IJMA

International Journal of Medical Arts

Volume 6, Issue 3, March 2024

P- ISSN: 2636-4174
E- ISSN: 2682-3780

Available online at Journal Website
https://ijma.journals.ekb.eg/
Main Subject [Andrology]

Original Article

Assessing the Influence of Sexual Activity on Benign Prostatic Hyperplasia

Muhammed Salah Elgendy *, Ahmed Sadek Mohamed Salem, Ahmad Kamel Seddeik Abdel-Hameed, Amr Gharib Mohamed Hussein

Department Dermatology, Venereology and Andrology, Faculty of Medicine, Al-Azhar University, Cairo, Egypt

Article information

Received: 26-07-2023

Accepted: 29-08-2023

DOI: 10.21608/ijma.2023.225174.1747.

*Corresponding author
Email: salahmuhammed93@gmail.com

Citation: Elgendy MS, Salem ASM, Abdel-Hameed AKS, Hussein AGM. Assessing the Influence of Sexual Activity on Benign Prostatic Hyperplasia. IJMA 2024 March; 6 [3]: 4228-4232. doi: 10.21608/ijma.2023.225174.1747.

ABSTRACT

Background: Benign prostatic hyperplasia [BPH] is a frequent cause of lower urinary tract symptoms [LUTS] in men and is a common histological finding, particularly in aging men. Benign prostatic hyperplasia [BPH] that presents with symptoms is accountable for the manifestation of lower urinary tract symptoms [LUTS], which have a detrimental impact on various dimensions of quality of life [QoL] and sexual function.

The aim of the work: To Assess the association between the frequency of ejaculation overtime on the incidence of benign prostatic hyperplasia.

Patients and Methods: This study was conducted on two groups, each group composed of 100 patients who were age-matched. All patients were subjected to the following: full history taking and thorough general examination, assessment of manifestations of lower urinary tract symptoms [LUTS], and sexual dysfunction.

Results: The two groups were comparable regarding demographics, smoking status or marital status, and Frequency of sex per week [P-value 0.98]. There was a significant difference between both groups as regards Prostatic size and prostate-specific antigen [PSA] Levels [P-value <0.001].

Conclusion: PSA levels were significantly higher in benign prostatic hyperplasia patients. Most of the studied cases had mild LUTS and minor erectile dysfunction. But there was no difference in the incidence of BPH regarding frequencies of ejaculation over time.

Keywords: Sexual Activity; Benign Prostatic Hyperplasia; Lower Urinary Tract Symptoms.

This is an open-access article registered under the Creative Commons, ShareAlike 4.0 International license [CC BY-SA 4.0] [https://creativecommons.org/licenses/by-sa/4.0/legalcode.

INTRODUCTION

The development of benign prostatic hyperplasia [BPH] can be characterized by the decline of clinical factors such as lower urinary tract symptoms [LUTS], quality of life, and peak flow rate, along with an increase in prostate size. Additionally, undesired consequences such as acute urinary retention [AUR] and the need for BPH-related surgery may arise [1].

BPH and its associated symptoms have a significant global impact, affecting a substantial number of men. In 2010, the estimated prevalence of BPH was reported to exceed 210 million men worldwide [2]. A significant proportion of males aged 50 and above, ranging from 50% to 80% in respective age groups, encounter lower urinary tract symptoms [LUTS] resulting from benign prostatic hyperplasia [BPH] [3].

The etiology of benign prostatic hyperplasia [BPH] is complicated and remains incompletely understood. There exist various risk factors, which can be categorized as either modifiable or non-modifiable, that contribute to the increased likelihood of developing and progressing benign prostatic hyperplasia [BPH] and lower urinary tract symptoms [LUTS]. While a significant number of these hazards have not undergone thorough investigation, they hold potential value in offering insights to patients and informing the development of strategies aimed at preventing and treating benign prostatic hyperplasia [BPH]. Several risk factors have been identified for benign prostatic hyperplasia [BPH], including metabolic syndrome, diabetes, obesity, hypertension, nutrition, and sex hormone levels. The simultaneous occurrence of these factors is infrequent, although there may be instances of overlap in certain individuals [4].

