

ORIGINAL PAPER

The Evaluation of Impact of BPH Surgical Treatment with the Open Prostatectomy and Transurethral Resection of the Prostate Methods on the Quality of Life

Snjezana Milicevic, Predrag Grubor, Nenad Lucic
Clinical Center University of Banjaluka, Bosnia and Herzegovina

Introduction/Objective. Benign prostatic hyperplasia is one of the most common diseases in older men. The objective of this study was to evaluate the impact of the surgical treatment of the benign prostatic hyperplasia (BPH) with the methods of open prostatectomy (OP) and transurethral resection of the prostate (TURP) on the quality of life. **Methods.** The research material was based on 80 patients, out of whom 40 patients were treated with the method of open prostatectomy (Group A), and the other 40 patients with the method of transurethral resection of prostate gland (Group B) due to benign prostatic hyperplasia. All patients were under the age of 80 years old (approximate age in Group A 70.23 with variation interval of 21 years old, and in Group B 69.37 with variation interval of 22 years old), with the International Prostate Symptom Score (IPSS) value >19 points, postvoid residual urine higher than 150 ml, the weight of benign prostatic gland hyperplasia tissue over 30 grams for method of prostate transurethral resection, and over 80 grams for the method of open prostatectomy. The quantification of the quality of life, as a consequence of urinary symptoms, was done by the Quality of Life Index (QLI) which is question N° 8 in IPSS. All patients were determined the value of this score before the operation, and then in postoperative period in time intervals of 4.8 and 12 weeks. **Results.** The QLI arithmetic mean, before the operation, was 5.55 points in Group A, and 5.45 points in Group B. During postoperative checkups in time intervals of 4.8 and 12 weeks, the arithmetic means in Group A were 0.975, 0.450 and 0.100 points, and in Group B 1.850, 1.700 and 1.575 points. By analyzing the obtained results, there was a highly statistically significant difference between preoperative test results and the results during all the postoperative checkups in both groups, A and B. By testing the difference of the QLI arithmetic mean between the patients in both groups, preoperatively there was no statistically significant difference, but during all postoperative checkups, there was a highly statistically significant difference between the test values. **Conclusion.** The surgical treatment of BPH leads to significant improvement of the quality of life, as a consequence of urinary symptoms. The improvement of the quality of life was more evident in patients whose BPH was treated with the OP method. **KEY WORDS:** BENIGN PROSTATIC HYPERPLASIA, DISEASE-SPECIFIC QUALITY OF LIFE, OPEN PROSTATECTOMY, TRANSURETHRAL RESECTION OF PROSTATE

1. INTRODUCTION

Benign prostatic hyperplasia (BPH) is a frequent disease among men >50 yr., and its incidence increases with age (1).

BPH is characterized by benign prostatic enlargement (BPE) and can be responsible for lower urinary tract symptoms (LUTS) that include obstructive/voiding symptoms and irritative/or storage symptoms. Voiding symptoms include: weak urinary flow, hesitancy, intermittency, terminal dribbling and incomplete emptying, while storage symptoms include frequency, nocturia, urgency, urge incontinence and dysuria. The prevalence of LUTS in the male population increase with age and has been estimated to be 20-25% for middle-aged men and 40-70% for men aged 70 years (2, 3).

Many urologists use symptoms as a base for establishing diagnosis of subvesical obstruction as well as for the evaluation of treatment successfulness. Many symptom – scores enable objectivization of symptoms i.e. complaints in patients with LUTS and/or BPH. Boyarski (4) was one of the first who discovered such scores, and later was followed by Madsen and Coiversen (5), then Fowler, etc.

In 1992, the American Urologists Association (AUA) published Symptom Score Index which was adopted by the World Health Organization in 1993 as the International Prostate Symptom Score (I-PSS) (10). It consists of 7 same questions referring to LUTS as in AUA Symptom Index with additional question N° 8 referring to disease specific

quality of life (QLI). It became a component in evaluation of patients with LUTS and/or BPH and is recommended as a precise means i.e. a method in diagnostics and treatment result follow-up in such patients.

