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**Original research article**

# A study to assess the incidence of sexual side effects following medical treatment of BPH in Indian population.

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**Abstract**

**Aim:** to assess the incidence of sexual side effects following medical treatment of BPH in Indian population.

**Materials and methods:** The present observational study was conducted in the department of Urology, Indira Gandhi Institute of Medical Sciences Sheikhpura, Patna, from January 2018 - June 2019 among 120 patients diagnosed with BHP. Patients diagnosed with symptomatic BPH and willing for medical treatment were included in this study. Patients received either of following medical treatment: Tamsulosin 0.4 mg once a day (qd),/Silodosin 4-8 mg qd,/Alfuzosin SR 10 mg qd,/combination of Dutasteride 0.5 mg PO qd and Silodosin 4-8 mg qd

**Results:** Out of total 120; 7 were given Alfuzosin; 24 were treated with Tamsulosin; 41 were with Silodosin and rest 48 were given combination of Silodosin & dutasteride. 2 patients couldn't have sexual intercourse due to ED. 8 out of the 39 patients (20.5%) treated with silodosin 8mg who could have sexual intercourse., complained of EjD.3 out of the 41 patients (7.3%) treated with silodosin and dutasteride, who could have sexual intercourse could not achieve orgasm.

**Conclusion:** The incidence of sexual dysfunction is least with Alfuzosin. Among drug treatment-combination therapy is associated with maximum incidence of sexual dysfunction in comparison to drugs used alone.

**Keywords:** drug therapy, Benign prostatic hyperplasia, sexual dysfunction

## Introduction

Benign prostatic hyperplasia (BPH), and its clinical manifestation as lower urinary tract symptoms (LUTS), is a major health concern for aging men. An estimated 42% of men aged 51 to 60 have BPH, compared with over 70% of those aged 61 to 70, and almost 90% of those aged 81 to 90.[1]

Enlargement of the prostate may lead to subsequent obstruction of the bladder neck, which can produce lower urinary tract symptoms (LUTS) or complications such as urinary tract infection, bladder stones, urinary retention, and renal failure. The bothersome nature of these symptoms generally prompts patients to seek medical attention. Some patients will require surgery for BPH, but even patients with severe symptoms may be treated medically, usually with α1-adrenergic receptor inhibitors or 5α-reductase inhibitors.[2]

The side effects from medical therapy for BPH have been well described. For obvious reasons, cardiovascular effects, including dizziness, postural hypotension and syncope, typically elicit the most concern from both patients and physicians. Ejaculatory and sexual dysfunction can

also result from medical therapy for BPH and can have a significant impact on quality of life. In older patients, these medication-related side effects may be superimposed on age-related declines in sexual function. A recent multinational survey of more than 14000 men between the ages of 50 and 80 year indicated that problems with all aspects of sexual function are strongly correlated with the severity of LUTS.[2] The severity of LUTS may be considered a risk factor for sexual dysfunction, similar to diabetes, hypertension, and depression. Sexual disorders and their both ersomeness have been found to be strongly correlated with both age and the severity of LUTS, independent of the presence of other comorbidities.[3] All the four domains of sexual function-erection, ejaculation. orgasm and libido have been studied and reported in western literature. This study has been undertaken to assess the incidence of sexual side effects following medical treatment of BPH in Indian population.

**Materials and Methods**

The present observational study was conducted in the department of Urology, Indira Gandhi Institute of Medical Sciences Sheikhpura, Patna, from January 2018 - June 2019 among 120 patients diagnosed with BHP.

Ethical consideration:

The study protocol was approved by the institutional ethics committee. Each study participant provided written informed consent before participation in the study. The study was conducted in accordance with the approved protocol, International Conference of Harmonization – Good Clinical Practice guidelines, principles that have their origin in Declaration and Helsinki.

**Inclusion criteria:**

Patients diagnosed with symptomatic BPH and willing for medical treatment were included in this study.

**Exclusion criteria:**

Patients with pre-existing sexual dysfunction were excluded from the study.

**Sample size:**

Reference values are used to describe the dispersion of variables in individuals. They are usually reported as population-based reference intervals (RIs) comprising 95% of the population. International recommendations state the preferred method as a priori nonparametric determination from at least 120 reference individuals. So at least 120 men diagnosed with BPH were included in the present study.

Initial evaluation: All the patients with complaints suggestive of LUTS due to BPH were thoroughly evaluated with History & Physical examination, DRE & Focused neurological examination, Baseline blood parameters, USG KUB, Uroflow & PVR, International Prostate Symptom Score (IPSS), (MSF) -4 questionnaire &International Index of Erectile Function (IIEF) questionnaire ,pre-treatment i.e. at OPD visit/at the time of admission.

