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Research Article

Comparative Study of Turp versus Medical Management in Benign Prostatic Hyperplasia

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ABSTRACT

Objective: To identify the differences in the efficacy, safety and quality of life after transurethral resection of the prostate (TURP) and medical management in Pakistani men with moderate to severe benign prostatic hyperplasia (BPH).

Materials and Methods: A prospective randomized controlled trial was used as the study design in three tertiary care centres in Pakistan during the period between January 2023 and December 2024. Two hundred and forty men of [?]50 years with moderate to severe LUTS (IPSS 8-19) and a 30-80 mL prostate volume were randomly matched into TURP (n=120) versus medical treatment using tamsulosin 0.4 mg daily +- finasteride 5 mg daily (n=120). The primary outcomes were change in IPSS score, maximum urinary flow rate (Qmax), and quality of life (QoL) index in 6 months. Secondary outcomes were complication rates, the incidence of acute renal failure and re-intervention.

Results: Findings at 6 months TURP showed much higher increase in IPSS (14.2+-3.1 vs 6.8+-2.9), Qmax (+9.8+-3.2 vs +3.1+-1.8 mL/s) and QoL index ([?]3.4+-1.1 vs +1.9+-0.9) over medical treatment. The AUR rate was much less in the TURP-group (2.5% vs 15.8% p=0.001). Fewer immediate complications were noted in medical management (4.2% vs 18.3% p=0.002) although the majority of TURP complications were minor and self-limiting. Re-intervention of TURP was needed in 3.3 percent of the patients compared with 22.5 percent in the medical patients (p<0.001).

Conclusion: TURP is more effective rather than medical management in symptomatic relief, urodynamic and disease progression in Pakistani patients who have moderate to severe BPH. Although initial complication rates are greater, TURP is more effective in the long term and has reduced re-intervention rates, and hence is economical in a resource-restrained environment where late presentation with complications is prevalent.

Keywords: Benign Prostate Hyperplasia; Transurethral Resection of Prostate; Medical Therapy; Alpha-Blockers; 5-Alpha Reductase Inhibitors.

INTRODUCTION

Benign prostatic hyperplasia (BPH) is one of the most common urological diseases among aging males around the globe, where there is non-malignant growth of stromal and epithelial cells of the prostate resulting in the obstruction of the bladder outlet and lower urinary tract symptoms [1]. Its pathophysiology is characterized by a complex of aging, androgens (especially, dihydrotestosterone), and growth factors which promote the proliferation of cells in the zone between the epithelial and mesenchymal divisions of the prostate gland [2]. Although histological BPH can be found in up to 50 per cent of men at the age of 60 and 90 per cent at the age of 85, the clinically significant disease causing such that necessitates intervention occurs around 30 per cent in men above 65 years around the world [3].

The burden of BPH across the world is steadily increasing with aging populations with age standardized prevalence estimated to be 2,480 per 100, 000 populations [5]. Nevertheless, there are geographic and racial differences with regard to the presentation, progression, and complications of the disease. In South Asia, especially in Pakistan, there is limited

epidemiological information, but there is an indication of high prevalence of clinical BPH at a rate of about 10.3% among adult men but highly prevalent with old age [6]. More importantly, Pakistani patients exhibit a unique clinical presentation of late appearance (more than 78 percent) of complications associated with acute urinary retention (AUR), persistent retention with kidney failure, or frequent UTI [7]. This coupled socio-cultural resistance to medical services through multifactorial factors such as health literacy, financial barriers, traditional medicine, and insufficient access to specialized urological services in rural areas is the cause of this delayed healthcare seeking behavior [8].

Untreated BPH is associated with a progressive course of natural history with gradual worsening of LUTS, increasing post-void residual urine volume, and the increased risk of complications such as AUR (1-2%/annum in patients treated medically), recurrent UTIs, bladder calculi, and deterioration of the upper urinary tract [9]. Effects of untreated bladder outlet obstruction have more morbidity and mortality in resource-limited situations such as Pakistan in which a baseline renal function may already be impaired due to endemic diseases such as chronic kidney disease of uncertain etiology and diabetes mellitus [10].

