseline Uroflowmetry and Prostate Volume

Baseline uroflowmetry demonstrated a **mean peak urinary flow rate (Qmax) of 10.6 (SD 1.0)**. The mean prostate volume measured by ultrasonography was **44.4(SD 9.0; range 30-86)**. The very narrow spread of recorded Qmax values is flagged later as a limitation of how the data were captured.

Baseline uroflowmetry and prostate volume measurements are summarized in **Table 1**.

3.4 Prescribing Patterns of Alpha-Blockers

Three alpha-blockers were prescribed during the study period.

Tamsulosin 0.4 mg was prescribed to **183 patients (82.8%)**, making it the most frequently prescribed alpha-blocker. **Silodosin 8 mg** was prescribed to **31 patients (14.0%)**, while **Alfuzosin 10 mg** was prescribed to **7 patients (3.2%)**.

Each medication was prescribed at its standard therapeutic dose. The prescribing pattern is summarized in **Table 2**.

3.5 Treatment Outcomes

At follow-up, clinicians documented symptomatic improvement in **174 patients (78.7%)**, whereas **37 patients (16.7%)** showed no documented change in symptoms. Worsening of symptoms was recorded in **10 patients (4.5%)**.

The mean IPSS decreased from **15.2(3.8)** at baseline to **14.4 (4.1)** at follow-up, representing a mean reduction of **0.8 points**.

Only **11 patients (5.0%)** achieved a reduction of **≥3 points** in IPSS, representing the predefined threshold for clinically meaningful improvement.

Treatment outcomes according to the prescribed alpha-blocker are summarized in **Table 3**.

3.6 Adverse Drug Reactions

Documented adverse drug reactions were observed in **49 patients (22.1%)**.

The most frequently documented adverse event was **ejaculatory dysfunction**, occurring in **28 patients (12.6%)**, followed by **dizziness** in **21 patients (9.5%)**.

No serious adverse drug reactions requiring hospitalization, emergency intervention, or permanent discontinuation of therapy were documented during the study period.

The distribution of documented adverse events according to the prescribed alpha-blocker is presented in **Table 4**. Because of the unequal sample sizes among treatment groups, particularly the small alfuzosin subgroup (n = 7), no comparative statistical analysis of adverse-event frequencies between individual alpha-blockers was performed.

3.7 Discordance between global rating and IPSS change (secondary observation)

The outcome observed during the study before and after initiation of alpha blocker is a very interesting one. We observed that 78.7% of men improved clinically, yet only 11 (5.0%) had actually fallen 3 or more IPSS points, and among those rated improved the average drop was just 1.0 point (Figure 2). This finding demonstrates a marked discordance between clinician-reported improvement and standardized symptom score response. A post data collection test (not pre-specified) found the small baseline-to-follow-up difference statistically significant (paired t-test, $p < 0.001$) but clinically trivial.

3.8 Exploratory Analysis of Clinician-Reported Improvement and IPSS Response

An exploratory comparison demonstrated discordance between clinician-reported symptomatic improvement and changes in the International Prostate Symptom Score.

Although **174 patients (78.7%)** were documented as clinically improved during follow-up, only **11 patients (5.0%)** achieved a clinically meaningful reduction of **≥3 points** in IPSS.

Comparison of baseline and follow-up IPSS values using a paired Student's *t*-test demonstrated a statistically significant reduction (**P < 0.001**).

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However, the magnitude of improvement was modest, with a mean reduction of **0.8 points**.
The distribution of IPSS changes and the relationship between clinician-reported improvement and symptom score response are illustrated in **Figures 1–3**.

