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Original Research Article

A prospective study of sexual dysfunction in patients with benign prostatic hyperplasia

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ABSTRACT

Background: Benign prostatic hyperplasia (BPH)/ lower urinary tract symptoms (LUTS) patients have been found to be more prevalence of sexual dysfunction than in men with no BPH/LUTS. In this study, the authors aimed to evaluate the prevalence of sexual dysfunction in the BPH patient to see the correlation between BPH and sexual dysfunction.
Methods: All patients who attended Urology outpatient department or admitted in Government Kilpauk Medical College and Hospital and Government Royapettah hospital during October 2013 to October 2014 for symptoms of BPH were enrolled for the study.
Results: The prevalence of sexual dysfunction in patients with LUTS is 70%. The severity of sexual dysfunction correlates with severity of LUTS. Ejaculatory function deteriorates after treatment of LUTS/BPH.
Conclusions: Though the sample size is small and the follow up is limited, it can be suggested that treatment of sexual function should be combined with management of sexual dysfunction for better patient satisfaction.

Keywords: BPH, LUTS, Sexual dysfunction, TURP

INTRODUCTION

Sexual dysfunction is among the highly prevalent disorders in elderly men that affect their quality of life, which is also a commonly ignored aspect of healthcare.[1] The main factors of sexual dysfunction are age and cardiovascular disorders. The male sexual dysfunction includes three components viz. erectile dysfunction (ED), ejaculatory dysfunction (EjD) and hypoactive desire (HD) or loss of desire or decreased desire.[2] All these symptoms are commonly seen in elderly people. Until recently, it was widely assumed that symptoms of male sexual dysfunction were a natural consequence of the aging process.[3] A decrease in sexual function and sexual activity is not an inevitable consequence of aging. Older individuals retain significant interest in sexuality and a large proportion of older men and women remain sexually active. Furthermore, sexuality is a factor that correlates with individual's perception of their well-being and quality of life.[4] With the development of new measures for assessing sexual function and new medications for the treatment of ED, effective management of sexual problems is now possible. Recently, the severity of lower urinary tract symptoms (LUTS) has also been identified as a crucial risk factor for sexual dysfunction, independent of age and comorbidities.[3]

Decreased rigidity and pain on ejaculation are the highly prevalent symptoms in ageing men, but are the most

bothersome, affecting the quality of life.[5] Benign prostatic hyperplasia (BPH)/ LUTS patients have been found to be more prevalence of sexual dysfunction than in men with no BPH/LUTS. Hence LUTS/BPH is considered to be an independent risk factor for sexual dysfunction.[5] However, most male patients with LUTS/BPH experience a negative influence of LUTS symptoms due to BPH on their sex life.[5] Hence, treatment of LUTS/BPH should also aim to at least maintain or, if possible, improve sexual function in an individual.

In this study, the authors decided to evaluate the prevalence of sexual dysfunction in the BPH patient population in the Indian government hospital set-up to see the correlation between BPH and sexual dysfunction and also to analyse the amount of importance attached to the sexual quality of life.

The objectives of this study were to assess and analyse the prevalence of sexual dysfunction in patients with BPH patients, the various effects of BPH on sexual function and the effects, the various treatment options for BPH have on sexual function.

METHODS

Study group: All patients who attended Urology outpatient department or admitted in Government Kilpauk Medical College and Hospital and Government Royapettah hospital for symptoms of BPH were enrolled for the study. These patients were admitted for either evaluation or intervention for LUTS/ BPH.

Study design: Prospective clinical study

Study period: 1 year (October 2013 to October 2014)

All male patients above the age of 50 yrs who presented with LUTS symptoms were investigated further and diagnosed as BPH. Informed consent obtained from all eligible patients. All patients after admission were given the linguistic version of IPSS and MSHQ. Patients who are literate were asked to fill up the questionnaire (self-administered questionnaire).

Patients who were not able to fill up (for various reasons like illiterate, poor eye sight and not able to understand the contents) were interviewed personally. To avoid interviewer bias, the same interviewer interviewed all patients. All details regarding the patients demographics, scoring and results will be entered into a proforma. Post treatment effect evaluation was done at the end of 3 months following treatment.

Initial evaluation

The patients with complaints suggestive of LUTS/ BPH were thoroughly evaluated with History and Physical examination, DRE and focused neurological examination, baseline blood parameters, USGKUB, Uroflow and PVR.

Inclusion criteria

- All patients with history suggestive of LUTS/BPH with more than 50 years were included.
- Patients who gave informed consent for the study were included.

