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Outcome benefits to transurethral resection of the prostate in patients with benign prostatic hyperplasia at Medan regional hospital

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ABSTRACT

Background: Benign prostatic hyperplasia (BPH) is a pathologic process that cause of lower urinary tract symptoms (LUTS) in aging men. Transurethral resection of the prostate (TURP) is still the current gold standard of BPH treatment. International Prostate Symptoms Score (IPSS) and the quality of life (QoL) index are used for assessing the TURP results.
Objective: This study would like to show the benefits outcome of TURP in patients with BPH evaluated with IPSS score and QoL index in Medan regional hospital.
Methods: This research is a retrospective study of BPH patients that is treated with TURP at Universitas Sumatera Utara Hospital from September 2019 – August 2020. Patients will be divided into 2 groups, group 1 with patients who have a prostate size <80 grams and the second group with a prostate size> 80 grams. All patients who were included in this study were assessed for their complaints using the IPSS and QoL index before and after taking an operation. Statistical analysis was performed using independent t test and Mann Whitney test. The data were significant if the p value < 0.05.
Results: There are 60 patients enrolled in this study that treated with TURP. The mean age of patients in the group 1 was 69.57 ± 7.698 years and 69.84 ± 5.893 years in the group 2. There is no significant difference between group 1 and group 2 in postoperative IPSS and QoL results (p >0.05).
Conclusion: TURP procedure is preferable option of BPH for patients in any prostate size.

Latar Belakang: *Pembesaran prostat jinak (BPH) merupakan proses patologis yang menyebabkan keluhan lower urinary tract symptoms (LUTS) pada laki-laki usia lanjut. Transurethral resection of the prostate (TURP) masih menjadi pilihan utama dalam tata laksana BPH. International Prostate Symptom Score (IPSS) dan skala kualitas hidup (QoL) merupakan metode yang dapat digunakan untuk menentukan keberhasilan TURP.*
Tujuan: *Studi ini ingin mencari tahu manfaat penggunaan skoring IPSS dan indeks QoL dalam melihat keberhasilan TURP di rumah sakit di Medan.*
Metode: *Penelitian ini merupakan studi retrospektif pasien BPH yang menjalani pengobatan TURP di RSU Universitas Sumatera Utara periode September 2018 - Agustus 2020. Pasien dibagi menjadi 2 kelompok yaitu kelompok 1 dengan pasien yang memiliki ukuran prostat <80 gram dan kelompok kedua. kelompok dengan ukuran prostat> 80 gram. Semua pasien yang dilibatkan dalam penelitian ini dinilai keluhannya menggunakan skoring IPSS dan indeks QoL sebelum dan sesudah menjalani operasi. Analisis statistic dilakukan dengan menggunakan uji independen t-tes dan uji Mann Whitney. Data dinyatakan bermakna jika nilai p<0.05.*

Hasil: *Terdapat 60 pasien yang masuk dalam penelitian ini dan dilakukan tindakanTURP. Usia rata-rata pasien pada kelompok 1 adalah 69.57 ± 7.698 tahun dan 69.84 ± 5.893 tahun pada kelompok 2. Tidak ada perbedaan yang signifikan antara kelompok 1 dan kelompok 2 dalam hasil IPSS dan kualitas hidup pasca operasi (p> 0,05).*

Kesimpulan: *Prosedur TURP merupakan pilihan terapi BPH pada pasien dengan ukuran prostat apapun.*

INTRODUCTION

Benign prostatic hyperplasia (BPH) is a pathologic condition that causes lower urinary tract symptoms (LUTS) in aging men. It is defined as a mass-related increase in the prostate caused by the proliferation of prostatic cells and increased urethral resistance, and its incidence rate rises with age.[1,2] Benign prostatic hyperplasia affects nearly half of men over the age of 50, and by the age of 80, 90% of men have been diagnosed with LUTS symptoms ranging from mild to severe.[3,4]

Storage symptoms (urgency, frequency, nocturia, and urge urine incontinence), voiding symptoms (reduced flow and a sense of incomplete emptying), and post-void dribbling are the three types of LUTS. Validated surveys, such as the International Prostate Symptom Score (IPSS), are the best way to measure LUTS.[4] The IPSS and the quality of life (QoL) index can be used to measure the severity of the ailment. The QoL index is more essential than the IPSS, and a QoL score of 3 or above is deemed troublesome. A QoL score of 3 or above can also be used to assess a patient's reaction to therapy.[5,6]

