

Original research article

Assessment of surgical outcome and quality of life among patients of benign prostatic hyperplasia

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Abstract

Background: Benign prostate hyperplasia (BPH) is one of the most common age-related benign neoplasm among males. The incidence of benign prostate hyperplasia is age-dependent with cases seen mostly after the age of 45 years. Various studies reported that the prevalence is increased with age, by the age of 60 years its prevalence is reported more than 50%, and by the age of 85 its prevalence is reported around 90%. The hyperplasia of the stromal and epithelial cells of the prostate leads to the formation of discrete nodules around the periurethral region.

Material & Methods: The present prospective observational study was conducted at the Department of Urology at our tertiary care hospital. The study duration was from June 2017 to May 2019. A sample size of 200 was calculated at a 90 % confidence interval at a 5 % acceptable margin of error by epi info software version 7.2. Patients were enrolled from the outdoor department and ward by simple random sampling. Clearance from Institutional Ethics Committee was taken before the start of the study. Written informed consent was taken from each study participant.

Results Study included 200 patients with an average age of 62.7 years with an average BMI of 26.8 kg/m². The mean baseline IPSS score of all study participants was 20.75±2.21. The mean baseline QOL score of all study participants was 4.31±0.92. The mean prostate volume (ml) of all study participants was 54.6±4.42 ml. The mean IPSS score in the first month of all study participants was 5.10±0.81. The mean IPSS score in the first month of all study participants was 5.10±0.81. The mean IPSS score in the second month of all study participants was 4.20±0.99. The mean IPSS score at the fourth month of all study participants was 3.32±0.58. The mean IPSS score in the sixth month of all study participants was 2.68±0.42. On applying the test of significance it was found that mean IPSS scores at different months had statistically significant (p value<0.05) difference with mean baseline IPSS score. The mean QOL score in the sixth month of all study participants was 0.82±0.34. On applying the test of significance it was found that mean QOL scores in the sixth month had statistically significant (p value<0.05) difference with mean baseline QOL score. **Conclusion:** We concluded from the present study that the transurethral resection of the prostate is the standard operative procedure for benign prostate hyperplasia. The mean IPSS scores at different months after TURP had a statistically significant (p value<0.05) difference with the mean baseline IPSS score. The quality of life is improvement was statistically significant (p value<0.05) after TURP.

Keywords: BPH, TURP, IPSS, QOL.

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Introduction

Benign prostate hyperplasia (BPH) is one of the most common age-related benign neoplasm among males. The incidence of benign prostate hyperplasia is age-dependent with cases seen mostly after the age of 45 years (1). Various studies reported that the prevalence is increased with age, by the age of 60 years its prevalence is reported more than 50%, and by the age of 85 its prevalence is reported around 90% (2). The hyperplasia of the stromal and epithelial cells of the

prostate leads to the formation of discrete nodules around the periurethral region.

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These pathological changes lead to the enlarged prostate gland and causing lower urinary tract symptoms (LUTS) in patients such as poor and/or intermittent stream, prolonged micturition, straining, dribbling, feeling of incomplete bladder emptying. These symptoms are known as obstructive symptoms and other symptoms such as frequency, urge incontinence, urgency, and nocturia known as storage symptoms (3).

Benign prostate hyperplasia is reported to be associated with decreased quality of life by affecting daily activities and sleep patterns. Various studies reported that BPH is associated with many complications such as acute urinary retention, renal function impairment, haematuria, etc (4). Various studies reported that there are both medical and surgical line of treatments are available for benign prostate hyperplasia. Among the medical line of treatment, various therapies are used for BPH and these are based on its pathogenesis (5). BPH has two approaches of medical treatment, first is to reduce the volume of the prostate gland for that 5α -reductase inhibitors are used such as finasteride and dutasteride, the second approach is to dilate the prostatic urethra for that α -blockers are used tamsulosin, alfuzosin, silodosin, terazosin and doxazosin (6). Among the surgical line of treatment, Freyer's open transvesical prostatectomy and transurethral resection of the prostate (TURP) are the frequently performed surgeries for BPH. However, various studies reported that TURP is considered as the standard surgery for the BPH less than 70 to 80 g. Both surgical and medical line of treatment approaches has its own benefits and limitations (7). Hence the present study was conducted to assess the surgical outcome and quality of life among patients of benign prostatic hyperplasia at the tertiary care center.

