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Patient Satisfaction and Outcomes in Men Undergoing TURP for Benign Prostatic Hyperplasia

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Abstract **Original Research Article**

Background: Benign prostatic hyperplasia (BPH) is a common condition in aging men, often leading to lower urinary tract symptoms (LUTS). Transurethral resection of the prostate (TURP) is a widely performed surgical procedure for BPH, improving symptom relief and quality of life. This study aimed to evaluate the clinical outcomes, complications and patient satisfaction after TURP in patients with BPH. ***Methods:*** This prospective observational study was conducted at the department of Urology, BSMMU, Dhaka, with 100 male patients undergoing TURP for BPH between July 2018 and June 2019. Pre- and post-operative data were collected, including symptom scores (IPSS), post-void residual (PVR), maximum flow rate (Qmax), complications and patient satisfaction. Statistical analysis included paired t-tests for continuous variables and chi-square tests for categorical data. ***Results:*** Post-TURP, IPSS significantly improved from 22.3 ± 5.4 to 7.8 ± 3.2 ($p < 0.001$), PVR reduced from 120 ± 30 mL to 25 ± 10 mL ($p < 0.001$) and Qmax increased from 6.5 ± 1.3 mL/s to 15.2 ± 2.4 mL/s ($p < 0.001$). Common early complications included urinary tract infections (12%) and transient incontinence (5%). Retrograde ejaculation was the most common late complication (65%). Patient satisfaction was high, with 70% reporting being very satisfied. ***Conclusion:*** TURP significantly improves symptoms, urinary flow and quality of life in BPH patients. Although complications, especially retrograde ejaculation, remain common, TURP remains an effective treatment for BPH.

Key words: Benign prostatic hyperplasia, TURP, patient satisfaction, urinary tract symptoms, complications, quality of life.

INTRODUCTION

Benign prostatic hyperplasia (BPH) is a common condition in aging men, characterized by nonmalignant enlargement of the prostate gland that can lead to bothersome lower urinary tract symptoms (LUTS).[1] These symptoms significantly affect quality of life and include increased frequency, urgency, nocturia, weak stream and incomplete bladder emptying.[2] The prevalence of BPH increases with age, with studies suggesting that approximately 50% of men over 60 and 90% over 80 experience symptoms to some degree.[3] Although the pathogenesis of BPH is multifactorial, hormonal changes, inflammation and stromal-epithelial interactions are thought to play central roles.[4]

Medical management is often the first-line treatment for symptomatic BPH, including alpha-blockers, 5-alpha-reductase inhibitors and combination therapy.[5] While effective for many patients, medical therapy has limitations, particularly in those with severe symptoms, significant bladder outlet obstruction, or complications such as recurrent urinary tract infections, hematuria, or bladder stones.[6] For such patients, surgical intervention remains the standard of care.[7] Among surgical options, transurethral resection of the prostate (TURP) is considered the gold standard for relieving obstruction and improving LUTS, particularly in prostates of moderate size.[8] TURP has been widely used for decades due to its proven efficacy in symptom relief, improvement in urinary flow and high patient satisfaction rates.[9,10]

Despite its widespread acceptance, TURP is associated with perioperative and postoperative complications, including bleeding, urinary incontinence, infection and retrograde ejaculation.[11] Advances in surgical techniques and perioperative care have significantly reduced the risk of these complications, but they remain a concern for patients and clinicians alike.[12] Understanding the balance between the benefits and risks of TURP is essential for optimizing patient outcomes and guiding treatment decisions.[13]

Patient satisfaction is a critical metric in evaluating the success of surgical interventions, as it reflects the individual's perception of symptom relief, quality of life improvement and recovery experience.[5] Satisfaction levels following TURP are generally high, but factors such as postoperative complications, residual symptoms and delayed recovery can impact this outcome.[8] Clinical outcomes such as changes in International Prostate Symptom Score (IPSS), post-void residual (PVR) volume and maximum urinary flow rate (Qmax) provide objective measures of surgical efficacy and complement subjective patient-reported outcomes.[12]

This study aimed to assess patient satisfaction and clinical outcomes in men undergoing TURP for BPH at a tertiary care center, providing insights into the efficacy and safety of this procedure in a local context. By analyzing both objective and subjective outcomes, the study seeks to contribute to improving clinical decision-making and enhancing the quality of care for men with BPH.