Although it is not life-threatening, BPH with its clinical manifestation as LUTS reduces the patients quality of life. Sleeping problems can cause numerous disorders in terms of increased risk of developing cardiovascular diseases, metabolic diseases, depression, as well as increased risk of falling and having consequent bone fractures, etc. (7, 8, 9, 10, 11) In the year 2011, medical therapy is universally the first line intervention for virtually all men presented with LUTS secondary to BPH. Medical therapy alone or in combination does not achieve the degree of effectiveness as surgery.

TURP for many years has been considered as the gold standard for surgical treatment of BPH. Symptoms relief, improvement in maximum flow rate and reduction of postvoid-residual urine have been reported in several experiences. In 1999 TURP represented the 81% surgical treatment for BPH versus 39% of 2005, and the future will show if this is a marketing driven change or if there is a real advantage in new technologies (12).

In case of prostate of very large size, the gold standard approach is still open prostatectomy, but also in this case the challenge is ongoing, with minimally invasive laser prostatectomy, laparoscopic approach and most recently robotic approach.

Due to BPH prevalence and its impact on quality of life, and its multi-mode treatment, it is necessary to evaluate the impact of different treatment methods on the quality of life, as a consequence of urinary symptoms.

2. OBJECTIVE

The objective was to evaluate the impact of surgical treatment of BPH with the OP and TURP methods on the quality of life.

3. MATERIAL AND METHODS

The research material was based on 80 patients, out of whom 40 patients

were treated with the method of open prostatectomy (group A), and the other 40 patients with method of transurethral resection of the prostate (group B) due to benign prostatic hyperplasia at Clinic of Urology, Clinical Center University of Banjaluka. All patients were under the age of 80 years old (approximate age in the group A 70, 23 with variation interval of 21 years old, and in the group B 69, 37 with variation interval of 22 years old), with the IPSS value >19 points, postvoid residual urine higher than 150 ml, the weight of benign prostatic gland hyperplasia tissue over 30 grams for method of prostate transurethral resection, and over 80 grams for the method of open prostatectomy.

Two fundamental reasons for the OP method were: the weight (size) of the BPH tissue and the association of BPH with the bladder calculus and diverticulosis, hydrocele, inguinal hernia, the urethra structure. The IPSS has been used in the research, question N° 8 (Quality of Life Index-QLI) which relates to disease – specific quality of life. The question related to quality of life, as a consequence of urinary symptoms was: “If you had to spend the rest of your life with the voiding situation as it is now, how would you describe it? The answers are numbered in the following way: 0-fascinated, 1-satisfied, 2-mainly satisfied, 3- semi-satisfied (equally satisfied and dissatisfied), 4-mainly dissatisfied, 5-dissatisfied and 6-desperate. The method of work was as follows:

Preoperative determination of IPSS values (Question N°.8-QLI, twice), by individual examination of all examinees

One group of patients with BPH was treated with the OP method (Group A), and the other with the TURP method

(group B) After the operative intervention, in time intervals of 4, 8 and 12 weeks, all patients re-answered question N° 8 (QLI) contained in IPSS.

According to their age, patients have been presented in Table 1 , Figure 1 and 2.

Age	GROUP A number of patients and %		GROUP B number of patients and %	
	50-59.	1	2.50	1
60-69.	19	47.50	19	47.50
70-79.	18	45.00	19	47.50
80-89.	2	5.00	1	2.50
Total	40	100.00	40	100.00

TABLE 1. Patients according to their age

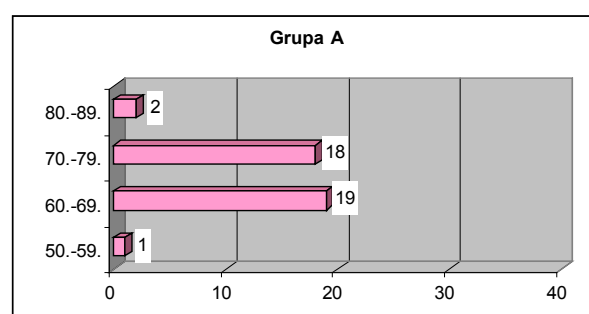


FIGURE 1. Patients according to their age (Group A).

