Original Article

Incidence of Erectile Dysfunction in Enlarge Prostate Patients

Erectile Dysfunction in Enlarge Prostate

Shahzad Ali, Naresh Kumar Valecha, Mohammad Mansoor, Saeed Ahmad Khan and Yasir Khan

ABSTRACT

Objective: To determine the frequency of erectile dysfunction in patients with benign prostatic hyperplasia.
Study Design: Descriptive Study
Place and Duration of Study: This study was conducted at the Department of Urology, Jinnah Postgraduate Medical Centre (JPMC), Karachi, Pakistan for a period of six months from April, 2020 to October, 2020.
Materials and Methods: It was possible to include everyone who met the inclusion criteria and visited JPMC Karachi. It was only after an explanation of the study's risks and benefits that informed consent was obtained. Five items were included in the questionnaire. Data was calculated using SPSS version 23.0.
Results: Mean ± SD of age was 54.9±8.4 years. In distribution of obesity, 71 (64%) were obese while 40 (36%) were non-obese. Diabetes mellitus was documented in 43 (38.7%) patients. Erectile dysfunction was documented in 21 (18.9%) patients.
Conclusion: It is to be concluded that erectile dysfunction is fairly common in patients with benign prostatic hyperplasia. Furthermore, our findings outline the need for future research to investigate those factors that could be considered as higher risk of erectile dysfunction
Key Words: Erectile Dysfunction, Benign Prostatic Hyperplasia, Lower Urinary Tract Symptoms

Citation of article: Ali S, Valecha NK, Mansoor M, Khan SA, Khan Y. Incidence of Erectile Dysfunction in Enlarge Prostate Patients. Med Forum 2021;32(12):11-14.

INTRODUCTION

Sexual health is an integral part of overall health and quality of life. When it comes to erectile dysfunction (ED), it is described as a chronic inability to achieve and maintain an adequate erection for a satisfactory sexual intercourse.[1] If you or your loved one suffers from an eating disorder, you may be at risk for more significant health issues, such as coronary heart disease, which is a forerunner to ED.[2–4]

Benign prostatic hyperplasia (BPH) is defined as benign, noncancerous enlargement of the prostate caused by the growth of new stromal and epithelial cells. One of the most common disease that affects older men aged over 50 years and which leads to the symptoms of the lower urinary tract (LUTS-lower urinary tract symptoms)[5].

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Received: August, 2021
Accepted: October, 2021
Printed: December, 2021

In general, erectile dysfunction and BPH/LUTS both affect quality of life; therefore, preservation of sexual function is important and required sympathetic consideration in management of BPH in male patients.[6]

The development of ED and LUTS as a result of BPH is thought to be caused by a number of common pathogenic processes. An insight of the pathophysiology of these disorders can be gained by studying the pathways that connect chronic inflammation with an imbalance in sex steroid ratio[7-9].

In men, LUTS are frequently caused by BPH and are frequently attributable to histologic BPH. Age, BPE, hypogonadism, sedentary lifestyle, depression, hypertension and cardiovascular disease, hyperlipidemia, diabetes, obesity, and inflammation are all risk factors for LUTS in males.[10-13]

The incidence of BPH and ED in older men increases with age[14]. According to the Massac husetts Male Aging Study (MMAS) data, the incidence of ED is 26 newly discovered in 1,000 men annually, and ED was present in all age groups, although there is evident correlation with age[15] Comorbidities such as cardiovascular disease, type 2 diabetes, dyslipidemia, and obesity are highly associated with LUTS/BPH and ED regardless of age[16]. Clinicians dealing patients with BPH and/or ED should have considered possibility that patient may have dyslipidemia, hypertension, metabolic syndrome and other associated conditions.

Since ED and BPH/LUTS are correlated, patient seeking consultation for one condition should also be screened for complaints about other condition, so that

patient management includes all possible associated conditions.

Physicians treating LUTS/BPH should be well aware of adverse effects affecting the sexual life of patients and sexual function should be fully evaluated prior to start of treatment and monitored through out to ensure that choice of treatment is appropriate.