METHODOLOGY AND MATERIALS

This prospective observational study was conducted at the department of Urology, Bangabandhu Sheikh Mujib Medical University (BSMMU), Dhaka, Bangladesh, from July 2018 to June 2019, to evaluate patient satisfaction and clinical outcomes in men undergoing transurethral resection of the prostate (TURP) for benign prostatic hyperplasia (BPH). A total of 100 male patients were selected through purposive sampling based on inclusion criteria, which included adult males diagnosed with symptomatic BPH refractory to medical management and consented for TURP. Exclusion criteria were patients with active urinary tract infections, prostate cancer, or significant comorbidities contraindicating surgery. Preoperative assessments included detailed medical history, clinical examination and investigations such as complete blood count, serum creatinine, urinalysis, prostate-specific antigen (PSA) and ultrasonography of the prostate with post-void residual (PVR) volume measurement. Baseline symptom severity was assessed using the International Prostate Symptom Score (IPSS) and uroflowmetry was performed to measure maximum urinary flow rate (Qmax).

TURP was performed under regional anesthesia by experienced urologists using a standard monopolar resectoscope with continuous irrigation. Postoperative care included catheterization for 24-48 hours and monitoring for complications such as bleeding, infection and transient incontinence. Patients were discharged upon stable voiding and followed up at one, three and six months postoperatively. Clinical outcomes evaluated during follow-up included changes in IPSS, PVR and Qmax. Complications were categorized as early (within one month) and late (after one month). Patient satisfaction was assessed using a structured questionnaire on a 5-point Likert scale during the six-month follow-up visit. Data were collected using pre-designed forms and analyzed using statistical software. Continuous variables were expressed as mean ± standard deviation and compared using paired t-tests, while categorical variables were expressed as frequencies and percentages and analyzed using chi-square tests. Statistical significance was set at $p < 0.05$.

RESULTS

Table 1: Demographic and Clinical Characteristics of Patients (N = 100)

Characteristic	n	%
Mean Age (years)	65 ± 8	
Diabetes Mellitus	32	32%
Hypertension	40	40%

Table 1 summarizes the demographic and clinical characteristics of the 100 patients included in the study. The mean age of the patients was 65 years, with a standard deviation of 8 years, indicating that the study population predominantly consisted of older adults, as expected in cases of benign prostatic hyperplasia (BPH). Among the study patients, 32% had a history of diabetes mellitus, while 40% were diagnosed with hypertension.

Table 2: Clinical Outcomes Pre- and Post-TURP (N = 100)

Parameter	Baseline (Mean ± SD)	Postoperative (Mean ± SD)	p-value
IPSS (Symptom Score)	22.3 ± 5.4	7.8 ± 3.2	<0.001
PVR (Post-Void Residual, mL)	120 ± 30	25 ± 10	<0.001
Qmax (Flow Rate, mL/sec)	6.5 ± 1.3	15.2 ± 2.4	<0.001

Table 2 shows significant improvements in clinical outcomes following TURP. The mean IPSS decreased from 22.3 ± 5.4 to 7.8 ± 3.2 ($p < 0.001$), indicating notable symptom relief. PVR volume dropped from 120 ± 30 mL to 25 ± 10 mL ($p < 0.001$) and Qmax increased from 6.5 ± 1.3 mL/sec to 15.2 ± 2.4 mL/sec ($p < 0.001$), demonstrating enhanced bladder emptying and urinary flow. These findings highlight the procedure's effectiveness in managing BPH.

Table 3: Complications Following TURP (N = 100)

Complication Type	n	%
Early Complications		
Bleeding requiring transfusion	3	3%
Urinary Tract Infection (UTI)	12	12%
Transient incontinence	5	5%
Late Complications		
Stricture formation	4	4%
Retrograde ejaculation	65	65%

Table 3 outlines the complications observed in 100 patients after TURP. Early complications included bleeding requiring transfusion in 3% of cases, urinary tract infection (UTI) in 12% and transient incontinence in 5%. Among late complications, stricture formation was noted in 4%, while retrograde ejaculation was the most common, occurring in 65% of patients.