Table 1: Demographic and clinical profile of the cohort (N = 221). IPSS, International Prostate Symptom Score; IQR, interquartile range; Qmax, peak urinary flow rate; SD, standard deviation

Characteristic	Value	n (%) / range
Patients, n	221	—
Age, years, mean (SD)	63.7 (9.7)	42–85
40–49 years	15	6.8%
50–59 years	56	25.3%
60–69 years	78	35.3%
70–79 years	62	28.1%
≥80 years	10	4.5%
Baseline IPSS, mean (SD)	15.2 (3.8)	median 14 (IQR 13–16)
Moderate symptoms (IPSS 8–19)	203	91.9%
Severe symptoms (IPSS 20–35)	18	8.1%
Prostate volume, mL, mean (SD)	44.4 (9.0)	30–86
Qmax, mL/s, mean (SD)	10.6 (1.0)	

Table 2: Prescribing patterns of alpha-blockers (N = 221)

Alpha-blocker	Dose	n	%
Tamsulosin	0.4 mg	183	82.8%
Silodosin	8 mg	31	14.0%
Alfuzosin	10 mg	7	3.2%
Total	—	221	100%

Table 3: Treatment outcomes by prescribed agent. Values are mean (SD) unless stated. The "≥3-pt drop" column applies the reference threshold for clinically perceptible improvement; "Improved" is the clinician global rating

Agent (n)	Baseline IPSS	Follow-up IPSS	Mean IPSS reduction	≥3-point IPSS reduction, n(%)	Clinician - recorded Improvement, n(%)
Tamsulosin (183)	14.9 (3.4)	14.1 (3.7)	+0.81 (0.96)	10 (5.5%)	144 (78.7%)
Silodosin (31)	16.9 (5.4)	16.3 (5.6)	+0.68 (0.98)	1 (3.2%)	23 (74.2%)
Alfuzosin (7)	13.0 (1.6)	12.4 (1.6)	+0.57 (0.79)	0 (0%)	7 (100%)
All (221)	15.2 (3.8)	14.4 (4.1)	+0.79 (0.96)	11 (5.0%)	174 (78.7%)

Table 4: Documented adverse effects by agent, n (% within agent). *Recorded as retrograde/ejaculatory dysfunction. Totals are of the whole cohort (N = 221)

Adverse effect	Tamsulosin	Silodosin	Alfuzosin	Total
None documented	151 (82.2%)	17 (54.83%)	4 (57.1%)	172 (77.8%)
Dizziness	13 (7.1%)	5 (16.1%)	3 (42.9%)	21 (9.5%)
Ejaculatory dysfunction*	19 (10.3%)	9 (29.0)	0	28 (12.6%)
Any adverse effect	32 (17.4%)	14 (45.1%)	3 (42.9%)	49 (22.1)

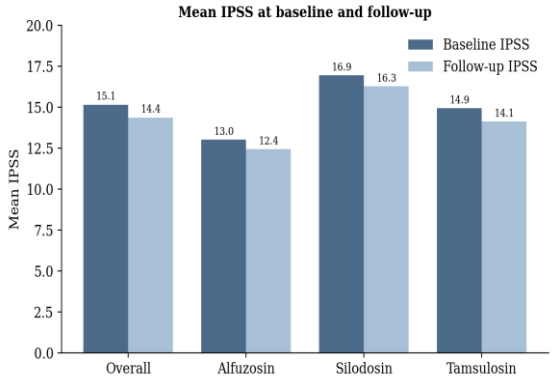

Figure 1: Mean IPSS at baseline and follow-up, overall and by prescribed agent

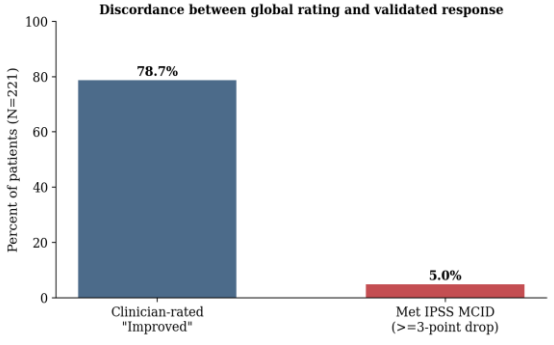

Figure 2: Secondary observation: clinician global rating of "improved" (78.7%) versus the proportion meeting a ≥3-point IPSS reduction (5.0%), N = 221.MCID: Minimal Clinically Important Difference

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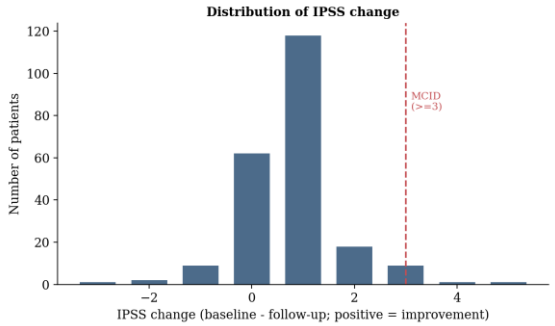