Very scanty local studies are available in our local setup to assess the erectile dysfunction in patients with benign prostatic hyperplasia.

As different diseases have different prevalence in different areas of the world depending on the lifestyle, management, diet, socioeconomic and geographical location. That's why the applicability of international literature is not possible in our population and not be generalized in our population. The subjected results of the study will be shared with urologists to draw the conclusion whether the medical treatment for BPH is justified or not in terms of sexual health of the patient.

MATERIALS AND METHODS

This prospective descriptive study was conducted in department of urology at Jinnah postgraduate medical center, Karachi from April 18, 2020 to October 17, 2020. Men with symptomatic BPH having erectile dysfunction, aged between 50- 70 years were included in this study. Patients who had neurological disorder and did not give consent were excluded from the study. 111 Patients were selected from OPD, by using non-probability consecutive sampling. Informed written consent was taken prior to inclusion by them to be part of study. Initial bio data was recorded on predesigned proforma. Trans-abdominal ultrasound was used to evaluate the size of prostate. LUTS and their severity were recorded according to IPSS scoring system.

To evaluate erectile dysfunction, self- administered questionnaire for International index of Erectile Dysfunction was filled by each participant. The questionnaire consisted history of last 4 weeks, based on five items: 1. confidence in getting erection, 2. frequency of achieving erections hard enough for vaginal penetration, 3. frequency of maintaining erection after penetration, 4. ability to maintain erection to completion of intercourse, 5. How often it was satisfactory whenever you attempted. Each item had maximum score of 5 giving questionnaire a full score of 25. Erectile dysfunction was labelled as positive if the patient had IIEF-5 score of ≤ 21, and above 21 was considered as normal erectile function.

Data was entered and analyzed by using SPSS software version 23.0. Mean ± SD was calculated for age, weight, height and BMI. Frequencies and percentages were computed for obesity, hypertension, diabetes mellitus and outcome variable i.e. erectile dysfunction (yes/no). Post stratification, Chi-square/ Fisher's Exact test as appropriate was applied. A two-sided probability value ≤ 0.05 was considered significant.

RESULTS

Total 111 patients were included in this study, who full filled the criteria of inclusion. Mean age of the patients was 54.9±8.4 years ranging from 50 years to 70 years, while mean BMI was 26.5 + 5.6 kg/m^2. 64% of the patients were obese while 40% were non-obese. DM was present in 38.7% of the patients and HTN in 52.3% patients. Out of 111 patients, 21 patients (18.91%) had erectile dysfunction. Stratification of ED was done with age, DM, obesity and HTN that was statistically insignificant as shown in tables 1,2,3 and 4.

Table No.1: Stratification of Age Group with Erectile Dysfunction (N=111)

Age group [in years]	Erectile dysfunction		P-value
	Yes	No	
45 – 60	14 (12.6%)	70 (63.1%)	0.285
> 60	7 (6.3%)	20 (18.0%)	

Applied Chi-Square test

Table No.2: Stratification of Obesity with Erectile Dysfunction(N=111)

Obesity	Erectile dysfunction		P-value
	Yes	No	
Obese	13 (11.7%)	58 (52.3%)	0.827
Non-obese	8 (7.2%)	32 (28.8%)	

Applied Chi-Square test

Table No. 3: Stratification of Hypertension with Erectile Dysfunction(N=111)

Hypertension	Erectile dysfunction		P-value
	Yes	No	
Hypertensive	10 (9.0%)	48 (43.2%)	0.637
Non-hypertensive	11 (9.9%)	42 (37.8%)	

Applied Chi-Square test

Table No.4: Stratification of Diabetes Mellitus with Erectile Dysfunction (N=111)

Diabetes mellitus	Erectile dysfunction		P-value
	Yes	No	
Diabetic	8 (7.2%)	35 (31.5%)	0.946
Non-diabetic	13 (11.7%)	55 (49.5%)	

Applied Chi-Square test

DISCUSSION

The present study was based on a cross-sectioned outline of men with ages distributed between 50 and 70y, from outpatient department of tertiary care center for the treatment of urological diseases. These men were visited to OPD for lower urinary tract symptoms secondary to BPH.

