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ORGINAL ARTICLE

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Effect of transurethral resection of prostate on Uroflowmetry parameters on patients having benign prostatic hyperplasia

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A B S T R A C T

Background: The research evaluated the effects of 150 individuals with benign prostatic hyperplasia (BPH) undergoing transurethral resection of the prostate (TURP) on uroflowmetry parameters. The postoperative gains were considerable, with increases in the maximum flow rate (Qmax) and average flow rate (Qavg) being particularly noticeable. The International Prostate Symptom Score (IPSS), which rates preoperative symptoms, showed a substantial postoperative reduction. Following surgery, voiding volume rose, suggesting enhanced voiding efficiency, while voiding duration increased. The results highlight the effectiveness of TURP in treating BPH-related obstructive lower urinary tract symptoms and highlight the significance of uroflowmetry in pre- and postoperative evaluations.

INTRODUCTION:

Lower urinary tract problems affect 15%–60% of men over 40. Complex symptoms include frequency, urgency, nocturia, problems commencing urination, insufficient bladder emptying, low steam force, and steam stoppage(1). BPH frequently causes male LUTS. Benign prostatic enlargement Chronic BOO may induce urine retention, renal insufficiency, recurrent UTIs, extensive hematuria, and bladder calculi(2,3). It involves prostate histopathological cellular element proliferation. BPH and LUTS rise considerably with age. BPH affects 70% of US men aged 60–69 and 80% over 70(4). Autopsy examinations indicated 8%, 50%, and 80% histological frequency in the 4". and 9* decades. LUTS risk factors and larger prostates cause benign prostatic enlargement. Formerly, TURP was the best BPH procedure(5). Higher disease pathophysiology knowledge and digital rectal examination, transabdominal, and transrectal ultrasounds are the second most prevalent interventions in adult male patients worldwide. Urodynamic and serum PSA tests may misdiagnose the condition and require surgery. Uroflowmetry records voiding time from urinal pee(6). It would assess average flow and obstruction severity. For boys 14–45, the average flow rate is 21 mL/s, 46–65 mL/s, and 66–80 mL/s. Uroflowmetry in post-TURP benign hypertrophic hyperplasia patients will be examined after transurethral prostate removal(7).

Objective: To determine improvement in uroflowmetry after Transurethral resection of prostate

Study design: A prospective observational Study

Place and Duration of the Study: January 2014 to June 2016 Department at urology POF Hospital Wah Cantt, Pakistan

Materials and methods: The participants in this prospective observational study, which took place from January 2014 to June 2016, were 150 patients with benign

Authors Contribution
MAS. Concept & Design of Study AND Drafting**MAS**. Data Analysis and **.** Critical Review **, MAS,AU**.Final Approval of version

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prostatic hypertrophy obstruction who visited the urology outpatient department at POF Hospital Wah Cantt. Age, body mass index (BMI), and smoking demographic information were collected. All patients had their abdomens ultrasounds to measure the prostate volume and post-void residual urine output. All patients had uroflowmetry investigations, and the average urine flow rate was noted. Under spinal anaesthesia, a consultant urologist performed a transurethral resection of the prostate (TURP) on all of the patients. Following surgery, patients received a 1-gram IV TDS injection of ceftriaxone. Patients were monitored in the OPD for three months, and a urinalysis was done and documented in a proforma after every month.

INCLUSION CRITERIA:

The only patients included in this study were those who had enlarged prostate symptoms that were accompanied by lower urinary tract symptoms but who had neither developed urine retention nor required catheterization.

Exclusion criteria:

These patients were disqualified from the Study. CA prostate diagnosis: urethral stricture history, Diabetes mellitus history, patients with urine incontinence or bladder atonia.

Results:

The Study had 100 patients in all. The average age of patients, according to age data for patients, was a 3.678 standard deviation. Patients have to be at least 52 years old?andmarmilnadaPerforma was used, and the findings revealed that 80% of patients were non-smokers compared to 20% of smokers.1982.77 years. A narrative about smoking, women, and weight is able NO. 0i) Fistory. Weight and height information were used to determine BMI, and the findings revealed that 30% of the patients had a normal BMI, 40% were overweight, and 30% were obese. Chart Nos. 01 and 02 All patients' symptoms were evaluated using the International Prostate Symptom (POS?) score (IPSS) and ultrasound post-voluntary residual volume; based on the IPSS score, patients underwent surgery. Split with a minimum score of 19, a maximum score of 32, and an average IPSS score of 25.05 2.12. 80.57 4.52 ml was the average pre-operative post-void residual volume. After TURP, the average post-operative IPSS score decreased to 12.32 2.13 ml (Table No. 03 & 04). Pre-operative and post-operative uroflowmetry values were examined. All patients had their voiding duration, volume, Qmax, and Qavg measurements taken both before and after surgery. As a result of the TURP, the average Qmax increased to 18.45 3.12 ml from 13.45 2.45 ml in the pre-ativeperiod. The patient's Qavg was 8.42 1.34 ml before TURP. However, it was 14.3 $ 1.21 ml after TURP. Voiding time was recorded in the pre-operative period, where the average voiding time was 3.1 + 0.45 min, whereas the average voiding time in the post-operative stage was 12 0.34 min. Voiding volume was contrasted between the two phases. After surgery, the voiding volume increased to 420.82 - 5.40 ml (table No.05) from 350.65 - 4.36 ml in the pre-operative period.

Table 01. Descriptive Statistics Of Age Of The Patients

Mean	+Std. Deviation
Minimum	Maximum
Values	62.87 + 3.678 Yrs
52 Yrs	70 Yrs

Table02. Parameter, pre-operative, and post-operative score

Pre-operative IPSS Score:	25.05 ± 2.12
Post-operative IPSS Score:	12.32 ± 1.89

Table03. Comparison of uroflowmetry parameters in pre-operative and post- operative patients.

Pre-operative Qmax (Maximum Flow Rate):	13.45 ± 2.45 ml
Post-operative Qmax (Maximum Flow Rate):	18.45 ± 3.12 ml
Pre-operative Qavg (Average Flow Rate):	8.42 ± 1.34 ml
Post-operative Qavg (Average Flow Rate):	14.3 ± 1.21 ml
Pre-operative Voiding Time:	3.1 ± 0.45 min
Post-operative Voiding Time:	12 ± 0.34 min
Pre-operative Voiding Volume:	350.65 ± 4.36 ml
Post-operative Voiding Volume:	420.82 ± 5.40 ml

Discussion:

Lower urinary tract symptoms (LUTS) are the collective term for the obstructive and irritative symptoms caused by benign prostatic hyperplasia (BPH), a disease of ageing in the male population(8,9). Patients often report symptoms including hesitation, frequency, urgency, dribbling, dysuria, and nocturia, which may lead to a poor quality of life. The greatest sign of successful therapy is benign prostatic hyperplasia, and patients with symptoms of the lower urinary tract often seek care. Our patients' mean age was 63.62 years, which is similar to the two Pakistani studies mentioned above(10,11). Still, it is a little lower than the age stated by Mebust et al. Those in our Study and previous studies conducted in Pakistan are younger than those in Western countries(12). As a result, the date of birth is put in the hospital record using approximations since the majority of our elderly patients cannot recall their actual birthdays. Pre- operative maximal flow rate (Qmax) was determined to

be 7.6 ml/sec in the current Study: E 2.41. The rates reported by NielsenKT et al. (1989) and Larosa-Metal (1993) are 9.5 ml/second and 7.1 ml/second, respectively(13,14). These results are quite comparable to those from our Study.All patients were found to have blocked symptoms and a considerably lower maximal flow rate before surgery. In a study by Nielsen-KT et al. (1989), the maximal flow rate following transurethral resection of the prostate was determined to be 7.6 ml/sec in 84 consecutive patients(15). In a different Study by Dortiingor (reference number), Our patients' three- month post-operative follow-up (27.24 5.11 ml/sec:) Unlike those reported by the employees listed above, which were greatly improved, the flow rate in these investigations remained constantduring the follow-up period(16).The degree of prostatic blockage and the degree of maximum flow rate (Qmax) 21 had the highest association among the Uroflowmetry parameters examined. The pre- operative average flow rate was determined to be 4.44 * 1.28 ml/second in the current group. Still, during the first three months after surgery, it had grown to roughly 13.48 1 2.08 ml/second, indicating a considerable difference. The average flow rate increased after TURP compared to preoperatively(17).

Conclusion:

Uroflowmetry is a non-invasive, low-cost, OPD- based treatment that provides information on LUTS (lower urinary tract symptoms that are obstructed). Transurethral prostate resection (TURP) significantly lowers obstructive LUTS and improves uroflowmetry. Uroflowmetry should be performed both before and postoperatively in order to measure parameters like Q-Max and Q-avg.

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