The most prevalent therapy technique for BPH is transurethral prostate excision, which is the current gold standard. In deciding whether or not to conduct this procedure, there is no specific prostate size restriction in the literature. The most prevalent therapeutic technique in BPH treatments is transurethral prostate removal, which is considered the gold standard for BPH treatment. There is no accepted prostate size restriction in the publications for this treatment; it is depending on the urology specialist's skill, the time of resection, and the equipment employed.[7]

The IPSS can be used to assess or evaluate patients before to therapy, and symptom improvement following a TURP has been demonstrated to be predictive. As the severity of symptoms increases, so does the likelihood of improvement after therapy, as measured by the IPSS scoring system.[8] While IPSS 20-35 has a weak association to obstruction but can evaluate severity, it should not be used alone for further care of male LUTS. Of those with severe symptoms, 63 percent were obstructed while 37 percent were not. The quality of life is also more essential than the IPSS score.[5,9] As a result, the goal of this study is to demonstrate the advantages of TURP in patients with BPH as measured by the IPSS score and QoL.

METHODS

Patients characteristic

From September 2019 to August 2020, BPH patients treated with TURP at Universitas Sumatera Utara Hospital were studied retrospectively. Patients with BPH who have LUTS and are scheduled for surgery are included in this research. The TURP procedure was chosen and conducted at the Universitas Sumatera Utara Hospital. Patients were be separated into two groups: group 1 were patients with a prostate size of fewer than 80 grams, and group 2 were patients with a prostate size of more than 80 grams. Individuals with a diagnosis of BPH were included in the research; patients with the same symptoms but other causes, such as bladder tumors, neurogenic bladder, or recurrent BPH with a previous history of TURP surgery, were excluded.

The IPSS dan QoL index

Before undergoing surgery, all patients in this research were examined for their complaints using the IPSS and QoL. The examination findings were collected in the form of complaints, physical examinations, including digital rectal examinations, blood exams, renal

function and electrolytes, and an estimate of prostate weight from ultrasonography. Following the TURP procedure, the patient's QoL and IPSS score are assessed (pre and post test of QoL and IPSS score).

The IPSS dan QoL indexs were conducted over the phone with the patient, who answers each question. We split the IPSS Score interpretation into three classes: mild with a score of 7 or less, moderate with a score of 8-19, and severe with a 20-35. Determination of IPSS and QoL scoring is carried out according to Table 1 and 2.

Table 1. International Prostate Symptomps Score.[10]

Symptom	Not at all	<1 time in 5	Less than half the time	About half the time	More than half the time	Almost always
1. Incomplete emptying						
Over the past month, how often have you had a sensation of not emptying your bladder completely after you finished urinating?	0	1	2	3	4	5
2. Frequency						
Over the past month, how often have you had to urinate again less than 2 hours after you finished urinating?	0	1	2	3	4	5
3. Intermittency						
Over the past month, how often have you found you stopped and started again several times when you urinated?	0	1	2	3	4	5
4. Urgency						
Over the past month, how often have you found it difficult to postpone urination?	0	1	2	3	4	5
5. Weak stream						
Over the past month, how often have you had a weak urinary stream?	0	1	2	3	4	5
6. Straining						
Over the past month, how often have you had to push or strain to begin urination?	0	1	2	3	4	5
	None	**1 time**	**2 times**	**3 times**	**4 times**	**≥5 times**
7. Nocturia						
Over the past month, how many times did you most typically get up to urinate from the time you went to bed at night until the time you got up in the morning?	0	1	2	3	4	5

TURP procedure

The diathermy was adjusted at 80–100 Watts for cutting and 40–50 Watts for coagulation, and the operation was configured as a non-continuous Olympus working element. Irrigation was done with a body warm NaCl 0.9% solution. Resection began in the central lobe of the prostate and progressed to the left

Table 2. Quality of Life Assestment.[10]

Quality of life due to urinary symptoms	Delighted	Pleased	Mostly satisfied	Mixed—about equally satisfied and dissatisfied	Mostly dissatisfied	Unhappy	Terrible
If you were to spend the rest of your life with your urinary condition just the way it is now, how would you feel about that?	0	1	2	3	4	5	6

lobe at 4-5 and 1 o'clock, then to the right lobe of the prostate at 7–8 o'clock and onward at 11–12 o'clock. Controlling bleeding was accomplished by coagulating the source of the bleeding to the greatest degree feasible. The prostate chip was removed with an Ellik evacuator, and a 22–24 Fr 3-way catheter was then placed, along with irrigation with 0.9 percent NaCl at 80–100 drops per minute. TURP syndrome, bleeding, blood clot retention, and urethral stricture were all reported in the patients' medical records during and after surgery.