Figure 3: Distribution of individual IPSS change (baseline minus follow-up). Positive values indicate improvement; the dashed line marks the 3-point reference threshold

DISCUSSION

This one-year review from our outpatient based records describes how men with prostatomegaly presented, and how alpha-blockers were used at our Government General Hospital in OPD setting which serves a largely rural and semi-urban population. Most men who come to us are in their sixties, with moderate symptoms, modestly enlarged prostates, and reduced flow rates —a clinical profile commonly encountered in government tertiary-care hospitals serving predominantly rural and semi-urban populations. Tamsulosin accounted for the majority of our prescriptions, with silodosin and alfuzosin reserved for a minority, and the drugs were well tolerated: adverse effects were noted in roughly one man in nine, and none were serious.

This tamsulosin dominated prescription is no surprise, since it is the most commonly available alpha-blocker in our hospital setting. The side effects we saw also fit what is known of these drugs, with ejaculatory dysfunction showing up mainly with the less uroselective agents like Silodosin. Together these observations from us answer the study's primary questions and have given a clear-eyed picture of routine practice in a setting the literature seldom reaches.

The mean age of 63.7 ± 9.7 years observed in our cohort is consistent with the established epidemiology of BPH2. Contemporary European Association of Urology (EAU) guidelines recognize BPH and LUTS as age-related conditions whose prevalence increases substantially after the fifth decade of life. The predominance of patients in the sixth and seventh decades in our study therefore reflects the typical demographic profile of men seeking treatment for symptomatic BPH in routine clinical practice.

More than 90% of patients presented with moderate LUTS, with a mean baseline IPSS of 15.2 ± 3.8. This distribution is consistent with current guideline recommendations that reserve pharmacological therapy, particularly alpha-blockers, for men with bothersome moderate-to-severe LUTS who do not have absolute indications for surgery.[13] The baseline clinical characteristics of our cohort therefore represent the patient population most commonly managed medically in outpatient urological practice. The mean prostate volume (44.4 ± 9.0 mL) and mean peak urinary flow rate (10.6 ± 1.0 mL/s) observed in the present study are compatible with bladder outlet obstruction secondary to BPH. Current EAU guidance recommends the use of validated symptom scores together with uroflowmetry, prostate volume assessment, and other selected investigations to establish baseline disease severity and assist in therapeutic decision-making.[14] Our routine assessment protocol was therefore consistent with internationally accepted recommendations.

Tamsulosin was prescribed to 82.8% of patients, making it the predominant alpha-blocker in our institution. Current international guidelines recognize tamsulosin, silodosin, and alfuzosin as effective first-line pharmacological options for men with moderate-to-severe LUTS attributed to BPH.[15] Although these agents have broadly comparable efficacy for symptom relief, differences in prescribing frequency within routine practice may reflect institutional prescribing patterns, medication availability, physician preference, and patient-related factors rather than differences in clinical effectiveness alone. Because the present study was observational and not designed to compare individual alpha-blockers, no conclusions regarding comparative efficacy can be drawn.

Clinician-recorded symptomatic improvement was documented in 78.7% of patients, suggesting that most patients experienced subjective benefit following initiation of alpha-blocker therapy. Nevertheless, only 5.0% of patients achieved a reduction of three or more IPSS points, a threshold frequently regarded as the minimum clinically important difference.[11] Although the paired analysis demonstrated statistical significance, the absolute magnitude of improvement was modest. This finding emphasizes the distinction between statistical significance and clinical significance, highlighting the importance of incorporating validated symptom assessment tools into routine follow-up rather than relying exclusively on physician judgement or subjective patient impressions.

Several factors may explain this observation. In routine outpatient practice, treatment response is often documented according to the patient's overall perception of improvement rather than by repeated standardized symptom scoring. Variability in follow-up timing, medication adherence, patient expectations, and retrospective documentation may all contribute to differences between clinician-recorded improvement and changes in IPSS. Because these findings were derived from retrospective clinical records, they should be interpreted cautiously and considered hypothesis-generating rather than definitive evidence of discordance.