Benign prostatic hyperplasia is responsible for the manifestation of lower urinary tract symptoms [LUTS], and it has been observed that around 70% of men experiencing LUTS/BPH also exhibit concurrent erectile dysfunction [ED] [5].

It is common for individuals who are referred to clinicians for lower urinary tract symptoms [LUTS] and benign prostatic hyperplasia [BPH] to also exhibit erectile dysfunction [ED], and conversely, individuals presenting with ED often exhibit LUTS/BPH. The incidence of coexisting lower urinary tract symptoms [LUTS] and erectile dysfunction [ED] tends to rise with advancing age. Furthermore, it is frequently observed that there exists a correlation between the severity of these conditions. This implies that a substantial number of males who actively pursue medical treatment for either lower urinary tract symptoms [LUTS] or erectile dysfunction [ED] tends to display symptoms associated with both disorders [6].

The purpose of this study was to assess the association between the frequency of ejaculatory events over a specific duration and the incidence of benign prostatic hyperplasia.

PATIENTS AND METHODS

This cross-sectional controlled study was conducted in the Dermatology, Venereology, and Andrology Department, Faculty of Medicine, Al-Azhar University. The study participants were 100 patients diagnosed with BPH based on clinical manifestations of lower urinary tract symptoms [LUTS], increased prostate size by pelvic ultrasonography, and high level of serum prostate-specific antigen [PSA], and 100 control. Our study guided the Helsinki Declaration principles. Ethical approval was obtained from the same institution. All participants [patients and controls] gave their written informed consent before the beginning of the study. The Inclusion criteria were: Men over the age of forty. The Exclusion criteria were: 1] Patients with a history of prostatic cancer. 2] Obese patients [Body mass index [BMI] > 30 kg/m^2]. 3] Patients with diabetes mellitus or Hypertension. 4] Patients with hyperlipidemia.

Data collection: All individuals were subjected to the following: Complete history tacking, and baseline general examination. Demographics and baseline clinical data were collected at the baseline. BPH was diagnosed based on the patient's complaints [LUT symptoms], assessment of the prostatic size by ultrasonography, and measuring of the PSA. The frequency of sexual activity per week was recorded.

The data was collected, tabulated, and subjected to statistical analysis using SPSS 26.0 for Windows [SPSS Inc., Chicago, IL, USA]. Qualitative data were represented using numerical values and percentages. Quantitative data were characterized by employing various statistical measures, including the range [comprising the minimum and maximum values], the mean, the standard deviation, and the median. All statistical comparisons were conducted using a two-tailed test with a significance level. A p-value less than or equal to 0.05 is considered

statistically significant, while a p-value greater than 0.05 indicates a lack of statistical significance. The tests used were the Chi-square [X^2] test of significance, which was used to compare proportions between qualitative parameters, and an independent t-test, which was used to compare two independent groups with parametric quantitative data.

RESULTS

Our study included 100 patients with BPH and 100 control. According to the severity of LUTS in cases, 77% were mild 18% were moderate, and 5% were severe. The ED was reported only in two cases. The mean age of the studied patients was 60.13 ± 9.91 years. The two groups were matched for their demographic characteristics [P value > 0.05] [Table 1].

Regarding the frequency of sexual activity per week, the two groups were comparable and the difference was not significant statistically [P value = 0.98] [Table 2].

In terms of the prostatic size, it was significantly higher in cases than in control [P value = 0.001]. Also, the total and free PSA were significantly higher in cases than in the control [P value = 0.001] [Table 3]. By comparing the two groups regarding masturbation and nocturnal emission incidence, masturbation was reported in two individuals from the control group with no individuals from the cases. However, the nocturnal emission was reported in two individuals from the case group, and one individual from the control group. This difference between the 2 groups was not significant [P value = 0.45, and 0.48 respectively] [Table 4].

