

Sexual Function Outcomes Following Treatment for Lower Urinary Tract Symptoms. A One-Year Study

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Summary

The aim of this study was to assess the effects of treating lower urinary tract symptoms (LUTS) on the quality of sexual function in a one-year follow up. A total of 116 patients with LUTS received alpha-blocker treatment, 111 patients underwent transurethral resection of the prostate (TURP) and 70 patients with renal stones, with no or mild symptoms served as a control group. The patients were assessed at baseline, three months, six months and twelve months using the International Index of Erectile Function (IIEF-15). The surgical group exhibited some changes in the domain of IIEF-15. Patients in the medical group showed improvement in erectile function and intercourse satisfaction, while orgasmic, overall sexual satisfaction and sexual drive were relatively unchanged. In contrast, the surgical group suffered retrograde ejaculation and overall sexual dissatisfaction after undergoing TURP. TURP has been found to be associated with retrograde ejaculation intercourse and overall sexual dissatisfaction.

Key Words: Benign prostatic hyperplasia, Lower urinary tract symptoms, Alpha-blockers, transurethral resection of the prostate, sexual function, International Index of Erectile Function (IIEF-15)

Introduction

Sexual function is an important concern for most men aged 50-80 years. Any surgical intervention in elderly men, which causes somatic and psychological stress, may contribute to the reduction and loss of potency. Degeneration of sexual function such as erectile dysfunction (ED) and retrograde ejaculation occurs in most men who have undergone transurethral resection of the prostate (TURP)¹⁻⁹. ED occurred in 4 to 30% of the patients following TURP whereas retrograde ejaculation occurred in around 30% to 90%¹⁰⁻¹³. Despite initially retaining potency, some patients experienced reduced potency 12 months after TURP and most of them put the blame on the surgery. Many patients with minor obstructive symptoms may prefer watchful waiting or

less invasive measures such as medication rather than risk unnecessarily early reduction in sexual function.

The quality of life (QoL) of elderly men is affected by status of urinary voiding function. This function also affects erection and also in some ways the process of ejaculation which can cause low volume of semen¹⁴. The urinary symptoms that affect sexual satisfaction are hesitancy, weak stream, urgency, dribbling and dysuria. Improvement of erection and ejaculation are influenced by the improvement of urinary symptoms such as urgency, nocturia and QoL.

The effects of alpha-blockers on sexual function appear to be relatively low. Except for tamsulosin, all alpha-blockers were not significantly found to cause sexual

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dysfunction among patients with lower urinary tract symptoms (LUTS).

This is essentially an observational study to assess outcomes of sexual function in cohorts of patients undergoing surgery and medical treatment for LUTS. It is a descriptive study and is not a comparison of merit of the two types of treatment.

Materials and Methods

This study was conducted at University Malaya Medical Centre, Kuala Lumpur. Patients were recruited at the Urology ward and clinic and were assessed on their sexual function at baseline, three months, six months and twelve months following treatment for LUTS. The study consisted of 227 patients with LUTS; 116 patients were started on medical treatment (alpha-blockers: prazosin, terazosin, doxazosin and alfuzosin) and 111 patients underwent surgical treatment (TURP) based on various indications such as acute and chronic retention, renal impairment secondary to bladder outlet obstruction, bladder stone, failure of medical treatment and urinary tract infections (UTI). Another 70 patients with renal stones of no or mild symptoms were recruited as the control group. Ethical approval was obtained from the hospital ethics committee prior to the commencement of the study. Patients' consent was then obtained. All patients were assessed using the International Index of Erectile Function (IIEF-15)¹⁵. Since the study population consisted of a multiethnic group, a translated version of IIEF-15 was used. Translations were verified using the back-translation technique¹⁶ and have been validated locally¹⁷.

The IIEF-15 questionnaire consists of five separate domains on sexual function: (1) erectile function (EF), (2) orgasmic function (OF), (3) sexual desire (SD), (4) intercourse satisfaction (IS) and (5) overall sexual satisfaction (OS). Domain scores were obtained by summing the scores of individual items in each domain.

