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Comparative Study of Outcome and Quality of Life after Surgical and Medical Management of Benign Enlargement of Prostate

[1]Rushabh Sureshchandra Maisuria, [2]Tejas Bhulabhai Patel, [3]Jay Satishbhai Chaudhari and [4]Rajkumar Singh

[1,3]Department of General Surgery, GMERS Medical College, Navsari, Gujarat, India

[2,4]Department of General Surgery, Government Medical College, Surat, Gujarat, India

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Corresponding Author
Tejas Bhulabhai Patel,
Department of General Surgery, Government Medical College, Surat, Gujarat, India
tejas_patel138@yahoo.co.in

Author Designation
[1]Associate professor
[2]Assistant professor
[3]Senior Resident
[4]Junior Resident

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Abstract
Benign prostatic hyperplasia (BPH) affects men over 50, with higher prevalence in Asia. Symptoms increase with age, leading to significant prostate enlargement (BPE) and lower urinary tract symptoms (LUTS) in 28% of cases, often causing bladder outlet obstruction (BOO). Despite advancements in laser treatments, transurethral resection of the prostate (TURP) remains common, especially in developing countries. This study compares BPH management outcomes. This 1.5-year observational study, starting in September 2019 at a South Gujarat hospital, included symptomatic BPH patients aged 50-80. Ethics approval was obtained. Exclusions were asymptomatic BPH, prostatic carcinoma, and unwilling participants. Pre- and post-operative evaluations included IPSS, QOL scores, prostate size, and lab tests. Treatments included watchful waiting, medical management, and surgery, with quarterly follow-ups for a year. Ninety patients were included, with age distribution as follows: 41.1% (50-60 years), 46.7% (60-70 years), and 12.2% (over 70 years). Patients were categorized by IPSS score into mild, moderate, and severe groups. Post-treatment, the mild group showed an 8.09% increase in IPSS score, while the moderate and severe groups showed reductions of 45.97% and 67.98%, respectively. Quality of life improved in both moderate and severe groups, with significant post-treatment score reductions. Among treatment modalities, surgical intervention showed the greatest improvement in both IPSS and QOL scores, followed by medical management. Watchful waiting showed no significant improvement. Surgical treatment for BPH offers substantial improvements in quality of life for patients with moderate to severe symptoms. Medical therapy also yields significant benefits for those with moderate symptoms. However, patients with mild symptoms experience a decline in quality of life with watchful waiting, suggesting the need for more proactive management. These findings highlight the importance of tailored treatment strategies based on symptom severity and patient-specific factors.

INTRODUCTION

Benign prostatic hyperplasia (BPH) is the most common condition affecting men those are 50 years of age and above[1]. A multicentre study performed in different countries in Asia showed that the age-specific percentages of men with moderate-to-severe symptoms were higher than those in America[2]. The prevalence increases from 18% for men in their 40 years to 56% for those in their 70 years of age[2]. Fifty to 70% of men with histological features of BPH also have a prostate volume of more than 25gms (BPE), and up to 28% have moderate to severe LUTS(Lower Urinary Tract symptoms)[3]. BOO (bladder outlet obstruction) was detected in about 52% of the asymptomatic and 60% of the symptomatic men with BPH[4]. Troublesome LUTS can occur in up to 30% of men older than 65 years[4] and all of these has a huge impact on quality of life of a person.

In 2010, the American Urological Association (AUA) launched an initiative to identify national research priorities in urology, known as the AUA Foundation National Urology Research Agenda (NURA) which defines the top issues facing urology, and BPH is identified as an area for scientific opportunity[5]. Transurethral resection of the prostate is the second most common surgery[6] that a male of age greater than 50 years undergoes, second only to cataract surgery. TURP has withstood the test of times in being the gold standard treatment in the management of BPH[2]. The advent of use of LASERs in endourology has put the exclusivity of TURP in the management of BPH in jeopardy. Holmium laser (HoLEP) is upcoming as the standard procedure[7], though it is still questioned by many urologists and in developing countries the prohibitive cost of these lasers makes their widespread public use difficult. Thus, TURP still remains the widely used technique for the management of BPH[8].

With the advent of newer technologies in diathermy and visual scopes TURP has turned from a complication fraught procedure to a relatively safe one. But still the risks of TURP syndrome and electrolyte disturbances do exist especially in cardiac risk patients accentuated by the use of glycine as an irrigant fluid. The advent of bipolar diathermy has made the use of normal saline as a safe irrigant fluid [9].

