

## Effects of Transurethral Resection of Prostate (TURP) on Quality of Life in Case of Benign Prostatic Hyperplasia

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### Abstract

**Background:** BPH is one of the most common cause of LUTS which significantly impairs the quality of life. TURP is minimally invasive surgical procedure for Benign Prostatic hyperplasia which has impact on quality of life. Impact on quality of life can be measured by QoL score and effect of TURP can be evaluated. **Objective:** The purpose of the present study was to evaluate the impact of transurethral resection of prostate (TURP) on Quality of Life (QoL) score. **Methodology:** This prospective study was carried out in the Department of Urology, Shaheed Suhrawardy Medical College and Hospital, Dhaka, from July 2015 to June 2016. Total fifty patients between 50 to 72 years attending for the treatment of benign prostatic hypertrophy (BPH) with lower urinary tract symptoms (LUTS) were included for the study according to inclusion & exclusion criteria. All of them were evaluated with baseline international prostate symptoms score (IPSS), QoL score, peak urinary flow rate (Qmax), voided volume, voiding time and PVR and were recorded in a predesigned data sheet. Selected patients underwent Transurethral Resection of Prostate. They were followed after 1 month and 3 months with same parameter and compared with the baseline values. **Results:** The baseline international prostate symptoms score (IPSS) in this study was 25.18±1.45. At one month and three months follow up visits after TURP, the IPSS was decreased to 15.0±1.07 and 8.14±0.76 respectively. There was significant improvement of peak urinary flow rate (Qmax) in the postoperative period, at the 1st follow up visit after one month of TURP (15.78±1.42, p<0.001) and at the 2nd follow visit after three months of TURP (18.78, p<0.001). The mean QoL score was 5.30±0.46 before TURP. After one month of TURP it was 3.20±0.45 and after 3 months of TURP it was 1.86±0.57. **Conclusion:** There is a significant improvement of quality of after TURP. [*Journal of National Institute of Neurosciences Bangladesh, 2019;5(2): 143-147*]

**Keywords:** Benign prostatic hyperplasia; Quality of life; Qmax; IPSS

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### Introduction

The symptoms of BPH, can adversely affect different aspects of quality of life (QoL)<sup>1-5</sup>. Many men with BPH and lower urinary tract symptoms (LUTS) wait until symptoms become significantly bothersome before seeking medical attention<sup>6</sup>.

Medical therapy is the first line therapy in moderately symptomatic patient however refractory patients may

require surgical intervention. Transurethral resection of the prostate (TURP) remains the gold standard for the treatment of benign prostatic hyperplasia, however the morbidity associated with the procedure has spurred investigators to develop alternative treatment options in patients with symptomatic benign prostatic hyperplasia<sup>7</sup>. The first World Health Organization consultation on benign prostatic hyperplasia adopted the AUA symptom

index with the addition of one quality of life (QoL) question and called it the International Prostate Symptom Score (IPSS)<sup>8</sup>. In the clinical setting, these questionnaires can be used to assess the severity of symptoms in men with lower urinary tract symptoms and to follow changes in symptoms over time and with treatment. Urinary symptoms are usually related to a subjective decrease in quality of life<sup>9</sup>. Additional questionnaires are also available to measure the impact of LUTS on men's quality of life, which can be improved after treatment. Currently, in the treatment of clinical BPH, this evaluation has focused on symptoms improvement in addition to clinical variables of voiding function, e.g. flow rates and post void residual urine volume (PVR). The IPSS had been shown to be a reliable instrument to quantify symptoms before and after TURP. This study was designed to find out effects of TURP on quality of life.