Treatment of BPH is in a continuum with watchful waiting to mild symptoms mild cases and surgery to cure BPH or complications. The two classes of drugs are alpha-1 adrenergic receptor blockers (e.g., tamsulosin, alfuzosin) and 5-alpha reductase inhibitors (5-ARIs; e.g., finasteride, dutasteride) and are used in medical management to relax prostatic and bladder neck smooth muscle to promote urinary flow and to decrease the prostate volume respectively, over 6-12 months [11]. The combination of both agents is additively beneficial in men with larger prostates (>40 mL) or a high PSA (>1.5 ng/mL) [12]. Although medical therapy has been shown to provide non-invasive control of symptoms with rather good safety profiles, it has been found to have several limitations: low efficacy (30-40 percent symptom control), need to continue treatment, side effects (dizziness, retrograde ejaculation, sexual dysfunction), and inability to prevent development of the disease in a significant proportion of patients [13].

The most effective treatment in moderate or severe BPH is surgery, and the transurethral resection of the prostate (TURP) has been used as the gold standard in the history of the treatment of prostates up to 30-80 mL [14]. TURP is an endoscopic procedure that entails resection and enucleation of adenomatous tissue that is obstructing the urinary stream with direct vision of an electrified loop that offers immediate mechanical restoration of obstruction. Modern series are 85-90% patient satisfaction, 15-20 mL/s betterment in Qmax and 70-80% better in symptom rating with TURP [15]. Although the laser vaporization methods and alternative procedures with minimal invasions were developed, TURP remains receptive in developing nations because it is less expensive to equip, and its safety profile is well established, as well as widely available surgeon knowledge [16]. The individualized choice of treatment according to the severity of symptoms, the size of the prostate, personal preference, and the risk of development are the priorities of the amendment of the American Urological Association (AUA) 2023 guideline [17]. The surgical intervention is highly recommended among men who have moderate to severe symptoms of IPSS (IPSS [?]8) and who have failed or are not eligible to medical treatment. These guidelines are however largely reflective of Western population in high income brackets with little applicability to resource-poor contexts with significant variation in the presentation of diseases, healthcare facilities, and economic factors.

The relative efficiency of TURP and medical treatment of moderate BPH has not been sufficiently researched in Pakistan, though the importance of such studies is significant in the process of clinical decisions. The majority of currently available Pakistani-based literature relies on the results of surgery in patients with complications opposed to comparative efficacy at the earlier stages of the disease [18].

Moreover, the economic cost of lifelong medical treatment versus the one-time surgery needs to be assessed in the framework of out-of-pocket medical care spending being one of the greatest household financial risk [19]. A high ratio of late presentation with complications in Pakistani patients can potentially change the risk benefit calculation in favor of surgery at an earlier stage than that of populations in the West where watchful waiting and protracted medical treatment has become more the norm [20].

MATERIALS AND METHODS

Study Design and Setting: This prospective, single-blinded, randomized controlled trial was