Analysis of variance (ANOVA) and effect size index (ESI) were the statistical indices employed for this study.

Results

Most patients on medication fell in the age group of 60-69 years (45.69%), while 26.72% were in the age group of 50-59 years, 18.97% in the 70-79 years, 5.17% in the

under 50 years and 3.45% in the above 80 years group. The mean age of this group was 63.77 years (SD=8.27 years). For the surgical group the majority of patients were from 70-79 years (39.64%) followed by 60-69 years (37.84%), 80 years and above (11.71%) and 51-59 years (10.81%). The mean age of the surgical group was 69.52 years (SD=7.97 years). The mean age of the control group was 50.00 years (SD=12.13 years). There was a significant difference in the mean ages of these groups, ($F_2, 294=97.57, p\leq 0.0001$), where the surgical patients were much older than the medical group and control group being the youngest.

The Chinese (61.21%) formed the largest ethnic group in the medical group followed by Indians (25.86%), Malays (8.62%) and Others (4.31%). Similarly, in the surgical group, the Chinese formed the largest proportion (57.70%) followed by Malays (21.15%), Indians (19.23%) and Others (1.92%). The control group on the other hand, comprised of 41.43% Chinese, 30.00% Indians and 28.57% Malays. However, no significant difference was noted.

Before treatment, the surgical group had lower mean scores in all five domains of sexual function compared to the medical and control groups (Tables I, II and III).

Following treatment, there was a significant deterioration in overall sexual satisfaction ($p\leq 0.01$) and orgasmic function ($p\leq 0.05$) in the surgical group compared to the medical and control groups. However, the erectile function, intercourse satisfaction and sexual drive did not differ significantly (Figure 1)(Tables I, II and III).

Sexual drive

The majority of the surgical group had lower sexual drive compared to medical and control groups ($F_2, 73.11, p\leq 0.0001$) before and after treatment (Figure 1) (Tables I, II and III). All the groups showed relatively unchanged sexual drive before and after treatment.

Erectile function

Before treatment, the surgical group had poor erectile function compared to the medical and control groups. Following treatment, the surgical group experienced improvement in erectile function compared to the medical and control groups which were relatively unchanged ($F_2, 88.99, p\leq 0.0001$) (Figure 1) (Table I, II and III).

Orgasmic Function

At baseline, the orgasmic function in the surgical group was lower than the medical and control groups. Following TURP, 45 patients from the surgical group complained of retrograde ejaculation. Ejaculation was still maintained for a proportion of the patients. The orgasmic function in the medical group was relatively unchanged following alpha-blockers treatment as well as in the control group ($F_2, 112.7, p \leq 0.0001$) (Figure 1) (Tables I, II and III).

Intercourse satisfaction

Surgery has been associated with the increase of dissatisfaction during intercourse in a number of patients whereas medication appears to increase the

satisfaction of sexual intercourse. The control group showed no changes ($F_2, 105.7, p \leq 0.0001$) (Figure 1) (Tables I, II and III).

Overall sexual satisfaction

Overall sexual satisfaction with sexual intercourse was relatively unchanged in the medical group but deteriorated after TURP in the surgery group. No changes were observed in the control group ($F_2, 111.51, p \leq 0.0001$) (Figure 1) (Tables I, II and III).

All individual indices of the IIEF-15 showed some changes in the surgical group whereas the medical and control groups were relatively unchanged (Tables I, II and III).