### Methodology

The present study was a purposive prospective study and 50 patients were included in the study according to inclusion and exclusion criteria. The study population were patients who attended the urology OPD of Shaheed Suhrawardy Medical College Hospital with LUTS suggestive of BPH. Inclusion criteria were patients with Prostate volume  $\geq 40$  gm/mL measured by USG, Peak urine flow rate (Qmax)  $< 10$  ml/sec, IPSS  $> 19$ , PVR  $> 100$  mL and exclusion criteria were, Patients with stricture urethra, Patients with BPH but suffering concomitant bladder carcinoma or bladder calculi, and Patients with neuropathic bladder. The clinical history of the patients, physical examination including digital Rectal examination findings, relevant investigations, international prostate symptom score (IPSS), quality of life score (QoL), peak urinary flow rate (Qmax), were recorded on a preformed data sheet. A detail data sheet was completed and this included particulars of the patient, history, results of physical examinations, relevant investigations as well as specific investigations. The patients were well explained and helped in expressing their symptoms and IPSS were calculated and recorded in the IPSS sheet. All patients who presented with LUTS suggestive of BPH were evaluated for a possible management by TURP. Thorough physical examination was done with special attention to urogenital system and nervous system. Digital rectal examination (DRE) was done in the urology out patient department to determine the prostate size and to exclude carcinoma prostate. Perianal sensation, anal tone and bulbo-cavernosus reflex,

sensory and motor response, jerks and reflexes, were examined to detect any neurological deficit. Urine routine examination with culture sensitivity testing, prostatic specific antigen (PSA) and serum creatinine were done to exclude urinary tract infection, carcinoma of prostate and renal failure respectively. Transabdominal USG was done to detect any hydronephrotic change in the kidneys, urinary stone disease, bladder wall thickness, maximum cystometric capacity, prostate size, and echotexture, any hypoechoic lesion in the prostate and postvoidal residual urine (PVR). Uroflowmetry was considered in all cases. After initial evaluation selected 50 patients were treated with transurethral resection of prostate. TURP was done under spinal anaesthesia. Patients were advised to come after 1 months and 3 months for follow up visits. In each visit, the patients were evaluated through history, physical examination and relevant investigations including IPSS, QoL score, PVR and uroflowmetry. All the data were recorded in a predesigned data sheet and statistical analyses of the results were obtained with Statistical Packages for Social Sciences (SPSS-13).

### Results

Out of all patients maximum 52.0% were within 50 to 59 years age group followed by 38.0% within 60 to 69 years and 10.0% within 70 and above year age group. Mean age of the respondents was  $58.92 \pm 7.58$  years and all patients were within 50 to 72 years age group (Table 1).

Table 1: Distribution of the patients by Age (n=50)

Age Group	Frequency	Percent
50 to 59 Years	26	52.0
60 to 69 Years	19	38.0
More than 70 Years	5	10.0
<b>Total</b>	<b>50</b>	<b>100.0</b>
Mean age (Range)	$58.92 \pm 7.58$ (50 to 72 years)	

The distribution of mean IPSS at different period of consultation was recorded. The mean with SD of IPSS of preoperative, 1st month and 3rd month were  $25.18 \pm 1.45$ ,  $15.00 \pm 1.07$  and  $8.14 \pm 0.76$  respectively (Table 2).

Table 2: Distribution of Mean IPSS at different period of consultation (n=50)

Period of Consultation	Mean $\pm$ SD IPSS	P value
Preoperative	$25.18 \pm 1.45$	$< 0.001$
1st month	$15.00 \pm 1.07$	$< 0.001$
3rd month	$8.14 \pm 0.76$	$< 0.001$

Table 3: Distribution of the patients by QoL score (n=50)

QoL score	Frequency	Percent
<b>Preoperative</b>		
o 5 (Unhappy)	35	70.0
o 6 (Terrible)	15	30.0
<b>After one month</b>		
o 3 (Mixed-equally satisfied & unsatisfied )	40	80.0
o 4 (Mostly dissatisfied)	10	20.0
<b>After three months</b>		
o 1(Pleased )	14	28.0
o 2(Mostly satisfied )	36	72.0

Out of all patients 70.0% had unhappy and 30.0% had terrible quality of life preoperatively before TURP. After one month of operation 80.0% mixed satisfied and unsatisfied and 20.0% mostly dissatisfied. After three months of operation 28.0% patients were pleased, 72.0% were mostly satisfied (Table 3).