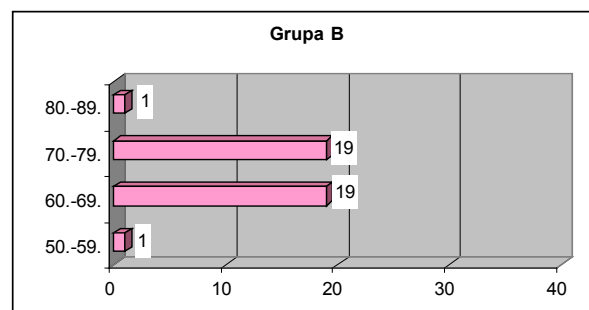


FIGURE 2. Patients according to their age (Group B).

The average age of patients in Group A was 70.23, and in Group B 69.37. According to preoperative values of answers to question N° 8 in IPSS, QLI, the patients have been presented in Tables 2 and 3.

QLI values	GROUP A	GROUP B
	No of patients	No of patients
0	0	0
1	0	0
2	0	0
3	0	0
4	0	0
5	18	22
6	22	18

TABLE 2. The QLI values in observed groups

Note: Question related to quality of life, as a consequence of urinary symptoms was: "If you had to spend the rest of your life with the voiding situation as it is now, how would you describe it? The answers are numerated in the following way: 0-fascinated, 1-satisfied, 2-mainly satisfied, 3- semi-satisfied (equally satisfied and dissatisfied), 4-mainly dissatisfied, 5-dissatisfied and 6-desperate.

Groups	AM	SD
A	5.550	0.504
B	5.450	0.504

TABLE 3. The QLI arithmetic means in observed groups

4. RESULTS

The quantification of quality of life, as a consequence of urinary symptoms, after operative treatments was carried out through IPSS (question N° 8, QLI) in time intervals of 4, 8 and 12 weeks, as shown in Table 4.

Testing the difference of QLI arithmetic means between the test results before the operation, during the first, second and third checkup was performed by t-test for both groups A and B, and the following tables show it.

Variables	Test result t p	Conclusion
P-IQL: K1-IQL	52.659 0.000	p<0.01
P-IQL: K2-IQL	45.499 0.000	p<0.01
P-IQL: K3-IQL	57.737 0.000	p<0.01

TABLE 5. Comparison of QLI preoperative results and the results of the same test during the first, second and third checkup in Group A.

Note: P-QLI Preoperative Index Quality of Life, K1-IQL first checkup, K2-IQL second checkup, K3-IQL third checkup

Variables	Test result t p	Conclusion
P-IQL: K1-IQL	33.893 0.000	p<0,01
P-IQL: K2-IQL	33.541 0,000	p<0.01
P-IQL: K3-IQL	35.704 0,000	p<0.01

TABLE 6. Comparison of QLI preoperative results and the results of the same test during the first, second and third check up in Group B.

Note: The symbols of variables used match the ones in the previous table

Tables 5 and 6 show that there is a highly statistically significant differ-

Time interval of giving an answer about the quality of life, as a consequence of urinary symptoms	GROUP A AM SD	GROUP B AM SD
4 weeks	0.975 0.158	1.850 0.580
8 weeks	0.450 0.504	1.700 0.464
12 weeks	0.100 0.304	1.575 0.501

TABLE 4. The QLI arithmetic means during postoperative checkups.

ence between preoperative QLI results and the results of the same test during the first, second and third checkups in both groups, A and B.

The testing of arithmetic mean difference of preoperative values as well as of values during the first, second and third checkups between groups A and B have also been conducted in this study.

Variables	Test results t p	Conclusion
P-IQL	0.888 0.3775	p>0.05
K1-IQL	9.212 0.0000	p<0.01
K2-IQL	11.541 0.0000	p<0.01
K3-IQL	15.930 0.0000	p<0.01

TABLE 7. Comparison of QLI results between groups A and B, preoperatively and during the first, second and third checkups.