Table I
Means and standard deviations of sexual function in the medical group

Sexual Function	Baseline		3-month		6-month		12-month	
	Mean (n=70)	SD	Mean (n=70)	SD	Mean (n=70)	SD	Mean (n=70)	SD
Erection frequency	3.11	1.63	2.99	1.69	3.08	1.59	2.94	1.63
Erection firmness	3.08	1.66	2.96	1.71	3.00	1.61	2.90	1.63
Penetration ability	2.83	1.99	2.84	1.98	2.78	1.96	2.71	1.97
Maintenance frequency	2.64	1.87	2.69	1.86	2.65	1.88	2.55	1.87
Maintenance ability	2.79	1.92	2.75	1.88	2.77	1.90	2.68	1.92
Intercourse frequency	1.40	1.29	1.23	1.04	1.19	1.04	1.13	0.99
Intercourse satisfaction	2.53	1.80	2.61	1.87	2.46	1.78	2.40	1.78
Intercourse enjoyment	2.18	1.78	2.19	1.51	2.11	1.51	2.05	1.45
Ejaculation frequency	3.25	1.95	3.25	1.95	2.98	1.94	2.84	1.97
Orgasm frequency	2.87	1.76	2.91	1.74	2.79	1.76	2.64	1.75
Desire frequency	2.48	0.91	2.54	0.95	2.49	0.91	2.50	0.87
Desire level	2.76	0.93	2.70	0.89	2.62	0.82	2.51	0.81
Overall satisfaction	3.15	1.01	3.13	1.09	3.09	1.13	3.02	1.15
Relationship satisfaction	3.34	0.96	3.28	0.99	3.22	1.02	3.22	1.03
Erection confidence	2.69	0.90	2.66	0.89	2.65	0.90	2.60	0.96

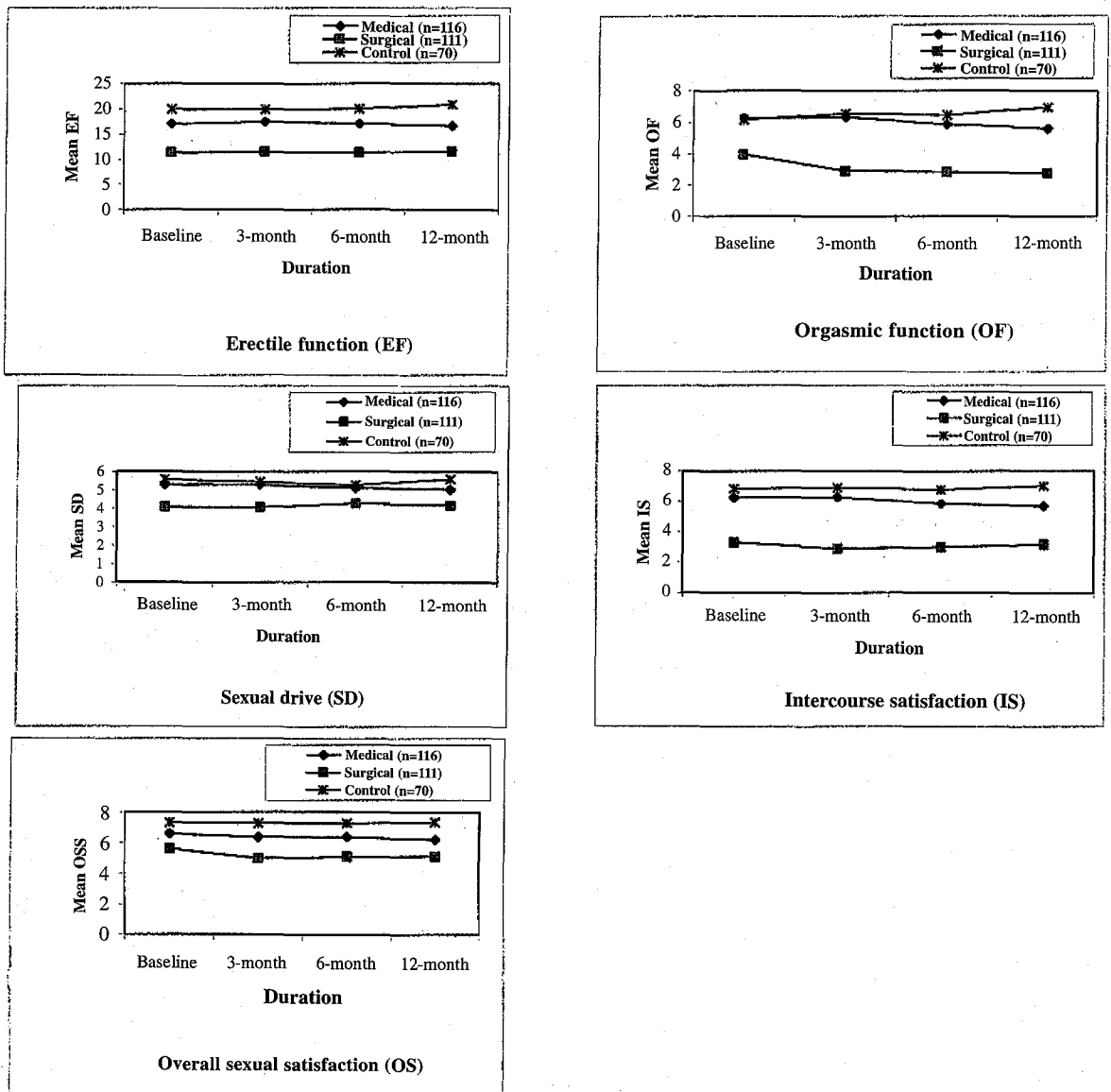
Table II
Means and standard deviations of sexual function in the surgical group