Exclusion criteria

After the initial evaluation the patients were excluded using the following exclusion criteria.

- Patients who have been already treated for LUTS / BPH earlier.
- Patients with co-morbid illness like DM and HT.
- Patients with history or clinical examination suggestive of associated neurological disorder.
- Patients who were not willing to self-administer the questionnaire or to be interviewed.

Symptom severity and sexual function assessments

All the patients were given with the linguistic version of the International - Prostate Symptom Score (I - PSS) to assess the severity of LUTS/BPH.[6] Sexual function assessment was done using linguistic version of the male sexual function scale. The male sexual function scale consists a total of 8 questions of which two questions are on erectile function domain and its bother and three are on ejaculatory function domain and its bother, one question each on sexual desire and satisfaction. The final question assessed the overall bother or distraction of life due to the sexual dysfunction. The linguistic conversion was done by the investigator with the help of a psychologist who had experience in interviewing such type of patients. At most care was taken in phrasing the words so that it should not be embarrassing to the patient.

Before putting into use in this clinical study, the questionnaire was circulated among out patients who were waiting for ultrasound examination. They were asked to comment on the content whether it is understandable or not, and their suggestions were taken.

The investigator interviewed patients (76 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 (44 patients) it was used as a self-administered questionnaire (SAQ).

Management

Management of these patients was done according our department protocol. Management consisted of medical therapy in the form of α- blockers and 5AR Inhibitors. Surgical therapy was mainly transurethral resection of prostate (TURP).

Post treatment evaluation

Evaluation following treatment was done at the end 3rd month. All patients were asked to come for follow-up at the end of 3rd month and were given the I-PSS and Male sexual function scale questionnaires. Uroflow with post void residue was also done to ascertain the effect of therapy.

Correlation between LUTS and sexual dysfunction

Correlation between LUTS severity and sexual function severity was assessed using Microsoft Excel correlation coefficient.

RESULTS

All the patients who attended our department OP or admitted in our hospital for either the investigation or treatment of BPH and the symptoms during the time period between October 2013 to October 2014 were enrolled for the study.

A total of 218 patients were enrolled. Diagnosis was confirmed with investigations. After initial evaluation, 98 patients (70 co morbid illness (DM/HTN), 18 already treated, 5 neurological diseases and 5 not consented) were excluded from the study as per exclusion criteria adopted for the study. The major cause for exclusion was associated comorbid illness mainly diabetes and hypertension. Finally, 120 patients were included in the study.

Majority of the symptomatic patients included in the study were in the age group between 60- 69 yrs (60%) followed by 50-59 yrs (21.7%) and 70-79 yrs (20%). Most of the patients in the study (65, 54.2%) had severe bothersome symptoms followed by moderate 42 (35%) and mild 13 (10.8%).

Table 1: Age group wise distribution of LUTS severity.

Age group (years)	Mild (n=13)	Moderate (n=42)	Severe (n=65)	Total (n=120)
	N (%)	N (%)	N (%)	N (%)
50-59	8 (61.5)	9 (21.4)	9 (13.8)	26 (21.7)
60-69	3 (23.1)	24 (57.1)	45 (69.2)	72 (60.0)
70-79	2 (15.3)	8 (19.0)	10 (15.4)	20 (16.7)
>80	0 (0)	1 (2.3)	1 (1.5)	2 (1.7)

Most of the patients in the different age groups had bothersome moderate to severe symptoms. Out of 72 patients in the age group of 60-69, 69 (95.83%) had moderate to severe symptoms.

Table 2: Distribution of erectile and ejaculatory dysfunction according to age group.

Age group (years)	None n (%)	Very mild n (%)	Mild n (%)	Moderate n (%)	Severe n (%)	Total n (%)
Erectile dysfunction	N=6	N=12	N=12	N=60	N=30	N=120
50-59	4 (66.7)	3 (25)	4 (33.3)	13 (21.7)	2 (6.7)	26 (21.7)
60-69	2 (33.3)	6 (50)	4 (33.3	38 (63.3)	22 (73.3)	72 (60.0)
70-79	0 (0)	2 (16.7)	4 (33.3	8 (13.3)	6 (20)	20 (16.7)
>80	0 (0)	1 (8.3)	0 (0)	1 (1.7)	0 (0)	2 (1.7)
Chi square: 20.47; p value: 0.058						
Ejaculatory dysfunction	N=60	N=12	N=8	N=38	N=2	N=120
50-59	13 (21.7)	5 (41.7)	6 (75)	2 (5.26)	0 (0)	26 (21.7)
60-69	34 (56.7)	4 (33.3)	2 (25)	31 (81.6)	1 (50)	72 (60.0)
70-79	12 (20)	2 (16.7)	0 (0)	5 (13.1)	1 (50)	20 (16.7)
>80	1 (1.7)	1 (8.3)	0 (0)	0 (0)	0 (0)	2 (1.7)
Chi square: 31.37; p value: 0.001						