Note: The symbols of variables used match the ones in the previous table

Table 7 shows that there has been no statistically significant difference between total sums of QLI preoperatively between groups A and B, but during all postoperative checkups, there has been a highly statistically significant difference between the test values.

5. DISCUSSION

Until more than three decades ago, the open prostatectomy was the most frequent approach and method for surgical treatment of BPH.

Development of endoscopy and other methodologies has led to significant reduction of use of this methodology in the BPH treatment and has classified TURP (transurethral resection of the prostate) as a gold treatment method, but because of the risk of bleeding and TURP syndrome, patient with large prostates are usually offered open prostatectomy, which provides excellent removal of prostatic tissue. Although some experts think that prostate over 80 g should be treated by open prostatectomy, there is no consensus on

this issue yet (13).

It is the fact that there are no opponents to the currently accepted attitude that the improvement of life quality, as a consequence of urinary symptoms, presents the most important goal of BPH treatment from the patient's perspective (14).

IPSS is a simple and valid measure that can be useful for assessing treatment outcomes in men with symptomatic BPH (15).

Although various validated QoL instruments have been used to assess disease-specific QoL in men with LUTS/BPH, the IPSS-QoL is the easiest to administer and the most widely accepted and used (16).

Michael P et al also concluded in their study that IPSS is a convenient tool for assessing disease-specific QoL that can be used when determining treatment strategies and evaluating treatment outcomes in men with LUTS/BPH (17).

Taking into consideration the fact that the objective of this paper was to evaluate and compare the impact of BPH surgical treatment with the OP and TURP method on quality of life, as a consequence of urinary symptoms, the same one has been quantified by question N° 8 in IPSS, Index Quality of Life.

In 100% of our sample, preoperative values of the test have shown that patients were completely dissatisfied or desperate due to the quality of life as a consequence of urinary symptoms i.e. 18 patients in Group A and 22 patients in Group B were dissatisfied and 22 patients in Group A and 18 patients in Group B were desperate. The arithmetic mean of the test, preoperatively, in Group A was 5,55 and in Group B 5,45 points.

Marszalek et al have analyzed the symptom score after TURP in 25 random and controlled studies between 1996 and 2006 (18). All studies have

shown dramatic improvement of the symptom score which was 62% after 12 months and thus the quality of life has significantly been improved.

Bearing in mind all this, our study has shown that the quality of life quantified through IPSS-QoL, as an AM, in Group A was, postoperatively, after 4 weeks 0.975, after 8 weeks 0.450 and after 12 weeks 0,100 points. As a matter of fact, the AM of evaluated QLI among these patients, postoperatively, (12 weeks after operation) was 0.100 points compared to the AM preoperatively which was 5.500 points. Therefore, it shows that the quality of life has improved by 98.2 %. The analysis of obtained results shows that there has been a highly statistically significant difference between preoperative test results and the results during all postoperative checkups.

In the other group of patients treated with TURP method (Group B), the postoperative test AM after 4 weeks was 1.850, after 8 weeks 1,700 and after 12 weeks 1.575 points. As a matter of fact, the AM of evaluated QLI among these patients, postoperatively, (12 weeks after operation) was 1.575 points compared to the AM preoperatively which was 5.450 points. Therefore, it shows that the quality of life has improved by 71.11 %.

The greatest advantages of OP compared to TURP are decreased need to have a re-operation of BPH, better removal of obstructive tissue and avoidance of TURP syndrome (12). The fact that OP does the best removal of obstructive BPH tissue, and therefore reduces even more the voiding symptoms, it can be expected that it is more effective in improving the quality of life, as a consequence of urinary symptoms.

By testing the QLI AM difference between patients treated with OP and

TURP, our study has shown that there was no statistically significant difference before operation, but during all postoperative checkups, there has been a highly statistically significant difference between the test values, in terms of greater quality of life improvement after OP.

6. CONCLUSION

The surgical treatment of BPH brings about significant improvement of the quality of life, as a consequence of urinary symptoms.

The improvement of the quality of life is more evident in patients whose BPH was treated with the OP method.

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