Statistical Analysis

Data is collected from patients' medical records and examined descriptively to compare pre- and post-operative symptoms, complications, laboratory results, and the IPSS score for quality of life (QOL). An independent T-test and a Mann-Whitney U-test were used to analyze the mean of IPSS and QoL scores. If the p-values less than 0.05, the difference was statistically significant.

RESULTS

This research includes 60 individuals who have undergone TURP surgery (Table 3). Patients are classified into two groups: those with a prostate size less than or equal to 80 grams, and those with a prostate size greater than or equivalent to 80 grams. Patients in group 1 were 69.57+7.698 years old on average, whereas patients in group 2 were 69.84+5.893 years old on average. The average prostate size in groups 1 and 2 was 56.63 (38–80) grams and 91.48 (82-137) grams, respectively. There were no significant differences ($p > 0.05$, Tables 1 and 2) in IPSS and QoL scores between patients in groups 1 and 2 before TURP surgery (pre-operative) and after TURP surgery (post-operative).

Table 3. Prostate size distribution

Size (grams)	Total patient
30-40	5
41-50	3
51-60	5
61-70	6
71-80	11
81-90	4
91-100	4
101-110	5
111-120	5
121-130	4
131-140	8

Table 4. Results of pre- and post-operative IPSS scores

	Preoperative (mean)			Postoperative (mean)		
	Group 1 <80gram	Group 2 >80gram	p-value	Group 1 <80gram	Group 2 >80gram	p-value
Incomplete emptying	4.17	4.08	0.476	0.71	0.88	0.776
Frequency	3.43	3.28	0.243	0.34	0.48	0.405
Intermittency	4.51	4.36	0.216	0.49	0.68	0.446
Urgency	4.14	3.92	0.189	2.29	2.00	0.272
Weak Stream	4.74	4.68	0.597	0.83	0.80	0.929
Straining	4.49	4.32	0.391	0.37	0.28	0.672
Nocturia	3.71	3.64	0.743	1.97	2.20	0.445

Table 5. Results of pre- and post-operative QoL scores

	Preoperative			Postoperative		
	Group 1 <80gram	Group 2 >80gram	p-value	Group 1 <80gram	Group 2 >80gram	p-value
QoL (mean, SD)	5.71 (0.458)	5.68 (0.476)	0.777	2.89 (0.758)	2.92 (0.997)	0.795

DISCUSSION

The major objective of BPH surgical treatment options is to reduce patient medical difficulties, lower the rate of complications, improve quality of life and urine flow, and eliminate the need for future surgery.[11,12] Compared to other surgery operating methods, TURP is still the current first option for BPH treatments.[13] TURP procedures are used to treat almost all patients with BPH who have various indications for the procedure, such as acute urine retention, failed catheter-free trial (TwoC), urolithiasis, reduced renal function, and other BPH-related problems.[7,14,15] Even though the concept of "big" prostate is still controversial and relies on the subjective opinion of the operators, open prostatectomy in big prostates (>80 grams) is still considered a treatment option.

Intraoperative and postoperative bleeding and TURP syndrome are common perioperative problems in individuals with prostate sizes more than 80 grams. More advanced operating instruments, drainage fluids, and surgical methods, on the other hand, have resulted in a significant decrease in the risk of complications, including the occurrence of TUR syndrome, which is now fewer than 1%.[13]

Massive bleeding, acute urinary retention, retention owing to a blood clot, and urinary tract infection are all potential consequences of TURP. On the other hand, the perioperative mortality rate is quite low (0.1 percent) in the first 30 days. Urinary incontinence, bladder neck stenosis, urethral stenosis, erectile dysfunction, and acute urinary retention (AUR) are late complications that might emerge more than a month after surgery.[7]

Open prostatectomy is the most invasive surgical technique. According to a recent study, this procedure has a high morbidity rate, with the most hazardous risk to consider being bleeding that necessitates transfusion, with a rate of 7–14 percent.[7,16] Meanwhile, perioperative fatalities in the first month are less than 0.25 percent. Contractures in the bladder neck, urethral stricture, and incontinence are examples of late complications.[7,17]

In our study, statistical analysis indicated that the preoperative IPSS levels were not significantly different. This discovery is in contrast to the findings of Joshi et al., who found substantial findings on inadequate IPSS emptying in two

distinct groups, even though various IPSS parameters showed identical results to our findings. There was no significant difference in pre- and post-operative quality of life (QoL) values for both groups in our investigation, however the prior literature reported significant findings, namely 3.22 in group 1 and 4.26 in group 2 with p-values 0.05, however this study did not compare QoL following operation.[18]

CONCLUSION

TURP procedure is preferable option of BPH for patients in any prostate size, with the advantage of lower complication for the patients with prostate size > 80 grams. Estimated prostate volume is not related with the value of post-TURP IPSS.

