

**To Evaluate Prevalence, Correlation and Treatment Effects of LUTS/BPH on Sexual Dysfunction****Tilala Yash Manharlal<sup>1</sup>, Abhilekh Tripathi<sup>2</sup>, Sachin Sharma<sup>3</sup>, Pritam Pritesh Pattanayak<sup>4</sup>, Pramod Kumar Mohanty<sup>5</sup>, Sanjay Choudhuri<sup>6</sup>, Sabyasachi Panda<sup>7</sup>, Samir Swain<sup>8</sup>**<sup>1,2,3,4,5,6,7,8</sup>**M.Ch Urology, Department of Urology and Renal Transplant, S.C.B Medical College and Hospital, Behera colony, Manglabag, Cuttack -753001, Odisha, India****Received: 25-11-2023 / Revised: 23-12-2023 / Accepted: 26-01-2024****Corresponding Author: Dr. Sachin Sharma****Conflict of interest: Nil****Abstract:****Introduction:** Objective of the study was to evaluate the prevalence of sexual dysfunction in LUTS/BPH patients, to assess the effect of LUTS/BPH effect on sexual function, to assess the treatment effect of LUTS/BPH on sexual function.**Materials and Methods:** Retrospective analysis conducted between October 2021 and September 2022 of the 150 patients with complaints suggestive of LUTS/ BPH. All were evaluated with history & Physical examination, Digital Rectal Examination & Focused neurological examination, Ultrasonography kidney, ureter, bladder and prostate, Uroflowmetry, Post void residue, the linguistic version of the "IPSS and IIEF – 15".**Results:** Total 150 patients were considered for the study and evaluation. Sexually active male were 58.6%. 120 (80%) patients underwent surgical management; whereas 30 (20%) patients had received medical management. 69.17% of the patients had severe LUTS. The most common bothersome LUTS was weak stream of Urine 71%. In 7<sup>th</sup> decade of life 74.5% patients had sexual dysfunction. 54.28% patients with moderate LUTS had moderate to severe erectile dysfunction, whereas 51.81% patients with severe LUTS had moderate to severe erectile dysfunction, Correlation coefficient 0.76. With moderate LUTS 14.28% patients had sexual dysfunction, whereas with severe LUTS 56.62% patients had overall sexual dysfunction with Correlation coefficient 0.343. Quality of life was mostly satisfied or pleased of 33.33% with medical management, while post TURP 86.67% has improved quality of life. This comparison was statistically significant (P-Value 0.045).**Conclusion:** The prevalence of sexual dysfunction in patients with severe LUTS is 90.36% and severity of sexual dysfunction correlates with severity of LUTS.**Keywords:** Sexual Dysfunction, benign prostatic hyperplasia, Lower urinary tract symptoms, Prevalence, correlation.

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**Introduction**

Lower urinary tract symptoms suggestive of benign prostatic hyperplasia (LUTS/BPH), and sexual dysfunction, are common, highly bothersome conditions in older men, and the prevalence of both disorders increases with age. Although Sexual dysfunction affects a couple's relationship and the quality of life of the patient and the partner irrespective of age. A large proportion of older men are affected by LUTS suggestive of BPH, the prevalence of which increases with age. [1]

Sexual dysfunction is much more prevalent in patients with LUTS/ BPH than in men with no LUTS/BPH, even after controlling for confounding variables such as age or comorbidities. Hence LUTS/BPH is considered an independent risk factor for sexual dysfunction. Whether this is because of a

common underlying pathology, or whether the considerable bother associated with LUTS/ BPH leads to reduced sexual functioning, remains to be elucidated. [2]

We intended to evaluate the prevalence of sexual dysfunction in the LUTS/BPH patient population in our country, in our set-up to analyze the amount of importance attached to the sexual quality of life, the treatment effects of LUTS on sexual dysfunction, also to see the correlation between LUTS and sexual dysfunction.

**Material and methods:**

Retrospective analysis conducted between October 2021 and September 2022 of the patients with complaints suggestive of LUTS/ BPH. All patients

were thoroughly evaluated with history & Physical examination, Digi-tal Rectal Examination & Focused neurological examination, baseline blood parameters, Ultrasonography kidney, ureter, bladder and prostate, Uroflowmetry & Post void residue. Inclusion criteria were patients with history suggestive of LUTS/BPH with > 50 years and given informed consent for the study were included. Exclusion criteria were the patients who have been already treated for LUTS / BPH earlier, with co-morbid ill-ness like diabetes & hypertension, with history or clinical examination suggestive of associated neurological disorder. All the patients were given with the linguistic version of the “International - Prostate Symptom Score (I - PSS)”. Sexual function assessment was done using linguistic version of the “The International Index of Erectile Function (IIEF) - 15”. The 15-questions in International Index of Erectile Function (IIEF) Questionnaire are a validated, multi-dimensional, self-administered investigation that has been found useful in the clinical assessment of sexual dysfunction and treatment outcomes. A score of 0-5 is awarded to each of the 15 questions.