Moderate and severe LUTS were significantly more in 60-69 age groups (57.1% and 69.2%) than any other group. Chi square studies showed an association of 15.88. And there was a significant p value of 0.014.

Most of the patients (50%) among the total had moderate bother due to their erectile dysfunction. 30 patients (25%) had severe bother followed by mild and very mild (10% each) bother erectile dysfunction. 60 out of 72 patients (83.3%) in the age group of 60-69 had moderate to severe bother erectile dysfunction. Only 15 out of 26 patients (57%) in age group of 50-59 and 14 out of 20 (70%) in age group of 70-79 had moderate to severe bother. Values are statistically non-significant.

Among the total patients, majority had only none or mild bother (67%) due to their ejaculatory dysfunction. 38 patients (31.7) had moderately bothered only 2 were severely bothered (1.7%).

Seventy-five percentage patients in the age group 50-59 had mild ejaculatory dysfunction. But 81.6% of patients in the age group of 60-69 years had moderate dysfunction.

Majority in the age groups 70-79 and more than 80 age groups had mild dysfunction only. There was a significant p value (p=0.001) which is comparable to other studies.

Majority of patients (60%) were not bothered or mildly bothered by their sexual desire disorder. 40 (33.3%) among the patients were moderately bothered whereas only 8 patients (6.67%) were severely bothered.

Table 3: Distribution of sexual desire disorder according to age group.

Age group (years)	None n (%)	Very mild n (%)	Mild n (%)	Moderate n (%)	Severe n (%)	Total n (%)
	N=36	N=20	N=16	N=40	N=8	N=120
50-59	4 (11.1)	10 (50)	5 (31.2)	6 (15)	1 (12.5)	26 (21.7)
60-69	28 (77.8)	6 (30)	7 (43.7)	26 (65)	5 (62.5)	72 (60.0)
70-79	4 (11.1)	3 (15)	4 (25)	7 (17.5)	2 (25)	20 (16.7)
>80	0 (0)	1 (5)	0 (0)	1 (2.5)	0 (0)	2 (1.7)

Chi square: 21.06; p value: 0.049

Table 4: Distribution of sexual satisfaction according to age group.

	Full satisfaction n (%)	Mild dissatisfaction n (%)	Moderate dissatisfaction n (%)	Total dissatisfaction n (%)	Total n (%)
	N=52	N=32	N=28	N=8	N=120
50-59	13 (25)	10 (31.2)	2 (7.1)	1 (12.5)	26 (21.7)
60-69	36 (69.2)	16 (50)	15 (53.6)	5 (62.5)	72 (60.0)
70-79	3 (5.7)	5 (15.6)	10 (35.7)	2 (25)	20 (16.7)
>80	0 (0)	1 (3.1)	1 (3.6)	0 (0)	2 (1.7)

Chi square: 18.3; p value: 0.031

Table 5: Distribution of overall bother about sexual dysfunction according to age group.

	None n (%)	Very mild n (%)	Mild n (%)	Moderate n (%)	Severe n (%)	Total n (%)
	N=38	N=6	N=28	N=21	N=27	N=120
50-59	10 (26.3)	1 (16.7)	8 (28.6)	1 (4.7)	6 (22.2)	26 (21.7)
60-69	19 (50)	4 (66.7)	13 (46.4)	19 (90.4)	17 (62.9)	72 (60.0)
70-79	8 (21)	1(16.7)	6 (21.4)	1 (4.7)	4 (14.8)	20 (16.7)
>80	1 (2.6)	0 (0)	1 (3.6)	0 (0)	0 (0)	2 (1.7)

Chi square: 13.05; p value: 0.036

Sexual desire was affected more in the active sexual group of 50-59 years. Only 15.4% in that group did not have any change in their sexual desire. 38.9% in 60-69 age groups did not have any change in sexual desire. Buy around 35% in 70-79 had moderate decrease in their sexual desire.