It has been seen that ED is increasing with increase in age. The ED often is multifactorial, can be organic OR psychogenic in origin. While the etiology of BPH is not exactly determined[17].

Regardless of impact of age, co morbidity, differences in life style, the symptoms of BPH may be related to

ED in elderly men, according to epidemiological studies.[18]

Mechanism of action of α-1 adrenergic receptor is possible connection between these two diseases. The tone of the smooth muscle cells in the prostatic capsule and the neck of the bladder increases via these receptors, just as a penile erection dose. Noradrenaline and androgens causes contraction of smooth muscles, through adrenergic receptors which affect the process of relaxation of same, which would lead to erectile dysfunction.[19]

Although volume of prostate in BPH and its association to ED is indisputable, but precise mechanism is not yet confirmed.[20.]

In most men, after age of 40 years, ED and BPH evolve as age related phenomena.[21]

Prevalence of ED in men increases under influence of age, BPH and comorbidities.[22,23.] Erectile dysfunction (ED) was shown to be more common in men who had an increase in the severity of their LUTS/BPH. The findings of our study are comparable with different studies conducted by various researchers worldwide, few of which are discussed below.

The mean age noted in our study was 54.9±8.4 years. In the study of Valdivia JG, et al.[24] The mean age was noted as 51±14.7 years. Another study of Reddy SV, et al[25] noted age as 45.67±13.21 years. Ugalde-Resano R, et al[26] stated age as 49.48±14.1 years. In this study, the mean weight was 67.2±9.3 kg whereas mean height was 162.5±12.8 cm. Jimenez-Romero ME, et al[27] noted the mean weight as 78.5 kg and height as 167.5 cm. The mean body mass index was 26.7±5.6 kg/m^2. Ugalde-Resano R, et al[26] noted mean BMI as 28.54±5.6 kg/m^2. The studies of Jimenez-Romero ME, et al[26] and Park DS, et al[28] reported the BMI as 27.31 kg/m^2 and 24.4±2.4 kg/m^2 respectively.

In present study, out of 111 patients, 71 (64%) were obese while 40 (36%) were non-obese while hypertension was noted in 58 (52.3%) patients.

A multinational prospective study of sexual function and the comorbidities noted obesity in 36% and hypertension in 38% cases. Another study of Santos PR, et al[29] noted hypertension in 20 (41.6%) patients. In current study, diabetes mellitus was documented in 43 (38.7%) patients. The prevalence of diabetes in the study of Toluey M, et al[30] was noted as 307 (42.8%). Lakhani MS, et al[31] noted diabetes in 64 (45.1%) patients. In present study, frequency of erectile dysfunction among 111 patients was found to be in 21 (18.9%).

In order to confirm the link between BPH and ED, we feel that further international studies of men with LUTS/ BPH and no chronic illness are required, and that these studies should assess urinary symptoms and erectile function using IPSS and IIEF, respectively.

CONCLUSION

Erectile dysfunction and BPH are both frequent illnesses that have a high prevalence and a considerable negative impact on quality of life. As both conditions have multifactorial and complex etiologies, patients can have maximum benefits with multidisciplinary approach to treat Diabetes, Dyslipidemias, metabolic syndrome and coronary artery diseases. Furthermore, our findings outline the need for future research to investigate those factors that could be considered as higher risk of erectile dysfunction.

Author's Contribution:

Concept & Design of Study:	Shahzad Ali
Drafting:	Naresh Kumar Valecha, Mohammad Mansoor
Data Analysis:	Saeed Ahmad Khan, Yasir Khan
Revisiting Critically:	Shahzad Ali, Naresh Kumar Valecha
Final Approval of version:	Shahzad Ali

Conflict of Interest: The study has no conflict of interest to declare by any author.

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