The investigator interviewed patients who are illiterate and who could not read the questionnaire because of poor eyesight and who could not understand the content. To avoid bias, the same investigator interviewed all such patients. In all other patients it was used as a self-administered questionnaire (SAQ). Management of these patients was done according to the institute’s protocol. Management consisted of medical therapy in the form of  $\alpha$ - blockers and 5AR Inhibitors. Surgical

therapy was mainly Transurethral resection of prostate (TURP). Post treatment evaluation. Evaluation following treatment was done at the end of 3rd & 6th month. All patients were asked to come for follow-up at the end of 3rd & 6th month and were given the I-PSS & IIEF-15. Uroflowmetry with post void residue was also done to ascertain the effect of therapy.

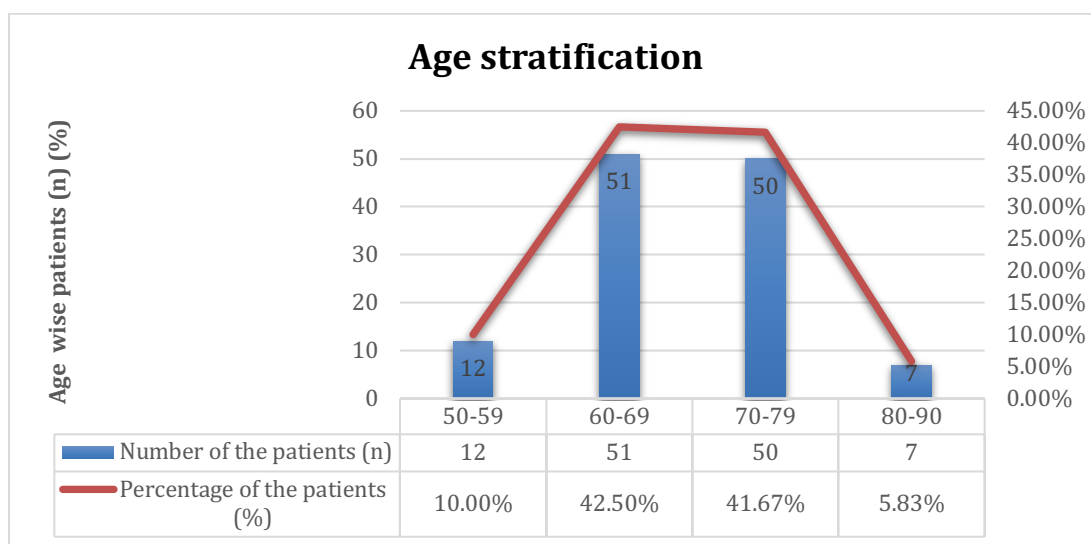
**Statistical analysis:**

Qualitative, Quantitative Variables and Correlation Coefficient Were Analysed By IBMSPSS ver. 20.0 (IBM Corp, Armonk, NY, USA). & M.S. Excel. A P value <0.05 was considered statistically significant.

**Results:**

The total 265 patients included who were admitted in the ward for either evaluation or intervention of LUTS/BPH in the period October 2021 to September 2022 as per inclusion criteria. 110 patients were sexually inactive. 5 patients had given negative consent. Total 150 patients were considered for the study and evaluation. Most common bothersome LUTS was weak stream of urine in 71% patients. Sexually active male were 58.6%. 120 (80%) patients underwent surgical management. Whereas 30 (20%) patients had received medical management.

The mean age of the patients was 67.5 yrs. Ranges from 50 to 85 yrs. majority of the patients were in 7th and 8th decade of life 42.5 % (51/120) and 41.67 % (50/120) respectively. (Figure 1)



**Figure 1: Age distribution of the patients**

Most of the patients had moderate to severe bothersome LUTS. 69.17% of the patients had sever LUTS. The most common bothersome LUTS was weak stream of Urine 71%. (Table 1)

**Table 1: Lower urinary Tract symptoms and its severity**

IPSS	Number of patients with LUTS (n)	
<7 (Mild)	2	1.67%
8-19 (Moderate)	35	29.17%
20-35 (severe)	83	69.17%
<b>Grand Total</b>	<b>120</b>	<b>100.00%</b>