Table 4: Patient Satisfaction Scores (N = 100)

Satisfaction Level	n	%
Very Satisfied	70	70%
Satisfied	20	20%
Neutral	5	5%
Dissatisfied	3	3%
Very Dissatisfied	2	2%

Table 4 presents the patient satisfaction levels following TURP. A majority of patients (70%) reported being very satisfied with the outcomes, while 20% were satisfied. Neutral satisfaction was reported by 5% of patients and dissatisfaction was uncommon, with only 3% dissatisfied and 2% very dissatisfied.

Table 5: Hospital Stay and Recovery Parameters

Parameter	Value
Average Hospital Stay (days)	2.5 ± 1.1
Time to Resume Normal Activities (days)	10 ± 3

Table 5 summarizes the hospital stay and recovery parameters for patients undergoing TURP. The average hospital stay was 2.5 ± 1.1 days, reflecting a relatively short hospitalization period. Patients resumed normal activities within an average of 10 ± 3 days, indicating a swift recovery process and highlighting the efficiency of the procedure in minimizing downtime.

DISCUSSION

Transurethral resection of the prostate (TURP) remains the gold standard for surgical management of benign prostatic hyperplasia (BPH). Our study demonstrated significant improvements in International Prostate Symptom Score (IPSS), post-void residual (PVR) and maximum urinary flow rate (Qmax) post-TURP. These findings are consistent with prior studies. O'Sullivan et al. observed substantial symptomatic relief and enhanced quality of life post-TURP, emphasizing its efficacy in reducing urinary retention and improving flow rate.[14] Similarly, Milicevic reported enhanced functionality and symptom resolution in patients undergoing TURP.[15] The marked reduction in PVR and improvement in Qmax aligns with the literature, highlighting TURP's superiority over medical management in resolving obstruction and enhancing urinary mechanics.[16]

The overall complication rate in our study was comparable to other studies. Early complications included bleeding requiring transfusion (3%), urinary tract infection (UTI) (12%) and transient incontinence (5%). Late complications such as urethral strictures (4%) and retrograde ejaculation (65%) were also noted. Retrograde ejaculation remains the most common post-TURP complication, as observed in studies by Borchert and Leavitt, who attributed it to the disruption of internal sphincter mechanics during surgery.[17] Other studies, such as those by Bhojani et al., reported similar rates of early complications, highlighting TURP's safety profile.[18] Our findings affirm TURP's relative safety, with a low incidence of severe complications.

Patient satisfaction in our study was high, with 90% of participants reporting being very satisfied or satisfied. Mishriki et al. also found sustained patient satisfaction over a 12-year follow-up, indicating long-term benefits of TURP.[19] Pushkar et al. highlighted similar satisfaction levels, underscoring the strong correlation between symptomatic relief and patient-reported outcomes.[20] Factors contributing to high satisfaction include significant symptom reduction, fewer postoperative complications and improved quality of life.

The mean hospital stay in our study was 2.5 ± 1.1 days and time to resume normal activities was 10 ± 3 days. These outcomes reflect advancements in surgical techniques and perioperative care. Abdul-Muhsin et al. observed that well-informed patients experience smoother recoveries, emphasizing the role of preoperative education in enhancing recovery.[21] Short hospital stays and quick recovery times further support TURP's role as a minimally invasive, efficient surgical option.[22]

While TURP remains the gold standard, alternative treatments such as prostatic artery embolization (PAE) and laser therapies are gaining traction. Abt et al. demonstrated comparable outcomes between PAE and TURP but highlighted a lower risk of sexual dysfunction with PAE.[23] However, TURP's well-established efficacy in symptom resolution and its cost-effectiveness make it the preferred choice in many settings.[24,25]

Our findings confirm that TURP significantly improves the quality of life for BPH patients. Studies by Erkoc et al. and Hossain et al. similarly reported enhanced quality of life and patient-reported satisfaction post-TURP.[26] These improvements were sustained over time, supporting TURP's long-term benefits.