Materials & Methods

The present prospective observational study was conducted at the Department of Urology at our tertiary care hospital. The study duration was from June 2017 to May 2019. A sample size of 200 was calculated at a 90 % confidence interval at a 5 % acceptable margin of error by epi info software version 7.2. Patients were enrolled from the outdoor department and ward by simple random sampling. Clearance from Institutional Ethics Committee was taken before the start of the study. Written informed consent was taken from each study participant.

In the present study, patients with lower urinary tract symptoms were clinically diagnosed by per rectal digital examination and transrectal ultrasonography was done for confirmation of cases of prostate

enlargement. Study participants aged more than 50 years and diagnosed with benign prostate hyperplasia were enrolled for the study. Patients with neurological causes of bladder dysfunction, renal and bladder stone, Ca prostate, and cystitis with hematuria was excluded from the present study. All the study participants with lower urinary tract symptoms were accessed with the IPSS score (8).

All data of the patient was recorded on predesigned Performa. Patients with acute obstruction, recurrent urinary tract infection, and high IPSS were enrolled for transurethral resection of the prostate. All study participants enrolled for TURP under anesthesia and standard surgical procedure for each patient. All study participants were assessed for the IPSS score in the first month, the second month, the fourth month, and in the sixth month. At the beginning of the study baseline score of IPSS were measured and was recorded. At the end of the study, the QOL score was calculated and recorded. Data analysis was carried out using SPSS v22. All tests were done at an alpha (level significance) of 5%; means a significant association present if the p-value was less than 0.05.

Results

In the present study, we enrolled 200 patients diagnosed with benign prostate hyperplasia, consisted of mainly patients from different parts of Rajasthan and also some from the states like Gujarat and Madhya Pradesh. The study included 200 patients with an average age of 62.7 years with an average BMI of 26.8 kg/m². The mean baseline IPSS score of all study participants was 20.75±2.21. The mean baseline QOL score of all study participants was 4.31±0.92. The mean prostate volume (ml) of all study participants was 54.6±4.42 ml. (Table 1)

Table 1: Distribution of study subjects according to the study parameters.

Age	Mean 62.7 Years
Body Mass Index(kg/m²)	Mean 26.8 kg/m ²
Basal IPSS score	20.75±2.21
Basal QOL score	4.31±0.92
Mean prostate volume (ml)	54.6±4.42

In the present study, the mean baseline IPSS score of all study participants was 20.75±2.21. The mean IPSS score in the first month of all study participants was 5.10±0.81. The mean IPSS score in the first month of all study participants was 5.10±0.81. The mean IPSS score in the second month of all study participants was 4.20±0.99. The mean IPSS score at the fourth month of

all study participants was 3.32 ± 0.58 . The mean IPSS score in the sixth month of all study participants was 2.68 ± 0.42 . On applying the test of significance it was found that mean IPSS scores at different months had statistically significant (p value < 0.05) difference with mean baseline IPSS score. (Table 2).

Table 2: Distribution of study subjects according to the IPSS score.

Time in months	IPSS score	p-value
Basal IPSS	20.75 ± 2.21	-
First month	5.10 ± 0.81	< 0.05
Second month	4.20 ± 0.99	< 0.05
Fourth month	3.32 ± 0.58	< 0.05
Sixth month	2.68 ± 0.42	< 0.05

In the present study, the mean baseline QOL score of all study participants was 4.31 ± 0.92 . The mean QOL score in the sixth month of all study participants was 0.82 ± 0.34 . On applying the test of significance it was found that mean QOL scores in the sixth month had statistically significant (p value < 0.05) difference with mean baseline QOL score. (Table 3).