In 8th decade of life 19.1% patients had moderate to severe erectile dysfunction. While in 7th decade it was 17.5%. (Table 2)

**Table 2: Age wise erectile dysfunction**

AGE	Sever	Moderate	Mild to Moderate	Mild	None	Total	Correlation Coefficient
50-59		3 (2.5%)	5 (4.2%)	4 (3.3%)		12 (10%)	0.159
60-69	2 (1.7%)	19 (15.8%)	16 (13.3%)	12 (10%)	2 (1.7%)	51 (42.7%)	0.791
70-79	2 (1.7%)	21 (17.4%)	17 (14.1%)	8 (6.6%)	2 (1.7%)	50 (41.5%)	0.645
80-90	1 (0.8%)	4 (3.3%)	1 (0.8%)	1 (0.8%)		7 (5.8%)	0.697
Total	5 (4.2%)	47 (39%)	39 (32.4%)	25 (20.7%)	4 (3.4%)	120 (100%)	

Total 38 patients out of 51 (n=38/51, 74.5%) had bothersome overall sexual dissatisfaction in 7th decade of life. 43 patients out of 50 (n=43/50, 86%) in 8th decade of life had overall sexual dissatisfaction. (Table 3)

**Table 3: Age wise prevalence of sexual dysfunction**

Age Groups	Very dissatisfied	Moderately dissatisfied	Equally satisfied & dissatisfied	Moderately satisfied	Very satisfied	Total	correlation coefficient
50-59		5 (4.2%)	4 (3.3%)	3 (2.5%)		12 (10%)	0.254
60-69	1 (0.8%)	14 (11.6%)	23 (19.1%)	8 (6.6%)	5 (4.2%)	51 (42.7%)	0.699
70-79		28 (23.2%)	15 (12.5%)	5 (4.2%)	2 (1.7%)	50 (41.5%)	0.854
80-90		4 (3.3%)	2 (1.7%)	1 (0.83%)		7 (5.8%)	0.903
Total	1 (0.8%)	51 (42.3%)	44 (36.6%)	17 (14.1%)	7 (5.9%)	120 (100%)	

Patients with moderate LUTS it was 19 patients out of 35 (n=19/35, 54.28%) had moderate to severe erectile dysfunction (E.D). Whereas in patients with severe LUTS out of 83 patients, 43 (n=43/83, 51.81%) patients had moderate to severe E.D. Correlation coefficient 0.76. (Table 4)

**Table 4: LUTS and Erectile dysfunction**

IPSS	Severe	Moderate	Mild to Moderate	Mild	None	Total	Correlation Coefficient
<7 (Mild)				1 (0.8%)	1 (0.8%)	2 (1.6%)	0.128
8-19 (Moderate)	4 (3.3%)	5 (4.2%)	10 (8.3%)	14 (11.6%)	2 (1.7%)	35 (29.4%)	0.573
20-35 (Severe)	1 (0.8%)	42 (34.9%)	29 (24.1%)	10 (8.3%)	1 (0.8%)	83 (69%)	0.769
Total	5 (4.1%)	47 (39.1%)	39 (32.4%)	25 (20.8%)	4 (3.3%)	120 (100%)	

Only 5 patients out of 35 (n=5/35, 14.28%) patients who had moderate LUTS had overall sexual dissatisfaction. While in patients with severe LUTS out of 83 patients, 47 (n=47/83, 56.62%) patients had overall sexual dissatisfaction. Correlation coefficient 0.343. (Table 5)

**Table 5: LUTS and sexual dysfunction**

IPSS	Very dissatisfied	Moderately dissatisfied	Equally satisfied & dissatisfied	Moderately satisfied	Very satisfied	Total	correlation coefficient
<7 (Mild)				2 (1.7%)		2 (1.7%)	0.218
8-19 (Moderate)		5 (4.2%)	16 (13.3%)	8 (6.6%)	6 (4.5%)	35 (29.4%)	0.095
20-35 (Severe)	1 (0.8%)	46 (38.2%)	28 (23.2%)	7 (5.8%)	1 (0.8%)	83 (69%)	0.343
Total	1 (0.8%)	51 (42.4%)	44 (36.5%)	17 (14.1%)	7 (5.3%)	120 (100%)	

Patients with alpha blocker had shown improvement in patients with severe LUTS as well as moderate LUTS by 12.5% each with mean IPSS 15.5 +/- 7.5 with at the 6 month 11.5 +/- 5.4 (Table 6)