Limitations of the study

Our study had several limitations. The sample size of 100 patients and the single-center design may limit the generalizability of the findings. The relatively short follow-up period may not capture long-term outcomes or late complications. Additionally, the lack of a control group and reliance on self-reported data for patient satisfaction introduces potential biases. Some minor

complications might also have been underreported and retrospective elements in data collection may have introduced bias.

CONCLUSION

In conclusion, our study demonstrates significant improvements in patient-reported outcomes and clinical parameters following TURP for benign prostatic hyperplasia. While the procedure effectively reduces symptoms and enhances quality of life, complications such as retrograde ejaculation remain common. Despite these, TURP continues to be an effective treatment for moderate-to-severe BPH. Future research with larger, multicenter studies and comparisons with newer treatments could provide further insights to optimize patient care.

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REFERENCES

1. Emberton M. Medical treatment of benign prostatic hyperplasia: physician and patient preferences and satisfaction. International journal of clinical practice. 2010 Sep;64(10):1425-35.
2. Abdul-Muhsin HM, Tyson MD andrews PE, Castle EP, Ferrigni RG, Wolter CE, Swanson SK, McLemore RY, Humphreys MR. Analysis of benign prostatic hyperplasia patients' perspective through a third party-administered survey. Urology. 2016 Feb 1;88:155-60.
3. Sacco E, Bientinesi R, Marangi F, Totaro A, D'Addessi A, Racioppi M, Pinto F, Vittori M, Bassi P. Patient-reported outcomes in men with lower urinary tract symptoms (LUTS) due to benign prostatic hyperplasia (BPH) treated with intraprostatic OnabotulinumtoxinA: 3-month results of a prospective single-armed cohort study. BJU international. 2012 Dec 15;110.
4. Kaplan SA, Olsson CA. Patient satisfaction with finasteride in the treatment of symptomatic benign prostatic hyperplasia. Clinical therapeutics. 1996 Jan 1;18(1):73-83.
5. Jepsen JV, Bruskewitz RC. Comprehensive patient evaluation for benign prostatic hyperplasia. Urology. 1998 Apr 1;51(4):13-8.
6. Gratzke C, Barber N, Speakman MJ, Berges R, Wetterauer U, Greene D, Sievert KD, Chapple CR, Patterson JM, Fahrenkrug L, Schoenthaler M. Prostatic urethral lift vs transurethral resection of the prostate: 2-year results of the BPH 6 prospective, multicentre, randomized study. BJU international. 2017 May;119(5):767-75.
7. Qian X, Liu H, Xu D, Xu L, Huang F, He W, Qi J, Zhu Y, Xu D. Functional outcomes and complications following B-TURP versus HoLEP for the treatment of benign prostatic hyperplasia: a review of the literature and Meta-analysis. The Aging Male. 2017 Jul 3;20(3):184-91.
8. Elgin R, Pacha T, Di Loreto R, George V. Office Based Photovaporization of the Prostate for Benign Prostatic Hyperplasia: Outcomes and Patient Satisfaction. Urology practice. 2016 Jan;3(1):70-5.
9. Carnevale FC, Iscaife A, Yoshinaga EM, Moreira AM, Antunes AA, Srougi M. Transurethral resection of the prostate (TURP) versus original and PErFecTED prostate artery embolization (PAE) due to benign prostatic hyperplasia (BPH): preliminary results of a single center, prospective, urodynamic-controlled analysis. Cardiovascular and interventional radiology. 2016 Jan;39:44-52.
10. Ray AF, Powell J, Speakman MJ, Longford NT, DasGupta R, Bryant T, Modi S, Dyer J, Harris M, Carolan-Rees G, Hacking N. Efficacy and safety of prostate artery embolization for benign prostatic hyperplasia: an observational study and propensity-matched comparison with transurethral resection of the prostate (the UK-ROPE study). BJU international. 2018 Aug;122(2):270-82.
11. DiSantostefano RL, Biddle AK, Lavelle JP. The long-term cost effectiveness of treatments for benign prostatic hyperplasia. Pharmacoeconomics. 2006 Feb;24:171-91.
12. Lee YJ, Oh SA, Kim SH, Oh SJ. Patient satisfaction after holmium laser enucleation of the prostate (HoLEP): a prospective cohort study. PLoS One. 2017 Aug 9;12(8):e0182230.
13. Thiruchelvam N. Surgical therapy for benign prostatic hypertrophy/bladder outflow obstruction. Indian journal of urology. 2014 Apr 1;30(2):202-7.
14. O'Sullivan M, Murphy C, Deasy C, Iohom G, Kiely EA, Shorten G. Effects of transurethral resection of prostate on the quality of life of patients with benign prostatic hyperplasia. Journal of the American College of Surgeons. 2004 Mar 1;198(3):394-403.
15. Milicevic S. The impact of benign prostatic hyperplasia surgical treatment with turp method on the quality of life. Acta Informatica Medica. 2011 Sep;19(3):142.
16. Lin YH, Hou CP, Chen TH, Juang HH, Chang PL, Yang PS, Chen CL, Tsui KH. Transurethral resection of the prostate provides more favorable clinical outcomes compared with conservative medical treatment in patients with urinary retention caused by benign prostatic obstruction. BMC geriatrics. 2018 Dec;18:1-7.
17. Borchert A, Leavitt DA. A review of male sexual health and dysfunction following surgical treatment for benign prostatic hyperplasia and lower urinary tract symptoms. Current urology reports. 2018 Aug;19:1-8.
18. Bhojani N, Gandaglia G, Sood A, Rai A, Pucheril D, Chang SL, Karakiewicz PI, Menon M, Olugbade Jr K, Ruhotina N, Sammon JD. Morbidity and mortality after benign prostatic hyperplasia surgery: data from the American College of Surgeons national surgical quality