conducted at three tertiary care teaching hospitals in Pakistan: Jinnah Postgraduate Medical Centre (Karachi), Services Institute of Medical Sciences (Lahore), and Khyber Teaching Hospital (Peshawar). The study received ethical approval from the Institutional Review Boards of all participating centers and was registered with the Pakistan Clinical Trials Registry. Written informed consent was obtained from all participants prior to enrollment. Sample Size Calculation: Based on a pilot study demonstrating a mean IPSS reduction of 14.5±3.5 in the TURP group versus 7.2±3.0 in the medical management group at 6 months, with alpha error of 0.05 and power of 90%, a minimum sample size of 106 patients per group was required. Accounting for an anticipated 10% dropout rate, we aimed to enroll 120 patients per arm (total N=240). Participant Selection: Male patients aged ≥50 years presenting to urology outpatient departments were screened for eligibility. Inclusion criteria comprised: (1) IPSS score 8–19 (moderate to severe LUTS); (2) prostate volume 30–80 mL on transrectal ultrasonography (TRUS); (3) maximum urinary flow rate (Q_{max}) <15 mL/s on uroflowmetry with post-void residual (PVR) volume <300 mL; (4) no prior prostate surgery or medical therapy for BPH within preceding 6 months; and (5) serum prostate-specific antigen (PSA) <10 ng/mL with negative digital rectal examination for suspicious nodularity. Exclusion criteria included: (1) prostate cancer on biopsy; (2) neurogenic bladder; (3) urethral stricture; (4) bladder stones or diverticula; (5) active urinary tract infection; (6) uncontrolled diabetes mellitus (HbA1c >9%); (7) severe cardiovascular or pulmonary comorbidities increasing surgical risk (ASA class IV); and (8) concomitant use of medications affecting bladder function (anticholinergics, diuretics). Randomization and Blinding: Eligible patients were randomized 1:1 to TURP or medical management using computer-generated block randomization (block size 4–6) stratified by center and baseline IPSS severity (8–13 vs 14–19). Allocation concealment was maintained using sequentially numbered opaque sealed envelopes opened only after baseline assessments were completed. Due to the nature of interventions, participants and treating physicians could not be blinded; however, outcome assessors performing IPSS interviews, uroflowmetry, and data analysts remained blinded to group allocation throughout the study period. Interventions: Intervention Group (TURP): Patients underwent standard monopolar TURP under spinal anesthesia using a 26-French continuous-flow resectoscope with glycine 1.5% irrigation. Resection extended from bladder neck to verumontanum, with careful hemostasis using electrocautery. A 20-French three-way Foley catheter was placed postoperatively with continuous bladder irrigation until effluent cleared (typically 24–48 hours). Catheter was removed on postoperative day 2–3 after trial of voiding. Patients received perioperative antibiotics (ceftriaxone 1g IV) and analgesics as needed. Standard discharge criteria included ability to void with PVR <100 mL and absence of significant hematuria. Control Group (Medical Management): Patients received tamsulosin 0.4 mg orally once daily at bedtime. Those with prostate volume >40 mL or PSA >1.5 ng/mL additionally received finasteride 5 mg daily. Patients were instructed to continue therapy for the entire 6-month study period. Follow-up visits occurred at 1, 3, and 6 months for medication adherence assessment (pill count), symptom evaluation, and adverse event monitoring. Dose escalation or addition of second agent was permitted for inadequate response (IPSS reduction <25% at 3 months) after discussion with the study physician. Outcome Measures: Primary outcomes measured at baseline and 6 months included: (1) change in IPSS score (range 0–35; higher=worse symptoms); (2) change in maximum urinary flow rate (Q_{max}, mL/s) on uroflowmetry; and (3) change in BPH-specific quality of life (QoL) index (single question from IPSS questionnaire, range 0–6; higher=worse QoL). Secondary outcomes included: (1) complication rates within 30 days (TURP: bleeding requiring transfusion, TUR syndrome, urinary tract infection, urethral stricture, incontinence; medical: dizziness, orthostatic hypotension, retrograde ejaculation, sexual dysfunction); (2) incidence of acute urinary retention requiring catheterization; (3) re-intervention rate (surgery for medical group; repeat TURP or other procedure for surgical group); (4) change in prostate volume on TRUS; and (5) change in post-void residual urine volume. Follow-up Protocol: All patients attended scheduled visits at 1, 3, and 6 months post-intervention. Each visit included standardized IPSS questionnaire administered by blinded research coordinator, uroflowmetry with PVR measurement, physical examination, and adverse event

documentation. TRUS for prostate volume was repeated at 6 months. Patients experiencing AUR, severe hematuria, or inability to void were instructed to present immediately to emergency department with 24/7 urology coverage available at all centers. Statistical Analysis: Data were analyzed using SPSS version 26.0. Continuous variables were expressed as mean±standard deviation and compared using independent samples t-test or Mann-Whitney U test as appropriate based on normality assessment (Shapiro-Wilk test). Categorical variables were presented as frequencies with percentages and compared using chi-square or Fisher's exact test. Within-group changes from baseline were analyzed using paired t-test. Intention-to-treat analysis was performed with last observation carried forward for missing 6-month data. A p-value <0.05 was considered statistically significant for all analyses. Subgroup analyses were pre-specified for patients with baseline prostate volume <50 mL versus ≥50 mL.

Ethical Considerations: The study adhered to Declaration of Helsinki principles. Patients randomized to medical management who developed AUR, recurrent UTIs, renal deterioration, or intolerable symptoms were offered crossover to TURP with documentation as treatment failure. All surgical procedures were performed by experienced urologists with minimum 50 prior TURP procedures. Standardized surgical technique and perioperative care protocols were implemented across centers to minimize performance bias.

RESULTS

A total of 287 patients were screened, of whom 240 met eligibility criteria and were randomized (TURP n=120; medical management n=120). Baseline characteristics were well-balanced between groups with no statistically significant differences in age, symptom severity, prostate volume, or comorbidities (Table 1). Twenty-two patients (9.2%) were lost to follow-up (TURP n=9; medical n=13), primarily due to relocation or inability to attend follow-up visits; these were included in intention-to-treat analysis using last observation carried forward. The mean age was 68.4±7.2 years, mean baseline IPSS 15.8±3.6, mean prostate volume 52.3±14.7 mL, and mean Q_{max} 9.4±2.8 mL/s.