Treatment procedures

Patients received either of following medical treatment: Tamsulosin 0.4 mg once a day (qd),/Silodosin 4-8 mg qd,/Alfuzosin SR 10 mg qd,/combination of Dutasteride 0.5 mg PO qd and Silodosin 4-8 mg qd

Follow-up – after 3 months

1. LUTS evaluation with IPSS Scoring[4]

2. Sexual function assessment using male sexual function (MSF) -4 questionnaire and IIEF -5 questionnaires.[5,6]

## Results

**Table 1: Distribution according to medical treatment given**

| Treatment | No of patients | % age |
|---|---|---|
| Alfuzosin | 7 | 5.80 |
| Tamsulosin | 24 | 20.0 |
| Silodosin | 41 | 34.2 |
| Silodosin & dutasteride | 48 | 40.0 |
| Total | 120 | 100% |

**Table 2: Age wise distribution of the study subjects**

| Age group | Alfuzosin N (%) | Tamsulosin N (%) | Silodosin N (%) | Silodosin & dutasteride |
|---|---|---|---|---|
| 40-49 | 7 (100.0) | 0 | 3 (7.3) | 1 (2.1) |
| 50-59 | 0 | 10 (41.6) | 22 (53.6) | 25 (52.1) |
| 60-69 | 0 | 14 (58.4) | 16 (39.0) | 22 (45.8) |
| Total | 7 (100.0) | 24 (100.0) | 41 (100.0) | 48 (100.0) |

**Table 3: Comparison of the sexual side effects of medical treatment usedin this study**

| Treatment | No. of patients | ED | EjD | Orgasmdisorder | Sexual interest disorder |
|---|---|---|---|---|---|
| Alfuzosin | 7 | 0% | 0% | 0% | 0% |
| Tamsulosin | 24 | 0% | 12.5% | 0% | 0% |
| Silodosin | 41 | 4.8% | 20.5% | 0% | 0% |
| Silodosin & dutasteride | 48 | 14.58% | 29% | 7.3% | 0% |

## Discussion

In the present study the predominant age group is 60-69 yrs. This age characteristic is 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.[7]

The sexual function too showed variation among different age groups. The factors, the erectile dysfunction and ejaculatory dysfunction were more common in the age group of 60-69, compared to other age groups. May be because of underlying organic changes already present predisposing them to sexual dysfunction after use of drugs. More 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.

In the post treatment evaluation after medical therapy, the ejaculatory function decreased in around 22% of the patients. This can be expected because retrograde ejaculation is one of the commonest adverse effects associated with alpha blockers. Post medical treatment, the erectile dysfunction incidence was less as compared to EjD.

Tamsulosin

Ejaculation disorders were the most frequently observed side effect of tamsulosin therapy. 3 out of 24 patients (12.5%) treated with 0.4 mg tamsulosin complained of EjD. There was no change in erectile function, orgasm and interest in sex. It is similar to the world literature.
In a phase III multicenter, placebo-controlled study of tamsulosin in benign prostatic hyperplasia,the incidences of ejaculatory dysfunction for placebo,4 mg, and 8 mg tamsulosin were 0.2%,8.4%, and 18.1%, respectively.[8] In a long-term, open-label extension study, 30% of patients treated with tamsulosin reported abnormal ejaculation.[9]

Roehrborn C in his study reported that the 10% risk of ejaculatory disturbance cited in 2003 Guideline associated with tamsulosin was lower in recent studies.[10] In a 2003 Cochrane review found EjD in 18% of patients taking 0.8 mg dose tamsulosin, 6% in0.4 mg group, and 0% in patients taking 0.2 mg dose.[11]

Silodosin 8 out of the 39 patients (20.5%) treated with silodosin 8mg who could have sexual intercourse, complained of EjD. More number of patients were in the 60-69 age group.
Marks and colleagues pooled the data from 2 pivotal trails performed in the United States evaluating the safety and efficacy of silodosin in men with LUTS BPH. Anejaculation was reported in 28.1% of the patients.[12] 28% of silodosin-treated patients in the 2 US studies reported abnormal ejaculation (classified as RE), as did 22.3% of silodosin-treated patients in the Japanese study.[13]

In a pooled analysis of 3 randomized placebo controlled studies consisting of almost 1500 subjects, Chapple CR et al reported EjD in 22% of subjects treated with silodosin compared with only 0.9% of placebo patients.[14] Only 2 out of 41(4.8%) patients treated with Silodosin, complained of erectile dysfunction (ED).
Alfuzosin
None of the patients in this study taking alfuzosin had any sexual side effects of the drug. Roehrborn CG, in the two alfuzosin pivotal trials demonstrated both efficacy and excellent tolerance of alfuzosin. The primary advantage of alfuzosin was the lack of ejaculatory dysfunction associated with tamsulosin.[15]

Similarly ALFORTI study- a double-blind, controlled study that showed no significant difference in EjD, decreased libido, or ED between placebo and alfuzosin adding further evidence to the low incidence of sexual side effects with nonselective ABs.[16]
Silodosin and dutasteride

12 out of the 41 patients (29%) treated with silodosin and dutasteride, who could have sexual intercourse complained of EjD. Most of the patients, who had EjD were in the 60-69 years age group. 7 out of the 48 patients (14.58%) treated with silodosin 8mg and dutasteride 0.5 mg complained of ED. More number of patients in the 60-69 age groups had ED.
3 out of the 41 patients (7.3%) treated with silodosin and dutasteride, who could have sexual intercourse, could not achieve orgasm. All of these patients were in the 60-69 years age group.

Several studies showed that the highest rates of sexual AEs also occur in the combination group. However, the larger contributor to the sexual AEs does seem to be the 5ARI and not the AB. This is evidenced by the MTOPS data in which worsening ED, EjD, and libido were seen in the 5ARI (finasteride) and combination therapy groups (finasteride and doxazosin) but absent from the AB group.[17] In their systematic review and metaanalysis, Gacci and colleagues found EjD was more common with combination therapy than with either ABs (OR 3.75) or 5ARIs (OR 2.7) alone.[18]

## Conclusion

The present study concluded that the incidence of sexual dysfunction is least with Alfuzosin. Among drug treatment-combination therapy is associated with maximum incidence of sexual dysfunction in comparison to drugs used alone.

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