Table [1]: Demographics and baseline clinical data of the 2 groups

Variables		Cases group [n=100]	Control group [n=100]	P value
Age [years]	Mean ± SD	60.13 ± 9.91	46.1 ± 4.27	0.88 [a]
	Median [Min.-Max.]	60 [40-81]	45 [40-64]	
Smoking, n [%]	Yes	52 [52%]	58 [58%]	0.77 [b]
	No	48 [48%]	42 [42%]	
Marital status, n [%]	Single	6 [6%]	3 [3%]	0.45 [c]
	Married	94 [94%]	97 [97%]	
Lower urinary tract symptoms, n [%]	Mild	77 [77%]	0 [0%]	-
	Moderate	18 [18%]	0 [0%]	
	Severe	5 [5%]	0 [0%]	
Erectile dysfunction, n [%]	Yes	2 [2%]	0 [0%]	0.001 [b]
	No	98 [98%]	0 [0%]	

a: Independent *t*-test. b: Chi-square test. c: Fisher exact test.

Table [2]: Comparison between the 2 groups regarding the frequency of sexual activity per week

	Cases group	Control group	P value [a]
Frequency of sex/week [at the beginning]			0.98
Mean ± SD	2.41 ± 0.75	2.37 ± 0.67	
Median [Minimum-Maximum]	2 [1-4]	2 [0-4]	
Frequency of sex/week [at the end]			0.40
Mean ± SD	1.26 ± 0.69	1.63 ± 0.45	
Median [Minimum-Maximum]	1 [0-2]	2 [0-3]	

a: Independent *t*-test

Table [3]: Comparison between the 2 groups regarding the prostatic size and PSA level.

	Variables	Cases group	Control group	P value [a]
Prostatic size	Mean ± SD	49.99 ± 23.09	25.1 ± 2.4	0.001
	Median [Minimum-Maximum]	41 [25-123]	20 [15-25]	
PSA Levels	Total	3.81 ± 4.64	2.1 ± 0.5	<0.001
	Free	0.84 ± 0.89	0.61 ± 0.12	<0.001
	Ratio	0.28 ± 0.1	0.29 ± 0.15	0.45

a: Independent *t*-test

Table [4]: Comparison between the 2 groups regarding masturbation and nocturnal emission

		Cases group [N=100]	Control group [N=100]	P value [a]
Masturbation	Yes	0 [0%]	3 [3%]	0.45
	No	100 [100%]	97 [97%]	
Nocturnal emission	Yes	2 [2%]	1 [1%]	
	No	98 [98%]	99 [99%]	

a: Fisher Exact test.

DISCUSSION

In adult males, the typical volume of normal prostates ranges from 15 to 30 ml. Prostates with a volume exceeding 30 ml are often considered to be enlarged. However, there is no universally established threshold for determining prostate enlargement, and many physicians rely on subjective observations during physical examinations to make this determination [7]. Moreover, the degree of prostatic enlargement exhibits significant variability due to the variable nature of hyperplasia [4].

According to the participant's demographics, it was similar in both study groups without significant difference, which agreed with the work of **Pietrzyk *et al.*** [8] and **Kim *et al.*** [9].

Our results showed that there was a significant difference between both groups regarding Prostatic size and PSA Levels [total and Free], which is in accordance with the research conducted by **Putra *et al.*** [10], who reported median PSA and Prostatic volume values - 4.29 [0.1-9.93] ng/mL and 30.68 [3-141.29] mL for the age category > 60 years.

Also, **Kim *et al.*** [11] reported that PSA level was 4.14 ±3.82 and Prostate size [g] was 44.08 ±24.76 in the studied population.

Concerning the difference between the case and control group as regards Masturbation and Nocturnal emission, it was not significant statistically. Our results showed that 77 cases had Mild, 18 had Moderate, and 5 had Severe LUTS while 2 cases had erectile dysfunction, which is in agreement with **Giuliano *et al.*** [12].