improvement program. Journal of Endourology. 2014 Jul 1;28(7):831-40.
19. Mishriki SF, Grimsley SJ, Nabi G, Martindale A, Cohen NP. Improved quality of life and enhanced satisfaction after TURP: prospective 12-year follow-up study. Urology. 2008 Aug 1;72(2):322-6.
20. Pushkar DY, Bernikov AN, Khodyreva LA, Dudareva AA, Al SK, Amdii RE, Aboyan IA, Shiranov KA, Medvedev VL, Efremov ME. Quality of life in patients with lower urinary tract symptoms after TURP for benign prostatic hyperplasia. Urologiia. 2018 Feb 15(1):53-61.
21. Abdul-Muhsin H, Tyson M, Raghu S, Humphreys M. The informed patient: an analysis of information seeking behavior and surgical outcomes among men with benign prostatic hyperplasia. American Journal of Men's Health. 2017 Jan;11(1):147-53.
22. Bozdar HR, Memon SR, Paryani JP. Outcome of transurethral resection of prostate in clinical benign prostatic hyperplasia. Journal of Ayub Medical College Abbottabad. 2010 Dec 1;22(4):194-6.
23. Abt D, Hechelhammer L, Müllhaupt G, Markart S, Güsewell S, Kessler TM, Schmid HP, Engeler DS, Mordasini L. Comparison of prostatic artery embolisation (PAE) versus transurethral resection of the prostate (TURP) for benign prostatic hyperplasia: randomised, open label, non-inferiority trial. Bmj. 2018 Jun 19;361.
24. Purkait B, Sinha RJ, Srinivas KS, Bansal A, Sokhal AK, Singh V. Outcome analysis of transurethral resection versus potassium titanyl phosphate-photo selective vaporization of the prostate for the treatment of benign prostatic hyperplasia; a randomized controlled trial with 4 years follow up. Turkish journal of urology. 2017 Jun;43(2):176.
25. Treharne C, Crowe L, Booth D, Ihara Z. Economic value of the transurethral resection in saline system for treatment of benign prostatic hyperplasia in England and Wales: systematic review, meta-analysis and cost–consequence model. European Urology Focus. 2018 Mar 1;4(2):270-9.
26. Erkoc M, Otunctemur A, Besiroglu H, Altunrende F. Evaluation of quality of life in patients undergoing surgery for benign prostatic hyperplasia. The Aging Male. 2018 Oct 2;21(4):238-42.