As per AUA guidelines TUIP (Trans Urethral Incision of Prostate) is an appropriate and effective treatment alternative in men with moderate to severe LUTS and/or who are significantly bothered by these symptoms when prostate size is less than 30 grams. The choice of approach should be based on the patient's individual presentation including anatomy, the surgeon's experience and discussion of the potential benefits and risks for complications[6].

For BPH with small gland size, treatment options are watchful waiting, medical management, and surgical options. In our population, periodic follow up and cost consensus have made non-invasive options less feasible, so TUIP is the treatment of choice in these patients and also TUIP does not require any special instruments other than those used for TURP. With Many Randomized Control Trials have already established the efficacy of these two procedures in gland size of 30-50 grams[10,11]. The presence of cultural, social, literacy barriers restricted the collection of details regarding sexual function, retrograde ejaculation. Hence IPSS (International Prostate Symptom Score), QOL (Quality of Life), PFR (Peak Flow Rate) and PVR (Post Void Residual Volume) are the variables to assess outcome post treatment.
Keeping this in mind the study is aimed at studying the outcome according to different modalities of management.

MATERIALS AND METHODS

This was an observational comparative clinical study. The study was conducted over a period of one and half year starting September 2019 at a tertiary care hospital of South Gujarat. The Institutional Ethics Committee for Biomedical and Health Research permission was taken before enrolment of the participants.

Inclusion Criteria:

- All patients with more than 50 and less than 80 years of age with symptomatic BPH,
- Patients taking treatment of BPH on OPD (Outdoor Patient Department) or IPD (Indoor Patient Department) basis
- Patients who were willing to take part in study were included in study.

Exclusion Criteria:

- Patients less than 50 and more than 80 years of age,
- Patients who were accidentally diagnosed to have BPH and were not having any LUTS symptoms,
- Prostatic carcinoma patients and
- All patients who were not willing to be part of study were excluded from the study

All patients of LUTS symptoms were graded according to International Prostate Symptom Score (IPSS) and Quality of Life Score (QOL) preoperatively and postoperatively. Complete history and physical examinations were done; Prostate size was determined by digital rectal examination (DRE) and Ultrasonography; Complete haemogram, blood urea, serum creatinine, urine analysis all were carefully recorded. Patients were given different modalities of

treatment in forms of watch full waiting/ medical management/ surgical management based on their IPSS score and followed up every 3 monthly for 1 year with IPSS score and QOL score monitoring on every follow up.

RESULTS AND DISCUSSIONS

In our research, a total of 90 patients meeting the inclusion criteria were included. In present study, 37 individuals (41.1%) fell within the 50-60 age bracket. 42 individuals (46.7 %) were in the 60-70 age bracket, while 11 (12.2 %) were in the over 70 age categories.

Our intention was to classify patients according to their IPSS score and provide different treatment options based on their IPSS score to observe enhancements in both IPSS score and quality of life after managing the patient. By using IPSS scoring, patients were categorized into Mild, Moderate, and Severe groups based on their score. Scores ranging from 0 to 7 were categorized as Mild, scores from 8 to 19 as Moderate, and scores from 20 to 35 as Severe. There were 18 patients in the mild category, 61 patients in the moderate category, and 11 patients in the severe category. Variables collected and analyzed included both pretreatment and posttreatment data.

The average IPSS score in the Mild group was 6.28 before treatment, but it rose to 6.72 after treatment. The initial score for the Moderate group was 12.75 before treatment, which decreased to 6.13 after treatment, while the severe group started at 20.73 before treatment and ended at 6.64 post-treatment. After treatment, there was an increase of 8.09% in the mild group's IPSS score. In the moderate group, 45.97% experienced a decrease in scores after treatment, while 67.98% of the severe group also saw a reduction in scores post-treatment.

The average quality of life score in the Mild group was 17.17 before treatment, rising to 17.33 after treatment. The pre-treatment score for the Moderate group was 25.93, dropping to 12.77 after treatment, while the Severe group had a pre-treatment score of 36.36, which decreased to 11.91 post-treatment.

Post-treatment led to a mild 1.61% improvement in QOL score. In the moderate group, scores decreased by 46.74%, and in the severe group, scores decreased by 67.53% after treatment.