**Table 6: LUTS and Alpha blocker**

IPSS	N(%) at initiation	N(%) at 6 months of follow up
Mild <7	2 (25%)	4 (50%)
Moderate 8-19	3 (37.50%)	2 (25%)
Sever 20-35	3 (37.50%)	2 (25%)
Total	8 (100%)	8 (100%)

With Combination therapy it was 36.3% improvements in patients with moderate LUTS and 9.1% improvement in patients with severe LUTS. Mean IPSS was 17.4 +/- 5.6 while at the 6 months it was 10.7 +/- 5.7 (Table 7)

**Table 7: LUTS and Combination therapy (5-ARI + Alpha Blocker)**

IPSS	N(%) at initiation	N(%) at 6 months of follow up
Mild <7	1 (4.60%)	11 (50%)
Moderate 8-19	14 (63.60%)	6 (27.30%)
Sever 20-35	7 (31.80%)	5 (22.70%)
Total	22 (100%)	22 (100%)

Patients with alpha blocker had 72.5% bothersome ejaculatory dysfunction which increased 87.5% at 6 months of medical management with alpha blocker. With combination therapy the 54.55 % patients had bothersome ejaculation function which increase to 90.9 % with 6 month of therapy also. It seems to have more anejaculation side effects in comparison to alpha-blockers. We can interpret that quality of life was mostly satisfactory with combination therapy 40.90% in comparison to alpha blocker 12.5% (Table 8)

**Table 8: Medical management and Quality of Life**

Q.O.L	Q.O.L with alpha blocker at 6 months	Q.O.L with combination therapy at 6 months
0= Delightful	0	0
1=Pleased	0	
2=Mostly Satisfied	1 (12.50%)	9 (40.90%)
3=Mixed Equally Satisfied /Dissatisfied	3 (37.50%)	11 (50%)
4=Mostly Dissatisfied	4 (50%)	2 (9.10%)
5=Unhappy	0	
6=Terrible	0	

Quality of life was mostly satisfied or pleased of 33.33% with medical management, while post TURP 86.67% has improved quality of life. This comparison is significant P Value 0.045 (Table 9)

**Table 9: Quality of Life**

Q.O.L	Q.O.L with medical management at 6 months	Q.O.L with TURP at 6 months
0= Delightful	0	0
1=Pleased	0	92(76.67%)
2=Mostly Satisfied	10 (33.33%)	12(10%)
3=Mixed Equally Satisfied /Dissatisfied	14 (46.67%)	16(13.33%)
4=Mostly Dissatisfied	6 (20%)	0
5=Unhappy	0	0
6=Terrible	0	0
Total	30 (100%)	120 (100%)

## Discussion

Lower urinary tract symptoms (LUTS) are common problems in aging individuals. Benign prostatic hyperplasia (BPH) is the primary cause of LUTS in men aged 50 years and older. The presence of histological BPH at autopsy is approximately 8% in men aged 31 to 40 years, 50% in those aged 51 to 60 years, 70% in those aged 61 to 70 years, and 90% in those aged 81 to 90 years [3]. More recent large-scale epidemiological studies with different population samples and various measurement approaches have demonstrated consistent and compelling evidence of a relationship between

LUTS and sexual dysfunction in aging men that is independent of the effects of age or other comorbidities. These studies, including the, and new pathophysiological insights have provided valuable information on the relationship between LUTS, sexual dysfunction and it affects quality of life in aging men.

Sexual dysfunction manifests mainly as erectile dysfunction (ED), ejaculatory disorders (EjD), or decreased libido/hypoactive sexual desire (HSD). Men with moderate-to-severe LUTS are at increased risk for sexual dysfunction. The successful management of patients with LUTS associated with BPH should include assessments of sexual function

and monitoring of medication-related sexual side effects. For men with LUTS and sexual dysfunction, an appropriate integrated management approach, based on each patient's symptoms and outcome objectives, along with improvement of quality of life is always warranted. [4]

In this study conducted from October 2021 to September 2022 of total of 265 patients who were enrolled into the study, 150 were finally included in the study who met the inclusion criteria, 120 has undergone standard monopolar TURP and 30 patients managed with medical management. Although the sample size appears low, the patient group is the hospitalized patients only that form those who are very much distressed with the symptoms. Moreover the sample size is comparable with that of Namasivayam et al. [5]

The mean age of the patients was 65.8. The predominant age group is 60 – 69 yrs (N=51/120, 42.7%) it can be comparable with Lei wang et al. [6] This age characteristic is also comparable to the studies in the literature. The elderly age may be significant, because age as such can have a bearing on sexual dysfunction as revealed in the Cologne Male Survey. The sexually active male 58.6%, while in A.Wein et al. [7] study it was 71%. More than half of the patients had severe LUTS (N=83/120, 69%) and most common symptoms was weak stream of urine 71%. This may be due to the patient sample selected. The LUTS symptoms also had age wise variation, with 78% of those in the 50 – 59 age group with mild symptoms, and most of them in the 70 – 79 group with severe symptoms. This signifies increase in prevalence with age. This can be comparable with Li et al. [8], largest an Asian multinational prospective observational registry of patients with BPH, Nocturia was most common presenting symptoms and 90% patients had moderate to severe LUTS.