Among 120 patients, 52 (43.3%) were fully satisfied with their sexual activities whereas 8 (6.67%) patients were totally dissatisfied followed by 28 (23.33%) patients were moderately dissatisfied and 32 (26.67%) were mild dissatisfied.

52 patients among the study group had full satisfaction in their sexual life. Only in the 70-79 age group did more patients have more dissatisfaction. Mild and moderate sexual dissatisfaction was more in the 60-69 age group (50% and 53.6% respectively). The same was true in total dissatisfaction (62.5%). P value for this correlation was 0.031.

Out of the 120 patients, 28 (23.3%) were mild bother followed by 27 (22.5%) were very much bothered about sexual dysfunction. 21 patients (17.5%) were moderately bothered. Majority of patients (38 patients, 31.67%) were not at all bothered about their sexual dysfunction.

Most of the patients in the different age groups did not have any overall bother. Patients in the age group 60-69 yrs had more number of patients with very mild bother (66.7%). The same age groups had more number of patients with mild, moderate and sever bother (46.4%, 90.5% and 63% respectively).

All patients with mild LUTS symptoms had none or mild erectile dysfunction. Almost all of the patients in the severe LUTS group had moderate or severe erectile dysfunction. Patients with moderate and severe sexual dysfunction were more in the 70-79 age groups (56.7% and 96.7% respectively). There was a significant p value.

Only patients with severe LUTS had moderate to severe ejaculatory dysfunction (36 out of 65 patients). More Patients in the age group 60-69 yrs had mild ejaculatory dysfunction (62.5%) than any other group. Similarly, more number of patients in the 70-79 age group had moderate to severe dysfunction (89.5%) and 100% respectively. There was a significant p value correlation too.