Table 1: Baseline Characteristics of Study Participants (N=240)

Characteristic	TURP Group (n=120)	Medical Management (n=120)	p-value
Age (years), mean±SD	68.7±7.4	68.1±7.0	0.482
BMI (kg/m²), mean±SD	24.8±3.6	25.1±3.9	0.513
IPSS score, mean±SD	16.1±3.8	15.5±3.4	0.197
QoL index, mean±SD	4.3±1.1	4.1±1.0	0.156
Q_{max} (mL/s), mean±SD	9.2±2.7	9.6±2.9	0.264
PVR volume (mL), mean±SD	142.5±68.3	138.7±72.1	0.675
Prostate volume (mL), mean±SD	53.6±15.2	51.0±14.1	0.183
Comorbidities, n (%)			
Hypertension	58 (48.3)	62 (51.7)	0.602
Diabetes mellitus	41 (34.2)	38 (31.7)	0.687
Ischemic heart disease	19 (15.8)	17 (14.2)	0.721

At 6 months, both groups demonstrated significant improvement in all primary outcomes compared to baseline (all p<0.001 within groups). However, the magnitude of improvement was substantially greater in the TURP group across all parameters (Table 2). The mean IPSS reduction was −14.2±3.1 in TURP versus −6.8±2.9 in medical management (between-group difference −7.4, 95% CI −8.3 to −6.5, p<0.001). Similarly, Q_{max} improved by +9.8±3.2 mL/s after TURP compared to +3.1±1.8 mL/s with medical therapy (difference +6.7 mL/s, 95% CI +5.9 to +7.5, p<0.001). Quality of life index improved by −3.4±1.1 points after TURP versus −1.9±0.9 points with medical management (difference −1.5, 95% CI −1.8 to −1.2, p<0.001).

Table 2: Change in Primary Outcome Measures at 6 Months

Outcome Measure	TURP Group (n=120)	Medical Management (n=120)	Between-Group Difference (95% CI)	p-value
IPSS score	−14.2±3.1	−6.8±2.9	−7.4 (−8.3 to −6.5)	<0.001
Q_{max} (mL/s)	+9.8±3.2	+3.1±1.8	+6.7 (+5.9 to +7.5)	<0.001
QoL index	−3.4±1.1	−1.9±0.9	−1.5 (−1.8 to −1.2)	<0.001
Prostate volume (mL)	−28.4±9.7	−6.2±4.3	−22.2 (−24.1 to −20.3)	<0.001
PVR volume (mL)	−118.3±42.6	−45.8±38.2	−72.5 (−82.1 to −62.9)	<0.001

Table 3: Complication Profile within 30 Days Post-Intervention

Complication	TURP Group (n=120)	Medical Management (n=120)	p-value
Any complication	22 (18.3)	5 (4.2)	0.002
Major complications	4 (3.3)	0 (0.0)	0.121
Bleeding requiring transfusion	3 (2.5)	0	0.244
TUR syndrome	1 (0.8)	0	1.000
Minor complications	18 (15.0)	5 (4.2)	0.008
UTI requiring antibiotics	8 (6.7)	2 (1.7)	0.089
Transient incontinence (<1month)	6 (5.0)	0	0.029
Urethral discomfort/stricture	4 (3.3)	0	0.121
Dizziness/orthostasis	0	3 (2.5)	0.244
Retrograde ejaculation	0	2 (1.7)	0.496

Major complications defined as those requiring hospitalization, blood transfusion, or surgical intervention

Table 4: Disease Progression and Re-intervention Outcomes

Outcome	TURP Group (n=120)	Medical Management (n=120)	p-value
Acute urinary retention	3 (2.5)	19 (15.8)	0.001
Recurrent UTI (>2 episodes)	2 (1.7)	11 (9.2)	0.012
Renal function deterioration	1 (0.8)	5 (4.2)	0.182
Re-intervention required	4 (3.3)	27 (22.5)	<0.001
Repeat TURP/other surgery	4 (3.3)	24 (20.0)	<0.001
Escalation of medical therapy	0	3 (2.5)	0.244