Sexual Function	Baseline		3-month		6-month		12-month	
	Mean (n=70)	SD	Mean (n=70)	SD	Mean (n=70)	SD	Mean (n=70)	SD
Erection frequency	2.19	1.58	2.18	1.58	2.18	1.54	2.24	1.51
Erection firmness	2.17	1.61	2.17	1.62	2.11	1.54	2.14	1.52
Penetration ability	1.60	1.92	1.84	1.89	1.80	1.80	1.88	1.79
Maintenance frequency	1.52	1.79	1.69	1.75	1.70	1.69	1.75	1.66
Maintenance ability	1.54	1.86	1.74	1.83	1.80	1.83	1.84	1.80
Intercourse frequency	0.53	0.67	0.64	0.64	0.77	0.79	0.80	0.74
Intercourse satisfaction	1.36	1.73	1.24	1.43	1.26	1.35	1.25	1.30
Intercourse enjoyment	1.07	1.33	1.04	1.19	1.15	1.18	1.17	1.18
Ejaculation frequency	1.93	2.10	1.27	1.60	1.31	1.55	1.19	1.42
Orgasm frequency	1.74	1.84	1.76	1.64	1.73	1.59	1.65	1.53
Desire frequency	1.92	0.74	1.95	0.80	2.05	0.76	2.03	0.78
Desire level	2.08	1.02	2.10	0.93	2.26	0.87	2.13	0.93
Overall satisfaction	2.67	1.02	2.31	0.99	2.39	1.05	2.25	1.05
Relationship satisfaction	3.02	0.89	2.81	0.83	2.90	0.84	2.89	0.82
Erection confidence	2.07	0.96	2.04	0.91	1.95	0.91	1.94	0.97

Table III
Means and standard deviations of sexual function in the control group

	Baseline		3-month		6-month		12-month	
	Mean (n=70)	SD	Mean (n=70)	SD	Mean (n=70)	SD	Mean (n=70)	SD
Erection frequency	3.54	1.76	3.54	1.66	3.51	1.75	3.73	1.70
Erection firmness	3.53	1.73	3.51	1.67	3.53	1.72	3.63	1.69
Penetration ability	3.03	2.08	3.13	1.97	3.24	2.02	3.50	2.00
Maintenance frequency	3.01	2.07	3.11	1.94	3.19	1.98	3.37	1.96
Maintenance ability	3.37	2.19	3.51	2.04	3.44	2.04	3.60	1.97
Intercourse frequency	1.47	1.43	1.51	1.40	1.36	1.29	1.30	1.17
Intercourse satisfaction	2.84	1.97	2.98	1.87	3.01	1.84	3.20	1.83
Intercourse enjoyment	2.36	1.59	2.53	1.55	2.44	1.49	2.60	1.48
Ejaculation frequency	3.10	2.01	3.34	1.94	3.40	1.98	3.60	1.91
Orgasm frequency	3.01	1.88	3.23	1.81	3.10	1.83	3.41	1.73
Desire frequency	2.70	1.08	2.70	1.05	2.60	0.97	2.61	1.03
Desire level	2.90	0.89	2.80	0.83	2.70	0.77	2.87	0.81
Overall satisfaction	3.69	0.89	3.74	0.94	3.67	0.97	3.77	0.85
Relationship satisfaction	3.74	0.79	3.73	0.92	3.71	0.89	3.76	0.82
Erection confidence	3.34	0.93	3.17	0.96	3.13	0.93	3.19	0.91