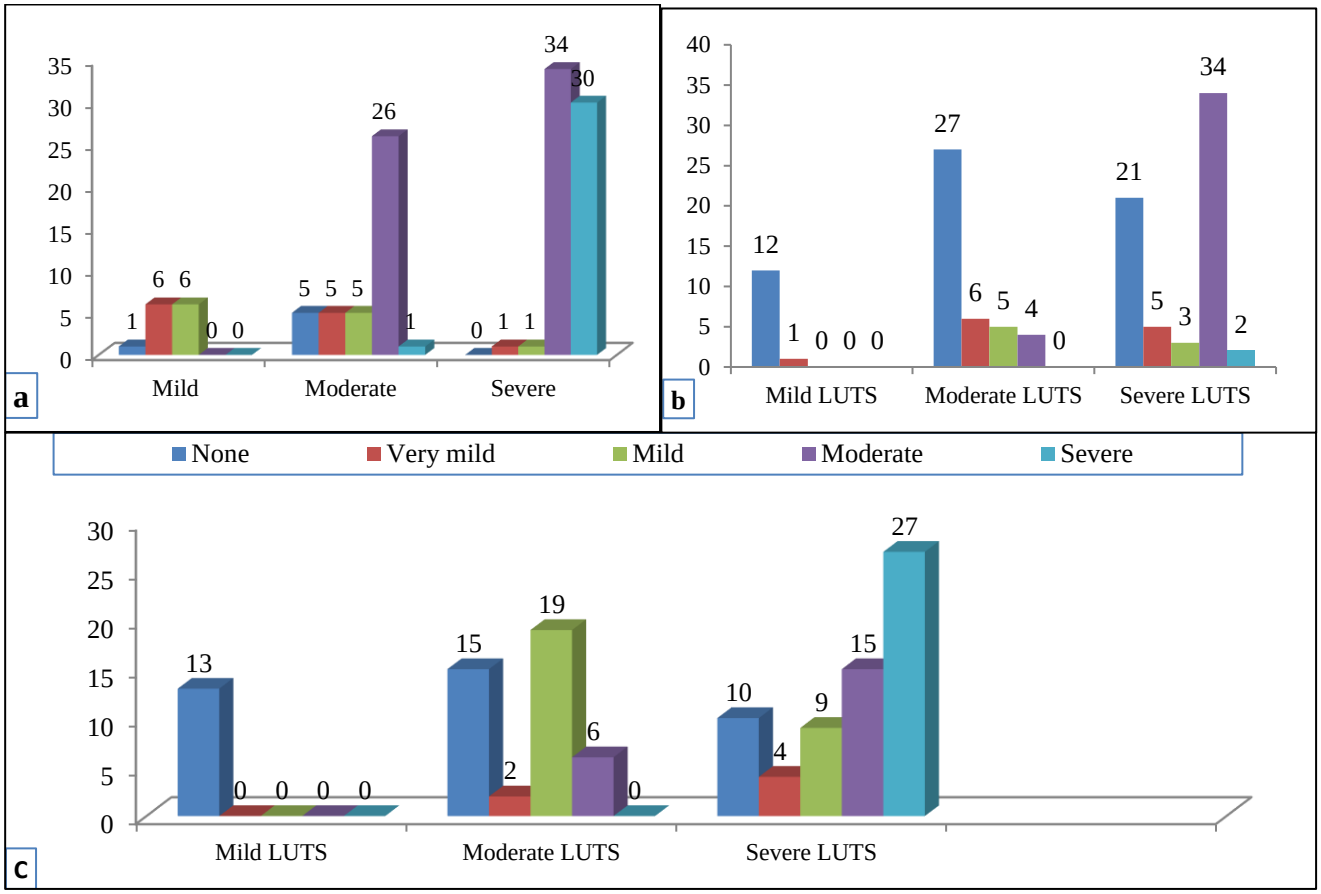

Figure 1: Correlation between LUTS severity and sexual dysfunction. (a) LUTS and erectile dysfunction; (b) LUTS and ejaculatory dysfunction and (c) LUTS and sexual bother.

None of the patients in the mild LUTS group were bothered by sexual dysfunction. Around 45% of patients with moderate LUTS had mild bother.42% of patients with Severe LUTS had severe distress due to sexual dysfunction. More number of patients in moderate LUTS group had mild sexual bother (67.9%). But patients with severe LUTS had more number of patients with moderate and severe sexual bother (71.4%) and 100% respectively.

Table 6: Correlations.

Descriptive statistics							
		Mean				Std. Deviation	N
Age		64.73				7.122	120
LUTS score		19.65				7.124	120
ED		2.83				1.074	120
EJD		1.25				1.392	120
Desire		1.70				1.376	120
Satisfaction		1.93				0.968	120
Bother		1.94				1.552	120
		Age	ED	EJD	Desire	Satisfaction	Bother
LUTS Score	Pearson correlation	0.265**	0.702**	0.607**	0.648**	0.541**	0.561**
	Sig. (2-tailed)	0.003	0.000	0.000	0.000	0.000	0.000
	N	120	120	120	120	120	120

Table 7: Medical treatment given according to sexual function assessment.

	None	Very mild	Mild	Mod	Sev	None	Very mild	Mild	Mod	Sev
Alpha blocker	1	3	5	0	0	1	1	4	3	0
Both	1	2	6	0	0	1	1	2	5	0
Total	2	5	11	0	0	2	2	6	8	0

Table 8: Surgical treatment according to TURP-sexual function assessment.

ED * ED cross tabulation			ED post treatment				
			0	1	2	3	Total
ED	0	Count	2	3	1	0	6
		% of total	1.96%	2.5%	0.98%	0.0%	5.88%
	1	Count	1	5	5	1	12
		% of total	0.0%	4.90%	4.90%	.98%	11.76%
	2	Count	0	5	6	1	12
		% of total	0.0%	4.90%	5.88%	.98%	11.76%
	3	Count	0	26	19	1	46
		% of total	0.0%	25.49%	18.62%	.98%	45.09%
	4	Count	0	0	16	10	26
		% of total	0.0%	0.0%	15.68%	9.80%	25.49%
		Total	3	39	47	13	102
		% of total	2.94%	38.23%	46.07%	12.74%	100.0%

EjD * EjD cross tabulation			EjD post treatment					
			0	1	2	3	4	Total
EJD	0	Count	10	4	28	10	0	52
		% of total	9.8%	3.92%	27.45%	9.8%	.0%	50.98%
	1	Count	1	0	7	4	0	12
		% of total	0.98%	0.0%	6.86%	3.92%	.0%	11.76%
	2	Count	1	0	5	2	0	8
		% of total	0.98%	0.0%	4.9%	1.96%	.0%	7.8%
	3	Count	0	0	10	10	8	28
		% of total	0.0%	0.0%	9.8%	9.8%	7.8%	27.45%
	4	Count	0	0	0	1	1	2
		% of total	0.0%	0.0%	0.0%	0.98%	0.98%	1.96%
		Total	12	4	50	27	9	102
		% of total	11.76%	3.92%	49.01%	26.47%	8.82%	100.0%

Table 8: Surgical treatment according to TURP-sexual function assessment.