In our research involving 90 patients, medical treatment was administered to 30 patients, surgery was performed on another 30 patients, and the remaining 30 patients were placed on watchful waiting. Comparison of IPSS score and QOL score was performed before and after treatment.

Mean IPSS score in medical management group was 11.47 in pre-treatment which decreased to 6.72 post-treatment. In surgical management group was 18.6 in pre-treatment which decreased to 5.27 post-treatment and in waiting group was 7.23 which increased to 7.4. Here p value was significant in Medical and surgical management group.

The average quality of life score in the medical management group was 23.47 before treatment, but dropped to 11.8 after treatment. The surgical management group had a pre-treatment score of 34.7 which reduced to 11.13 after treatment, while the waiting group had a starting score of 18.2 which decreased to 17.8. In the Medical and surgical management group, the p value was found to be statistically significant.

Benign prostatic hyperplasia is a prevalent condition among elderly men, which has a significant impact on medical care due to the growing elderly population in India and worldwide. Symptoms of BPH are treated with Watchful Waiting, Medical Treatment, and Surgery. IPSS and QOL score play a crucial role in assessing the intensity of BPH symptoms and monitoring the effectiveness of treatment in patients. We investigated the results and Quality of Life following different treatments for LUTS related to BPH using IPSS and QOL score in our research.

In the moderate group, patients were carefully monitored for three months. IPSS score was 6.28 and QOL score was 17.17 at baseline in the mild category, but both scores rose after 3 months of treatment. After treatment, the IPSS score in the mild category was 6.72 and the QOL score was 17.33. The patient's symptoms worsened, indicated by higher IPSS and QOL scores. In these cases, switching to a different treatment plan is typically required.

The IPSS score decreased from 12.75 to 6.13 in the Moderate group and from 20.73 to 6.64 in the Severe group after treatment. The pre-treatment quality of life (QOL) score was 25.93 in the Moderate group, dropping to 12.77 post-treatment. In the Severe group, the pre-treatment score was 36.36, decreasing to 11.91 post-treatment. This indicates notable enhancements in symptoms and quality of life.

The average IPSS score in the medical management group was 11.47 before treatment, but dropped to 6.72 after treatment. The pre-treatment IPSS score in the surgical management group was 18.6, but decreased to 5.27 after treatment. The average quality of life score in the medical management group was 23.47 before treatment and dropped to 11.8 after treatment. In the surgical treatment group, the quality-of-life score decreased from 34.7 before

Table 1: Age dstribution of study participants

Age	Frequency	Percent
50-60	37	41.1
60-70	42	46.7
>70	11	12.2
Total	90	100.0
Mean ± SD	61.99 ± 7.65	

Table 2: Pre-operative and post operative comparison of IPSS and QOL

	IPSS (mean score)			QOL (mean score)		
	Pre	**Post**	**Difference**	**Pre**	**Post**	**Difference**
Mild (n=18)	6.28	6.72	↑8.09 %	17.17	17.33	↑1.61 %
Moderate (n=61)	12.75	6.13	↓45.97 %	25.93	12.77	↓46.74 %
Severe (n=11)	20.73	6.64	↓67.98 %	36.36	11.91	↓67.53 %
P value	0.001			0.001		

Table 3: Pre and post comparison of IPSS and QOL in medical, surgery and waiting group

	IPSS (mean score)			QOL (mean score)		
	Pre	**Post**	**p-Value**	**Pre**	**Post**	**p-Value**
Medical	11.47	6.27	0.001	23.47	11.8	0.001
Surgery	18.6	5.27	0.001	34.7	11.13	0.001
Wait	7.23	7.4	0.48	18.2	17.8	0.28

treatment to 11.13 after treatment. These findings show a greater benefit from surgical intervention compared to medical intervention.

The IPSS score in the waitlist group was 7.23 before treatment, but it rose to 7.4. The QOL score in the waitlist group was 18.2 and dropped to 17.8. There is no distinction between pre and post treatment, so it may not be advisable to consider watchful waiting as a treatment option.

CONCLUSION

Patients with moderate to severe symptoms experience a notable enhancement in their Quality of Life after surgery, while patients with moderate symptoms who continue with medical therapy also experience a significant improvement in their Quality of Life. Quality of life declined in patients with mild symptoms who were being monitored without immediate treatment.

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