The sexual function too showed variation among different age groups. Both the factors, the Moderate to severe bother (23/50 46%) erectile dysfunction and Moderate to severe ejaculatory dysfunction (32/50, 64%) were more common in the age group of 70 – 79, compared to other age groups correlation coefficient 0.64 for ED and 0.79 EjD shows strong positive correlation. Only the patients in the age group 70 -79 were moderately dissatisfied by overall satisfaction (28/50, 56%). In Rosen et al, Multinational Survey of the Aging Male (MSAM-7) study ED 49 % and EjD 45%. [9] This shows the association of sexual dysfunction with increasing age. More over patients after the age of 70 years may not consider their sexual dysfunction bothersome sometimes because of social ethics, loss of partner and comorbidities, though they have a high prevalence.

The patients in the severe LUTS (n=47 /83 51.08%) group had severe ED whereas overall bothersome EjD 86.74% in the severe group and 25.71 % (n=9/35) in the moderate LUTS group had significant bothersome ED. The increasing age is associated with both increase in LUTS and ED. This correlates well with the reports of the MSAM –7. The correlation coefficient for LUTS with ED is 0.76, which is highly significant. It is similar to the world literature. [10]

The ejaculatory function was not that frequently affected in patients with mild LUTS. Whereas, in those affected, more than 62.65 % (n=52/83) belonged to the severe LUTS group. This shows that though severe LUTS may not always associated with ejaculatory dysfunction, the presence of ejaculatory dysfunction signifies a higher LUTS status. These results correlate well with the study by Rosen RC et al who propose a prevalence of 70 –80 % sexual dysfunction with LUTS. The correlation coefficient is 0.37, signifying positive correlation. The degree to which the patients are bothered by their sexual dysfunction also varies well with LUTS.

Almost all the patients (47/52) who had moderate to severe bother due to overall satisfaction had associated severe LUTS. Around 90.38% of patients with severe LUTS had bothersome sexual dysfunction in form of overall satisfaction. None of them had mild LUTS. 30% of the patients with mild to moderate LUTS had no bothersome overall satisfaction.

This bears evidence to the fact that sexual dysfunction increases with increasing LUTS. The MSAM-7 showed that the incidence of bothersome sexual dysfunction associated with LUTS. The correlation coefficient is 0.34, which shows that as LUTS increases, so too sexual dysfunction requiring simultaneous effective management. So around (n=120/150) 80% of the patients were taken up for TURP while 20% (30/150) patients were managed with medical management. In the post treatment evaluation after medical therapy, the ejaculatory function decreased in around 36% of the patients. This can be expected because retrograde ejaculation is one of the commonest adverse effects as associated with alpha blockers.27 there was no change in the erectile function after medical therapy. The initially (n=52/120) 43.33% patients with moderate to severe ED increased to (n=71/120), 59.16% of patients in the moderate to severe ED post TURP. This may be due to the thermal neuropraxia to cavernosal nerves caused by TURP. 70% of the 53 patients developed ejaculatory dysfunction post operatively. This is also well explained in the literature.

Post TURP 86.16% patients had improved quality of life as because most of the patients symptomatic free from LUTS. With medical management in

combination therapy the patients initially 95.4% had moderate to severe LUTS, post 6 months it improves and only 50% patients had moderate to severe LUTS.

Same improvement seen with alpha blocker therapy also. It was observed that ejaculatory dysfunction is more with combination therapy 90.1% compared to alpha blocker 87.5%. Although LUTS improvement is also high with combination. Quality of life only 28.5% that improve from medical management while it is much lower in comparison to TURP.

To conclude, sexual dysfunction is highly prevalent in the patients with LUTS in the range of 90%. The age group should also be taken into consideration, because increasing age as such can lead to sexual dysfunction. As we do not have a control group we were unable to signify the influence of age. The severity of LUTS also correlated with severity of sexual dysfunction. The treatment outcome is not promising as the patients' ejaculatory dysfunction increased with both surgery and medical management. Though the sample size is small and the follow up is limited, we can suggest that treatment of sexual function should be combined with management of sexual dysfunction for better patient satisfaction.

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