Fig 1: Mean domain of IIEF-15 in patient with LUTS treated medically and surgically and controls



Discussion

This study noted that older aged men are more likely to undergo surgical intervention for LUTS. This is because as age increases, the prostate gland will enlarge and become susceptible to chronic and acute retention, formation of bladder stones, urinary tract infections (UTI) and renal impairment secondary to bladder outlet obstruction (BOO) in addition to a generally weak urinary stream¹⁸⁻¹⁹.

At baseline, the surgical group had lower mean scores in all five domains of the IIEF-15. The loss of interest in sex, pain, bothersomeness, deterioration of QoL such as sleep, appetite, concentration and other psychological disorders such as anxiety, depression and psychiatric morbidity were factors that contributed to the low level of sexual function. This has been noted in other studies as well¹⁸⁻¹⁹. Patients in the medical group exhibited higher mean scores in all five domains of IIEF-15 than the surgical group. The surgical group had a higher incidence of sexual dysfunction partly due to the LUTS, as showed in another study^{12, 21}.

The majority of patients with LUTS had lower sexual drives particularly in the surgical group. Since most of the surgical group comprised of older aged patients, there was an association between production of testosterone and age. At an older age, the production of testosterone would be much more reduced. Reduction of testosterone level is noted to be associated with the decline of sexual drive (libido) that will reduce the frequency of erections²⁰.

A small proportion of patients experienced reduced potency at three months and maintained at twelve months after TURP. The risk of ED following TURP in potent men was relatively small in this study. This has also been demonstrated in another study¹¹.

TURP was noted to contribute to retrograde ejaculation and cause deterioration of sexual function in quite a number of patients in this study as in previous studies^{11,13}. Our findings also indicate a decrease in quality of erection in a small proportion of patients with LUTS after TURP, as seen in other studies^{4,9, 13}.

However, the majority of patients experienced slight improvement in erection at three to twelve months following TURP. This is mainly due to the improvement

of LUTS as well as psychological improvement which was noted in another study⁷.

A slight deterioration of orgasmic function in the surgical group was observed prior to treatment. This is mainly due to LUTS that causes low semen volume and ejaculation process. Retrograde ejaculation was found to occur in a majority of patients who had undergone TURP and this seems to be a common complaint among patients following TURP.

The dissatisfaction of sexual intercourse and overall sexual dissatisfaction in the surgical group prior to surgical treatment was mainly due to pain during sexual intercourse due to the LUTS, bothersomeness and abstinence from sex due to the LUTS. The sexual intercourse dissatisfaction and overall sexual dissatisfaction following TURP was mainly due to reasons such as deterioration and/or inability to maintain erection, premature ejaculation and retrograde ejaculation. In the medical group, an increase of satisfaction in sexual intercourse after alpha-blocker treatment is mainly due to the improvement of LUTS while the overall sexual dissatisfaction was due to the deterioration in erection and low sexual drive after treated with alpha-blockers.

However, to some patients, it was quite apparent that they were no longer interested in sex since they had enjoyed it during younger days and were no longer sexually active.

Conclusion

This study showed that TURP was associated with some changes in sexual function in patients with lower urinary tract symptoms on one-year of follow up. In the surgical group, among the domains of sexual function that were adversely affected were orgasmic function, intercourse satisfaction and overall sexual satisfaction. In contrast, in the medical group, all the domains of sexual function were relatively unaffected. Both TURP and alpha-blocker treatment contributed to a slight improvement of erectile function due to the improvement of LUTS.

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