Table 3: Distribution of study subjects according to the QOL score.

Time	QOL score	P-value
Basal QOL score	4.31 ± 0.92	< 0.05
Sixth month	0.82 ± 0.34	

Discussion

In the present study, we enrolled 200 patients diagnosed with benign prostate hyperplasia, consisted of mainly patients from different parts of Rajasthan and also some from the states like Gujarat and Madhya Pradesh. The study included 200 patients with an average age of 62.7 years with an average BMI of 26.8 kg/m^2 . The mean baseline IPSS score of all study participants was 20.75 ± 2.21 . The mean baseline QOL score of all study participants was 4.31 ± 0.92 . The mean prostate volume (ml) of all study participants was 54.6 ± 4.42 ml. Similar results were obtained in a study conducted by Gnana B et al among 60 patients of benign prostate hyperplasia and found similar findings to the present study. They reported that the mean age of study participants in the Sd group was 60.44 years, in the Sd+Dt group it was 60 years, and in the TURP group, it was 63 years. The basal IPSS score reported was 10.54 ± 1.80 in the Sd group, in Sd+Dt group 10.57 ± 2.21 , and the TURP group 24.5 ± 5.60 . The IPSS score was significantly higher in the TURP group (p value < 0.05). The basal quality of life score was reported 1.29 in the Sd group, in Sd+Dt group 1.31 ± 0.92 , and TURP group 4.47 ± 1.17 . The mean prostatic volume was in Sd group 37 ± 1.84 ml, in

Sd+Dt group 44.91 ± 2.596 ml, and the TURP group 50.6 ± 4.42 ml (9). Similar results were obtained in a study conducted by Ghoel J et al among 90 patients of benign prostate hyperplasia and found similar findings to the present study. They reported study patient's age ranges from 45-86 years, with the majority of patients 36 (40%) in the age group 56-65 years, followed by 33 (36.67%) in 66-75 years age group (10).

In the present study, the mean baseline IPSS score of all study participants was 20.75 ± 2.21 . The mean IPSS score in the first month of all study participants was 5.10 ± 0.81 . The mean IPSS score in the first month of all study participants was 5.10 ± 0.81 . The mean IPSS score in the second month of all study participants was 4.20 ± 0.99 . The mean IPSS score at the fourth month of all study participants was 3.32 ± 0.58 . The mean IPSS score in the sixth month of all study participants was 2.68 ± 0.42 . In applying the test of significance, it was found that mean IPSS scores at different months had statistically significant (p value < 0.05) difference with mean baseline IPSS score. Similar results were obtained in a study conducted by Shah A et al among 131 patients of benign prostate hyperplasia and found similar findings to the present study (11). Similar results were obtained in a study conducted by Huang L et al among 158 patients of benign prostate hyperplasia and found similar findings to the present study. They reported the mean age of the study participants was 73.5 years, with a mean BMI score of 24 kg/m^2 . The baseline means IPSS total score was 25 with a Storage symptom/ Voiding symptom score of 10.4 and 14.6 respectively (12).

In the present study, the mean baseline QOL score of all study participants was 4.31 ± 0.92 . The mean QOL score in the sixth month of all study participants was 0.82 ± 0.34 . On applying the test of significance, it was found that mean QOL scores in the sixth month had a statistically significant (p value < 0.05) difference with mean baseline QOL score. Similar results were obtained in a study conducted by Matthew R et al among patients of benign prostate hyperplasia and found similar findings to the present study. They reported significant improvement of QOL scores among patients after TURP (13). Similar results were obtained in a study conducted by Huang S et al among patients of benign prostate hyperplasia undergoing TURP and found similar findings to the present study. They reported, statistically significant improvement of QOL scores among patients after TURP (14).

Conclusion

We concluded from the present study that the transurethral resection of the prostate is the standard

operative procedure for benign prostate hyperplasia. The mean IPSS scores at different months after TURP had a statistically significant (p value <0.05) difference with the mean baseline IPSS score. The quality of life is improvement was statistically significant (p value <0.05) after TURP.

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