Defined as rise in serum creatinine >0.5 mg/dL from baseline

Table 5: Subgroup Analysis by Baseline Prostate Volume

Outcome	Prostate Volume <50 mL		Prostate Volume ≥50 mL	
	TURP (n=58)	Medical (n=62)	TURP (n=62)	Medical (n=58)
IPSS score	−13.8±2.9	−7.1±2.7	−14.6±3.3	−6.5±3.1
p-value	<0.001		<0.001	
Q_{max} (mL/s)	+9.2±2.8	+3.4±1.6	+10.3±3.5	+2.8±2.0
p-value	<0.001		<0.001	
AUR incidence	1 (1.7%)	8 (12.9%)	2 (3.2%)	11 (19.0%)
p-value	0.032		0.008	

Interpretation of results demonstrates that TURP provided significantly superior symptomatic and functional outcomes compared to medical management in Pakistani men with moderate to severe BPH. The magnitude of IPSS improvement after TURP (−14.2 points) represents a clinically meaningful

reduction exceeding the minimal clinically important difference of 3–4 points, effectively converting most patients from moderate/severe to mild/no symptoms. The 6.7 mL/s greater improvement in Q_{max} after TURP reflects substantial mechanical relief of obstruction unattainable with pharmacotherapy alone. Importantly, TURP demonstrated marked superiority in preventing disease progression, with 84% relative risk reduction in AUR (2.5% vs 15.8%, p=0.001) and 85% lower re-intervention rate (3.3% vs 22.5%, p<0.001). While TURP was associated with higher overall complication rates (18.3% vs 4.2%, p=0.002), the majority were minor and self-limiting (transient incontinence, mild hematuria). Major complications requiring intervention occurred in only 3.3% of TURP patients, comparable to international series. Notably, no patient in either group experienced permanent incontinence or required intensive care admission. Medical management demonstrated excellent short-term safety but failed to prevent disease progression in approximately one-fifth of patients requiring subsequent surgical intervention.

Subgroup analysis revealed consistent superiority of TURP across prostate volume strata, though the absolute benefit was slightly greater in men with larger prostates (≥50 mL), particularly regarding AUR prevention (19.0% vs 3.2%, p=0.008). This suggests that even men with moderately enlarged prostates may derive substantial benefit from early surgical intervention in settings where close monitoring and timely escalation of care may not be feasible.

DISCUSSION

The current study has attempted to fill these knowledge gaps through a prospective randomized controlled trial study that compares TURP with modern medical management among Pakistani men with moderate to severe BPH. Our hypothesis is that the TURP will prove to be more effective in symptom relief, improvement in urodynamics, and avoidance of disease progression, and acceptable safety data notwithstanding higher initial complication rates. The insight into such comparative outcomes will be needed to create context-specific clinical guidelines and maximize resource distribution in the rapidly changing healthcare system in Pakistan. This randomized controlled trial represents a strong piece of evidence to conclude that TURP is more effective in Pakistani men with moderate and severe BPH than the current medical treatment with much higher improvements in symptom scores, urinary flow rates and urinary quality of life. The starting size of benefit at 14-point IPSS reduction and almost doubling of Q/max are similar to those that have been reported by use of medical therapy alone and also agree with findings published in the international series of surgery [19,20]. More importantly, TURP showed a significant difference against medical management as it prevented disease progression more significantly, acute urinary retention (84% less) and re-intervention (85% less). Such results have far reaching clinical practice implications in Pakistan and other resource constrained environments where late presentations with complications are still a common occurrence [21].

Our findings support the pathophysiological explanation of surgery in developed BPH. Medical therapy offers temporary relief of the symptoms as a result of relaxation of the smooth muscle (alpha-blockers) or slight reduction of the prostate size (5-ARIs), but does not help remove the mechanical barrier of adenomatous tissue [22]. TURP is a direct intervention of this anatomical barrier by cutting tissue and this is the reason that significant increases in Qmax (+9.8 vs +3.1 mL/s) and a more comprehensive improvement in the symptoms was achieved in our study. The difference in prostate volume decrease following TURP as compared to medical therapy (Table 2) is directly proportional to long-term alleviation of the bladder outlet obstruction, which explains the lower incidence of AUR and further intervention.

The high disease progression of medically managed patients (15.8% AUR, 22.5% surgery within 6 months) is the result of the natural history of BPH

and situation-specific problems in Pakistan. In contrast to the Western population where follow-up and early escalation of therapy are both possible, Pakistani patients often have impediments to regular treatment such as financial limitations, transportation problems, and other socioeconomic priorities [23]. That one-fifth of patients under medical management needed surgical intervention in 6 months is an indication that watchful waiting with medical treatment could be false economy in facilities with limited surveillance arrangements. The cost of a lifetime medical treatment, emergency room visit with AUR, and subsequent surgery are presumably higher than the initial cost of primary TURP a hypothesis that needs formal health economic analysis.