One of the most significant Erectile Dysfunction risk factors is age. According to several community-based studies, the age of the included men explains the variation in LUTS/ ED prevalence [13, 14].

Although the association between erectile function and lower urinary tract symptoms has been extensively studied, there is still a lack of complete knowledge regarding the patho-physiological changes in erectile function following surgery for BPH. Numerous large epidemiological studies have found a clear and independent relationship between LUTS and ED [15].

Based on a research study, it was observed that men who reported engaging in ejaculation at a frequency of at least once per week exhibited a reduced probability of encountering moderate to severe LUTS, as indicated by a transnational Prostate Symptom Score exceeding 7. The dose-response relationship that was observed showed a statistically significant correlation. Specifically, individuals who identified as male and reported a higher frequency of ejaculations displayed a lower occurrence of moderate to severe symptoms. Comparable trends were noted in relation to maximum urinary inflow rates, size of the prostate, and quality of life as it pertains to health. Nevertheless, based on the findings of this cross-sectional study, there is insufficient evidence to substantiate the claim that the frequency of ejaculations has any influence on LUTS. The apparent protective association observed may be attributed to the confounding effect of age on the relationship [16].

Another study also found no significant association between sexual activity and the risk of developing BPH [17].

In contrast to our results, **Song *et al.*** [18], indicated a correlation between the frequency of ejaculation and a reduced likelihood of developing benign prostatic hyperplasia [BPH] or lower urinary tract symptoms [LUTS], as well as prostate cancer.

Conclusion: Our study concluded that PSA levels were significantly higher in benign prostatic hyperplasia patients. Most of the

studied cases had mild LUTS and minor erectile dysfunction. But there was no difference in the incidence of BPH regarding frequencies of ejaculation over time.