		Mean	N	SD	SEM	P
Pair 1	ED	2.83	120	1.074	0.098	0.0000
	ED post	1.78	108	.692	0.063	
Pair 2	EjD	1.25	120	1.392	0.127	0.0000
	EjD post	2.13	108	1.069	0.098	
Chi Sq=37.85, p=0.0015						

The correlation between LUTS and the various manifestations of sexual dysfunction were studied using the Pearson correlation and found to be significant. Out of 120 patients, 102 patients had given surgical and 18 had given medical treatment. Out of those 18, 9 patients had given alpha blocker and 9 had treated with alpha blocker and 5 ARI both.

Post treatment, the erectile dysfunction did not worsen in most of the patients. Only in 9.8% with very mild ED was a worsening of symptoms seen. Similarly, in Mild ED patients only 10% had their symptoms aggravated. Most of the patients in moderate and severe ED group did not have worsening of symptoms. Ejaculatory dysfunction got worsened in a significant number of

patients after TURP as in other studies worldwide. Almost 30% of patients without EjD before TURP had significant EjD post TURP. The same was seen in patients with mild and moderate EjD also.

In conclusion, ejaculatory function was significantly affected after TURP than erectile function in our study which was the same trend seen in other studies worldwide.

DISCUSSION

Out of a total of 218 patients who were enrolled into the study, 120 were finally included in the study after applying the inclusion and exclusion criteria. Though the sample size appears low, the patient group included both the outpatient and hospitalized patients that form those who are very much distressed with the symptoms. Among 120 patients, the predominant age group is 60-69 yrs (60%). The elderly age may be significant, because age as such can have a bearing on sexual dysfunction as revealed in the Cologne Male Survey.[7]

More than half of the patients had severe LUTS (around 55%). This may be due to the patient sample selected. But Rosen et al also reported the severe LUTS as a risk factor and 90% patients in their study had LUTS.[8] The LUTS symptoms also had age wise variation, with 65.38% of those in the 50 – 59 age group with mild to moderate symptoms, and most of them in the 60-69 group with severe symptoms (62.5%). This signifies increase in prevalence with age.

The sexual function too showed variation among different age groups. Both the factors, the erectile dysfunction and ejaculatory dysfunction were more common in the age group of 60 – 69, compared to other age groups. Only the patients in the age group 60-69 were significantly bothered by sexual dysfunction. This may be due to the association of sexual dysfunction with increasing age. Moreover, patients after the age of 70 years may not consider their sexual dysfunction bothersome, though they have a high prevalence.

None of the patients in the mild LUTS group had moderate or severe ED whereas nearly all in the severe group and 88 % in the moderate LUTS group had significant ED. The increasing age is associated with both increase in LUTS and ED. This correlates well with the reports of the MSAM -7.[8] The correlation coefficient for LUTS with ED is 0.702, which is highly significant. Nasir et al reported the correlation coefficient for age and LUTS was statistically significant ($p<0.001$) with coefficient of 0.312 and LUTS with ED was 0.336.[9]

The EjD was not that frequently affected by LUTS compared with ED. 50% of patients had no effect on their ejaculatory function regardless of their LUTS status. Whereas, in those affected, more than 60% belonged to the moderate to severe LUTS group. This shows that though severe LUTS may not always associated with EjD, the presence of EjD signifies a higher LUTS status. None of them had mild LUTS. 31.66% of the patients with LUTS had no bothersome sexual dysfunction. The correlation coefficient is 0.607. This includes patients in the higher age group strata who may have significant dysfunction but may not be bothered by it. Around 78% of patients with severe LUTS had bothersome sexual dysfunction. 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.[8] The correlation coefficient is 0.561, which shows that as LUTS increases, so too sexual dysfunction hand in hand requiring simultaneous effective management.

In the Government institutional set up, with predominantly poor patients, the standard medical management could not be given to the majority of the patients as they cannot afford it. So around 90% of the patients were taken up for TURP. Another problem with the patients is the poor compliance and lack of follow up. But we were able to follow 108 cases over three months through proper communication.

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. There was no change in the erectile function after medical therapy. Out of the patients who came for follow up after TURP, 20% of patients in the moderate ED progressed to severe ED. This may be due to the thermal injury to cavernosal nerves caused by TURP. 70% of the patients developed ejaculatory dysfunction post operatively.

CONCLUSION

To conclude, sexual dysfunction is highly prevalent in the patients with LUTS in the range of 70%. 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, it can be suggested that treatment of sexual function should be combined with management of sexual dysfunction for better patient satisfaction.

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