We have a good complication profile of TURP (18.3% total, 3.3% major) which is favorable compared to modern Pakistani series where 15-25% overall complications are reported [24] and international standards. The single instance of TUR syndrome (0.8%) is a result of adherence to the best practices in the field of surgery which includes restricting the number of resection time hours, the use of proper irrigation fluids, and the absorption of fluid monitoring. Transient incontinence in 5/100 patients healed on its own within 4 weeks, which agrees with the literature of 2-10/100 incontinence of a transient nature after TURP which seldom lasts more than 3 months [25]. Specifically, it is noteworthy that no patient acquired a permanent state of incontinence or needed blood transfusion after the acute postoperative stage, which highlights the safety of TURP in the case of patients selected by experienced surgeons.

The comparatively low effectiveness of medical management among our group (6.8-point IPSS decrease) is a point to be discussed. Although similar outcomes were found elsewhere in international trials of 4-7 point improvement with alpha-blockers [26], that is less impressive than 10-15 point improvements that have occasionally been reported in highly selected study populations. Such difference could reflect the practical difficulties such as inadequate drug compliance (especially twice daily regimen), inconsistency in drug quality in the local pharmaceutical market, and late stage of disease at the time of admission. Khan et al. had already reported that 78 percent of Pakistani BPH patients present with complications [27], implying that our compareable IPSS score cohort of patients may have had a higher level of provided anatomical obstructions than Western counterparts, which is likely to decrease the responsiveness to medical therapy.

Our results are to be put in perspective with changing global BPH management paradigms. The 2023 amendment of the AUA guideline still proposes the use of medical therapy as first-line treatment of moderate and uncomplicated symptoms [28] which is based on the data that is largely representative of high income nations with well-established primary care systems. But these guidelines recognize that personal patient factors such as symptom bother, prostate size, risk of progression as well as patient preference must influence the choice of treatment. The risk-benefit calculus can be in favour of earlier surgical intervention in resource-limited environments as the morbidity of the consequences of treatment failure (AUR, renal impairment) increases with the duration to presentation, and the provision of emergency urological care is limited. Our statistics confirm this context-based adaptation, showing the slight growth in early complications with TURP to be more than compensated by a much reduced progression level and re-intervention requirement.

There are a number of constraints that should be mentioned. The 6-month follow-up time is enough to detect the initial results and complications but is not enough to determine the long-term sustainability after 1-2 years. Recurrence rates of BPH following TURP is seen to be around 10-15% at 5 years [29] which is better than the case with medical treatment whereby the symptoms tend to reoccur on withdrawal. Follow up will be lengthened as an extension study. Second, we have not systematically assessed sexual

functioning with validated scales IIEF and anecdotally reported that retrograde ejaculation occurred in 2 medically treated patients (probably preexisting) and approximately 60% of TURP patients a known side effect of bladder neck resection [30]. Third, no formal cost-effectiveness analysis was conducted but initial computations indicate that TURP is cost-saving compared to lifelong medical therapy within 2-3 years in Pakistan setting (unpublished data). Lastly, because of our inclusion criteria, the study cannot be generalized to patients with extremely large prostases (>80 mL) or substantial comorbidities.
In spite of these, our study offers the most evidence to date to inform the BPH management choices in Pakistan.

CONCLUSION

In Pakistani men with moderate to severe benign prostatic hyperplasia, transurethral resection of the prostate provides significantly superior symptomatic relief, urodynamic improvement, and prevention of disease progression compared to medical management with alpha-blockers ± 5-alpha reductase inhibitors. Despite a modestly higher rate of transient perioperative complications, TURP demonstrates excellent safety profile with no major permanent morbidities and substantially lower rates of acute urinary retention and re-intervention. Given the high prevalence of late presentation with complications in Pakistan and limitations in longitudinal monitoring infrastructure, TURP represents a cost-effective definitive treatment that may be appropriately offered earlier in the disease course than current Western guidelines suggest. Treatment decisions should remain individualized, incorporating patient preference, prostate size, comorbidities, and access to follow-up care, but clinicians should recognize that surgical intervention offers durable benefits particularly valuable in resource-limited settings.

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