CONFLICT OF INTEREST

There is no conflict of interest from all authors.

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REFERENCES

1. Welliver C, Helo S, McVary KT. Technique considerations and complication management in transurethral resection of the prostate and photoselective vaporization of the prostate. Translational andrology and urology. 2017; 6: 695-703.
2. Palaniappan S, Kuo TL, Cheng CW, Foo KT. Early outcome of transurethral enucleation and resection of the prostate versus transurethral resection of the prostate. Singapore Medical Journal. 2016; 57(12): 676-80.
3. Madersbacher S, Sampson N, Culig Z. Pathophysiology of benign prostatic hyperplasia and benign prostatic enlargement: A mini-review. Gerontology. 2019; 65(5): 458-64.
4. Skinder D, Zacharia I, Studin J, Covino J. Benign prostatic hyperplasia: A clinical review. Journal of the American Academy of Physician Assistants. 2016; 29(8): 19-23.
5. Foo KT. Pathophysiology of clinical benign prostatic hyperplasia. Asian Journal of Urology. 2017; 4: 152-157.
6. Foo KT. What is a disease? What is the disease clinical benign prostatic hyperplasia (BPH)? World Journal of Urology. 2019; 37: 1293-1296.
7. Ng M, Baradhi KM. Benign prostatic hyperplasia. BTI - StatPearls (2020).
8. Sarıer M, Duman I, Demir M, Yüksel Y, Emek M, Kukul E. The outcomes of transurethral incision/resection of the prostate (TUIP/TURP) performed early after renal transplantation. Turkish Journal of Urology. 2018; 44: 172-177.
9. Kim EH, Larson JA, Andriole GL. Management of benign prostatic hyperplasia. Annual Review of Medicine. 2016; 67: 137-151.
10. Liao CH, Chung SD, Kuo HC. Diagnostic value of International Prostate Symptom Score voiding-to-storage subscore ratio in male lower urinary tract symptoms. International Journal of Clinical Practice. 2011;65(5):552-8.
11. Macey MR, Raynor MC. Medical and surgical treatment modalities for lower urinary tract symptoms in the male patient secondary to benign prostatic hyperplasia: A Review (2016). Seminars in Interventional Radiology. 2016; 33(3): 217-223.
12. Nunes RLV, Antunes AA, Constantin DS. Contemporary surgical treatment of benign prostatic hyperplasia. Revista da Associacao Medica Brasileira. 2017; 63(8): 711-716.
13. Yucel M, Aras B, Yalcinkaya S, Hatipoglu NK, Aras E. Conventional monopolar transurethral resection of prostate in patients with large prostate (≥80 grams). Central European Journal of Urology. 2013; 66, 303-308.
14. Huang LK, Chang YH, Shao IH, Lee TL, Hsieh ML. Clinical outcome of immediate transurethral surgery for benign prostate obstruction patients with acute urinary retention: More radical resection resulted in better voiding function. Journal of clinical medicine. 2019; 8: 1278.
15. Teo JS, Lee YM, Ho HSS. An update on trans-

urethral surgery for benign prostatic obstruction. Asian Journal of Urology. 2017; 4: 195-198.
16. Joniau SG, Van Baelen AA, Hsu CY, Van Poppel HP. Complications and functional results of surgery for locally advanced prostate cancer. Advances in urology. 2012; 706309.
17. Bortnick E, Brown C, Simma-Chiang V, Kaplan SA. Modern best practice in the management of benign prostatic hyperplasia in the elderly. Therapeutic Advances in Urology. 2020; 12: 1756287220929486.
18. Joshi HN, De Jong IJ, Karmacharya RM, Shrestha B, Shrestha R. Outcomes of transurethral resection of the prostate in benign prostatic hyperplasia comparing prostate size of more than 80 grams to prostate size less than 80 grams. Kathmandu University medical Journal. 2014; 12(47) 163-7.