The overall incidence of documented adverse drug reactions was 22.1%, with ejaculatory dysfunction (12.6%) and dizziness (9.5%) being the most frequently recorded adverse events. These findings

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are consistent with the established pharmacological profile of alpha-blockers. Ejaculatory dysfunction is recognized as a class effect that is more commonly associated with highly selective α1A-adrenergic receptor antagonists, whereas dizziness reflects systemic vasodilatory effects associated with alpha-blockade8. Importantly, no serious adverse drug reactions requiring hospitalization or permanent discontinuation of therapy were documented, supporting the favorable safety profile of alpha-blocker therapy in routine outpatient practice.

Interpretation of adverse-event frequencies according to individual medications should be undertaken with caution. The treatment groups were markedly unequal in size, particularly the alfuzosin subgroup (n = 7), limiting meaningful comparison between individual alpha-blockers. Consequently, the present study should not be interpreted as demonstrating superiority or inferiority of any specific agent with respect to either efficacy or safety.

One of the major strengths of the present study is that it reflects real-world clinical practice in a government teaching hospital serving predominantly rural and semi-urban populations, where published observational data remain limited. Unlike randomized controlled trials, which employ strict eligibility criteria and standardized follow-up protocols, observational studies provide valuable evidence regarding prescribing behaviour, treatment adherence, and clinical outcomes under routine healthcare conditions. Such data complement evidence generated from randomized trials and contribute to understanding how guideline-recommended therapies perform in everyday practice.

The present study has several limitations. First, its retrospective design is inherently susceptible to incomplete documentation and information bias. Second, the study was conducted at a single tertiary care institution, which may limit the generalizability of the findings to other healthcare settings. Third, adverse drug reactions were identified from routine clinical documentation rather than through a structured pharmacovigilance protocol, and under-reporting cannot be excluded. Fourth, the markedly unequal sample sizes across treatment groups, particularly the small alfuzosin subgroup, precluded robust comparative analyses between individual alpha-blockers. Finally, although statistically significant improvement in IPSS was demonstrated, the exploratory nature of this analysis and the modest absolute change warrant cautious interpretation.

Future prospective multicentre studies incorporating standardized follow-up intervals, repeated IPSS assessment, uroflowmetry, post-void residual urine measurement, quality-of-life evaluation, and adequately powered comparisons between different alpha-blockers would provide more robust evidence regarding the effectiveness and safety of medical therapy for BPH in routine clinical practice.

Overall, our findings support the continued use of alpha-blockers as first-line pharmacological therapy for symptomatic BPH in routine outpatient practice. At the same time, they emphasize the value of standardized symptom assessment using validated instruments such as the IPSS to ensure accurate evaluation of therapeutic response and facilitate evidence-based clinical decision-making.

CONCLUSION

This retrospective observational study provides real-world evidence on the clinical profile, prescribing patterns, treatment outcomes, and safety of alpha-blocker therapy among men with benign prostatic hyperplasia attending a government teaching hospital in Southern India. Most patients presented with moderate lower urinary tract symptoms, and tamsulosin was the predominant alpha-blocker prescribed in routine outpatient practice. Alpha-blocker therapy was generally well tolerated, with ejaculatory dysfunction and dizziness being the most frequently documented adverse drug reactions, while no serious adverse events were recorded.

Although clinician-reported symptomatic improvement was observed in the majority of patients, only a small proportion achieved a clinically meaningful reduction in International Prostate Symptom Score (IPSS). This finding highlights the importance of incorporating standardized symptom assessment using validated instruments such as the IPSS during routine follow-up to accurately evaluate therapeutic response and improve the quality of clinical documentation.

Despite the inherent limitations of its retrospective single-center design, the study provides valuable insight into real-world management of benign prostatic hyperplasia in a government healthcare setting serving predominantly rural and semi-urban populations. Future prospective multicentre studies with standardized follow-up schedules, comprehensive symptom assessment, and adequately powered comparative analyses are warranted to further define the effectiveness and safety of alpha-blocker therapy in routine clinical practice.

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