Table 4: Mean Distribution of QoL score at Different Period of Consultation

Different period of Consultation	Mean±SD	P value
Pre-operative	5.30±0.46 (5-6)	<0.001
1st month	3.20±0.45 (3-4)	<0.001
3rd month	1.86±0.57 (1-2)	<0.001

Data are expressed as mean ±SD; figure in parenthesis indicate ranges. ANOVA followed by multiple comparison of Bonferroni test was done to measure the level of significance between different follow up.

The mean (±SD) of the QoL score was 5.30±0.46, 3.20±0.45, and 1.86±0.57 in pre operative, 1st month, and 3rd month respectively (Table 4).

Table 5a: Mean Distribution of Qmax (ml/sec) at Different Period of Consultation

Different period of Consultation	Mean±SD
Pre-operative	9.70 ± 1.20 (7-10)
1st month	15.78 ± 1.42 (12-18)
3rd month	18.78 ± 1.33 (15-21)

Table 5b: Level of Significance of Qmax Changes Between Different Period of Consultation

Different period of Consultation	p value
Pre operative vs. 1st month	<0.001
Pre operative vs. 3rd month	<0.001
1st month vs. 3rd month	<0.001

Data are expressed as mean ±SD; figure in parenthesis indicate ranges. ANOVA followed by multiple comparison of Bonferroni test was done to measure the level of significance between different follow up.

The mean (±SD) of the Q max was 9.70±1.20 ml/sec, 15.78±1.42 ml/sec, and 18.78±1.33 ml/sec in pre operative, 1st month, and 3rd month respectively (Table 5).

Table 6: Mean distribution of PVR (ml) at different period of consultation

Different period of Consultation	Mean±SD
Pre-operative	149.80 ± 24.39
1st month	29.60 ± 9.76
3rd month	13.96 ± 5.63

In this study 8(22.9%) patients with QoL score 5 had Qmax (7 to 8 mL/sec) and 27(77.1%) patients and Qmax (8-10 mL/sec); 10(66.7%) patients with QoL score 6 had Qmax (7 to 8 mL/sec) and 5(33.3%) patients with had Qmax (8 to 10 mL/sec). From this result it is evident that as QoL score increases urinary flow rate decreases (Table 7).

Table 7: Distribution of Qmax by QoL score in preoperative period (n=50)

Qmax (mL/s)	QoL score		Total
	5	6	
7 to 8	8(22.9)	10(66.7)	18(36.0)
8 to 10	27(77.1)	5(33.3)	32(64.0)
<b>Total</b>	<b>35(100.0)</b>	<b>15(100.0)</b>	<b>50(100.0)</b>

P value= 0.008 done by McNemar’s test; Figure within parentheses denoted corresponding percentage

In this study 12 patients (30.0%) with QoL score 3 had Qmax (12 to 15 mL/sec) and 28 patients (70.0%) with Qmax (15 to 18 mL/sec). 5 patients (50.0%) with QoL score 4 had Qmax (12 to 15 mL/sec) and 5 patients (50.0%) with Qmax (15 to 18mL/sec). It is evident that as QoL score increases urinary flow rate decreases (Table 8).

Table 8: Distribution of Qmax by QoL score after 1st month (n=50)

Qmax (mL/s)	QoL score		Total
	3	4	
7 to 8	12(30.0)	5(50.0)	17 (34.0)
8 to 10	28(70.0)	5(50.0)	33 (66.0)
<b>Total</b>	<b>40(100.0)</b>	<b>10(100.0)</b>	<b>50(100.0)</b>

P value= 0.001 done by McNemar’s test; Figure within parentheses denoted corresponding percentage

In this study 0(0.0%) patients with QoL score 1 had Qmax (15 to 18 mL/sec) and 14(100.0%) patients with Qmax (18 to 21 mL/sec); 20(55.6%) patients with QoL score 2 had Qmax (15 to 18 mL/sec) and 16(44.4%) patients had Qmax (18 to 21mL/sec). From these

findings it is evident that as QoL increases urinary flow rate decreases (Table 9).