Disclosure: None to be disclosed

REFERENCES

1. Fitzpatrick JM. The natural history of benign prostatic hyperplasia. BJU Int. 2006 Apr; 97 Suppl 2:3-6; discussion 21-2. doi: 10.1111/j.1464-410X.2006. 06097.x.
2. Vos T, Flaxman AD, Naghavi M, Lozano R, Michaud C, Ezzati M, *et al.* Years lived with disability [YLDs] for 1160 sequelae of 289 diseases and injuries 1990-2010: a systematic analysis for the Global Burden of Disease Study 2010. Lancet. 2012 Dec 15;380 [9859]: 2163-96. doi: 10.1016/S0140-6736[12]61729-2.
3. Egan KB. The Epidemiology of Benign Prostatic Hyperplasia Associated with Lower Urinary Tract Symptoms: Prevalence and Incident Rates. Urol Clin North Am. 2016 Aug;43[3]:289-97. doi: 10.1016/ j.ucl.2016.04.001.
4. Chughtai B, Forde JC, Thomas DD, Laor L, Hossack T, Woo HH, Te AE, Kaplan SA. Benign prostatic hyperplasia. Nat Rev Dis Primers. 2016 May 5;2: 16031. doi: 10.1038/nrdp.2016.31.
5. Rosen RC, Wei JT, Althof SE, Seftel AD, Miner M, Perelman MA; BPH Registry and Patient Survey Steering Committee. Association of sexual dysfunction with lower urinary tract symptoms of BPH and BPH medical therapies: results from the BPH Registry. Urology. 2009; 73[3]:562-6. doi: 10.1016/j.urology.2008.05.034.
6. Seftel AD, de la Rosette J, Birt J, Porter V, Zarotsky V, Viktrup L. Coexisting lower urinary tract symptoms and erectile dysfunction: a systematic review of epidemiological data. Int J Clin Pract. 2013 Jan; 67[1]: 32-45. doi: 10.1111/ijcp.12044.
7. Gholamrezanezhad A; Assadi M, Hossein J [eds]. Correlative Approach to Prostate Imaging. Radiology-Nuclear Medicine Diagnostic Imaging: A Correlative Approach, Wiley Blackwell, ISBN: 9781119603610; 2023, pp 533-553.
8. Pietrzyk B, Olszanecka-Glinianowicz M, Owczarek A, Gabryelewicz T, Almgren-Rachtan A, Prajsner A, Chudek J. Depressive symptoms in patients diagnosed with benign prostatic hyperplasia. Int Urol Nephrol. 2015 Mar; 47[3]: 431-40. doi: 10.1007/s11255-015-0920-5.
9. Pushkar P, Taneja R, Agarwal A. A prospective study to compare changes in male sexual function following holmium laser enucleation of prostate versus transurethral resection of prostate. Urol Ann. 2019 Jan-Mar;11[1]:27-32. doi: 10.4103/ UA.UA_44_18.
10. Putra IB, Hamid AR, Mochtar CA, Umbas R. Relationship of age, prostate-specific antigen, and prostate volume in Indonesian men with benign prostatic hyperplasia. Prostate Int. 2016 Jun;4[2]: 43-8. doi: 10.1016/j.prnil.2016.03.002.
11. Kim WT, Yun SJ, Choi YD, Kim GY, Moon SK, Choi YH, Kim IY, Kim WJ. Prostate size correlates with fasting blood glucose in non-diabetic benign prostatic hyperplasia patients with normal testosterone levels. J Korean Med Sci. 2011 Sep;26[9]:1214-8. doi: 10.3346/jkms.2011. 26.9.1214.
12. Giuliano F, Kaplan SA, Cabanis MJ, Astruc B. Hemodynamic interaction study between the alpha1-blocker alfuzosin and the phosphodiesterase-5 inhibitor tadalafil in middle-aged healthy male subjects. Urology. 2006 Jun;67[6]:1199-204. doi: 10.1016/j.urology.2006.01.001.
13. Gacci M, Eardley I, Giuliano F, Hatzichristou D, Kaplan SA, Maggi M, *et al.* Critical analysis of the relationship between sexual dysfunctions and lower urinary tract symptoms due to benign prostatic hyperplasia. Eur Urol. 2011 Oct;60[4]: 809-25. doi: 10.1016/j.eururo.2011.06.037.
14. Bouhadana D, Nguyen DD, Zorn KC, Elterman DS, Bhojani N. Patient Perspectives on Benign Prostatic Hyperplasia Surgery: A Focus on Sexual Health. J Sex Med. 2020 Oct;17[10]:2108-2112. doi: 10.1016/ j.jsxm. 2020.07.006.
15. Borchert A, Leavitt DA. A Review of Male Sexual Health and Dysfunction Following Surgical Treatment for Benign Prostatic Hyperplasia and Lower Urinary Tract Symptoms. Curr Urol Rep. 2018 Jun 19;19[8]:66. doi: 10.1007/s11934-018-0813-0.
16. Jacobsen SJ, Jacobson DJ, Rohe DE, Girman CJ, Roberts RO, Lieber MM. Frequency of sexual activity and prostatic health: fact or fairy tale? Urology. 2003;61[2]:348-53. doi: 10.1016/s0090-4295[02]02265-3.
17. Adeshara KA, Diwan AG, Tupe RS. Diabetes and Complications: Cellular Signaling Pathways, Current Understanding and Targeted Therapies. Curr Drug Targets. 2016;17[11]:1309-28. doi: 10.2174/138945011766615-1209124007.
18. Song PH, Min GE, Kim YU, Choi JY, KO YH, June M. MP18-07 Does High Ejaculation Frequency Increase The Risk Of Prostate Cancer, As Has Been Observed For BPH/LUTS?. J Urol. 2019 Apr;201[Supplement 4]: e266-e266. doi: 10.1097/01.JU.0000555452.61486.db.

IJMA

International Journal of Medical Arts

Volume 6, Issue 2, February 2024

P- ISSN: 2636-4174
E- ISSN: 2682-3780