Table 9: Distribution of Qmax by QoL score after 3rd months (n=50)

Qmax (mL/sec)	QoL score		Total
	1	2	
15 to 18	0(0.0)	20(55.6)	20(40.0)
18 to 21	14(100.0)	16(44.4)	30(60.0)
<b>Total</b>	<b>14(100.0)</b>	<b>36(100.0)</b>	<b>50(100.0)</b>

P value= 0.392 done by McNemar's test; Figure within parentheses denoted corresponding percentage

## Discussion

In the present study mean IPSS before TURP was 25.18±1.45 and at first follow up visit one month after TURP, IPSS was 15.0±1.07. After TURP statistically significant decrease in IPSS score was observed in comparison to IPSS before TURP (p<0.001). The mean IPSS after three months of TURP was 8.14±0.76. In post TURP state there was highly significant decrease in IPSS score than pre TURP state. This change was statistically highly significant and correlated with preoperative symptom severity (P<0.001). In Chalise and Agrawal<sup>10</sup> series preoperative IPSS was 23.4 and at three months follow up the mean IPSS reduced to 7.9. The results of these studies are consistent with the present study.

Out of all patients 70.0% had unhappy (5) and 30.0% had terrible (6) quality of life. After one month of operation only 2.0% patient was mostly satisfied (2), 76.0% mixed (3) and 22.0% mostly dissatisfied (4). After three month 24.0% patients were pleased (1), 66.0% were mostly satisfied (2) and 10.0% had mixed satisfaction (3).

The base line mean of the QoL score was 5.30±0.46. At first follow up visit one month after TURP, mean of the QoL score was 3.20±0.45 and second follow up visit three months after TURP it was 1.86±0.57. The QoL were improved from base line to first and second follow up. This change was statistically significant and correlated with preoperative symptom severity (p<0.001). In Chalise and Agrawal<sup>10</sup> series preoperative QoL score was 5.2. At three months follow up, the mean QoL score improved to 1.5. The result of these studies is also consistent with the present study.

Most of the patients presented with severe symptom associated with decreased QoL. After TURP, there was significant improvement in IPSS and QoL scores. The improvement was regarded as good out come and strongly related to preoperative symptom severity.

In the present study mean baseline Qmax of BPH before TURP was 9.70±1.20 ml/sec. This Qmax values are consistent with the study done by Roenborn et al<sup>11</sup>. The mean Qmax at first follow up visit after 1 month of TURP was 15.78±1.42 ml/sec which was significantly higher from baseline value (P<0.001). Mean Qmax at second follow up visit after 3 months of TURP was 18.78±1.33 ml/sec. The change was significantly higher from baseline value and 1<sup>st</sup> follow up visit (P<0.001). The baseline mean PVR was 149.80 ± 24.39 mL. At first follow up visit 1 month after TURP, PVR was 29.60 ± 9.76 mL and second follow up visit 3 months after TURP it was 13.96 ± 5.63 mL. There was significant improvement of PVR from base line to first and second follow up visits (p<0.001).

From the present study it was clear that in first follow up visit 1 month after TURP showed significant improvement of Qmax and PVR. Statistically significant change in different parameters of uroflowmetry were noted in this study (p<0.001) and this result is compatible with the study of Meyhoff et al<sup>12</sup>.

In the present study, there were improvement of Qmax, voided volume, voiding time and PVR on first and second follow up and all of them were statistically significant.

## Conclusion

The present study has revealed significant improvement of QoL score after TURP. There is an improvement of other parameters like Qmax and PVR.

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