Erectile Dysfunction Among Patients with Hypertension and AssociatedSocio-Demographic Factors

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ABSTRACT

Objective: To determine the frequency of erectile dysfunction among the patients of hypertension and analyze the associated socio demographic factors.

Study Design: Cross sectional analytical study.

Place and Duration of Study: Medicine Department, Pak Emirates Military Hospital Rawalpindi, from Aug to Oct 2018.

Methodology: Two hundred and five married male patients of hypertension diagnosed for more than one year by a consultant medical specialist were included in the study by non-probability consecutive sampling. Erectile dysfunction (ED) was assessed by using the International Index of Erectile Function-5 (IIEF-5). Socio-demographic factors in the study included age, education, smoking, poly-pharmacy and duration of illness.

Results: Out of 205 patients of hypertension, 95 (46.3%) patients had no ED, 57 (27.8%) patients had mild, 17 (8.3%) patients had moderate and 12 (5.2%) patients had severe ED. Mean age of the study participants was 39.94 ± 4.14 years. Mean duration of hypertension among the patients in this study was 6.24 ± 2.78 years. Increasing age, tobacco smoking, poly-pharmacy and long duration of illness had statistically significant association with ED (p-value <0.05) while education was not found significantly associated in our study.

Conclusion: There was a high frequency of erectile dysfunction among the patients suffering from hypertension. Special attention should be paid on individuals with advancing age and long duration of illness. Tobacco smoking should be discouraged and poly-pharmacy if, possible should be avoided among the patients suffering from hypertension and ED.

Keywords: Erectile dysfunction, Factors, Hypertension.

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INTRODUCTION

Erectile dysfunction (ED)is a broad terminology used to denote all the problems related to in sufficient erection to achieve a proper sexual intercourse and satisfaction. This problem has multiple dimensions and linked with significant distress and compromised quality of life in both partners.

Erectile dysfunction is a highly prevalent (around 60%) public health problem in both developing and developed countries.[1,2] ED is associated with and part of various medical conditions like heart disease,[3] Type II diabetes Mellitus,[4] chronic obstructive airway disease,[5] and chronic kidney disease etc.[6]

Chronic hypertension leads to end organ damage by causing endothelial damage, accelerated atherosclerosis and various other mechanisms.[7] Treatment of hypertension include life style changes, dietary modifications and pharmacological agents. Use of multiple anti-hypertensive drugs can lead to erectile dysfunction and decrease libido.[8] All these effects of hypertension in addition to the stress of a chronic disease prone the individual towards development of this sexual problem.[8]

Wang *et al*, searched the studies on this topic and prepared a meta-analysis throwing light on the fact that erectile problems and hypertension have a strong association.[9] Chinese population showed similar results and cardiovascular diseases werefrequently diagnosed among the patients presenting with ED. Among these cardiovascular diseases, HTN was the commonest illness and more than 40% had ED.[10] Another study published in 2016 was conducted on similar theme and concluded that ED has been a consistent finding in the patients of HTN and usually increase as the duration of HTN increase. Males could enjoy their life to the full and maintain adequate quality of life when they have an adequate sexual functioning.Various studies done in the recent past have shown that both partners get affected due to erectile dysfunction of the male partner and life quality of both is affected equally with the problem of one partner.

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It is not merely hypertension but patients who are obese, overweight or those who use alcohol or smoke tobacco and have sedentary life style are at more risk of developing ED.[9,10]

Astudy has been conducted on Pakistani population regarding problems of erectile function in a harsh environment,[2] but patients with hypertensive illness need attention in this regard. Our team took this challenge to ask the patients of hypertension for this problem and planned this study with the objective to determine the frequency of erectile dysfunction among the patients of hypertension and analyze the associated socio demographic factors.

METHODOLOGY

This study with a cross-sectional analytical design spanned over three months from Aug 2018 to Oct 2018. Out patient department of medical unit of PEMH Rawalpindi was the place for this study. Sample size was calculated by using the WHO sample size calculator and using population prevalence proportion of 42.4% and it was >180 participants.[11] Sample was gathered by using the non-probability consecutive sampling technique. Hypertension was diagnosed by medical specialist and all the secondary causes of HTN were ruled out.

Inclusion Criteria: All themale married patients between the age bracket of 25 and 50 years were made part of this study.

Exclusion Criteria: Patients who had secondary hypertension were excluded. Those having a history of sexual dysfunction of any kind due to some physical or psychological issue before diagnosis of HTN were also made part of exclusion criteria for this study.

Erectile dysfunction can be assessed by various standardized psychometric tools. International Index of Erectile Function (IIEF-5) is a commonly used instrument which we used in this study to record the presence and severity of ED. We applied validated version of this tool translated in urdu.[12,13] Scores of this tool have been interpreted as follows:

1-7: Severe ED

8-11: Moderate ED

12-16: Mild-moderate ED

17-21: Mild ED

22-25: No ED

We got the formal ethical approval letter for the study. Married male hypertensive patients with essential hypertension diagnosed for more than the year were approached to fill the required questionnaires for this study. IIEF-5 questionnaire and study proforma were co administered to the subjects so that they could fill each other together.[14,15] Study proforma had the basic social and demographic details especially those which could affect the erectile function and were correlated in this analysis. Confidentiality was maintained and names of the patients were kept secret and were also given option to even leave the name column blank. Detailed history and examination especially regarding the conditions which could directly or indirectly affect the sexual ability of individual was carried out. Psychiatric screening was also done to rule out patients with ED secondary to some psychiatric cause.

SPSS 23.0 was used for the statistical analysis. Descriptive statistics were used for the variables in the study. As finding the association was part of the objective of this study so person chi-square test was applied to serve the purpose. Variables which showed *p*-value of ≤0.05 were considered as having significant impact on erectile function in our target population.

RESULTS

Two hundred and five patients were enrolled to fill the study questionnaires and proforma. Ninety-five (46.3%) patients had no ED, 57 (27.8%) patients had mild, 24 (11.7%) patients had mild to moderate, 17 (8.3%) patients had moderate and12 (5.2%) patients had severe ED. Mean age of the study participants was 39.94 ± 4.14 years. Mean duration of hypertension among the patients in this study was 6.24 ± 2.78 years. Increasing age, tobacco smoking, poly-pharmacy and duration of illness had significant association with ED (*p*-value<0.05) while education was not found significantly associated in our study when chi-square was applied. Advancing age, poly-pharmacy, long duration of illness and tobacco smoking were strongly related to erectile dysfunction in hypertensive patients (Table).

DISCUSSION

Erectile dysfunction is a common finding which remains disclosed usually in the patients suffering from essential hypertension.Hypertensive patients with advancing age, prolong duration of illness, using multiple anti-hypertensive drugs and those who smoke tobacco are at increased risk of developing variable degree of ED. Chronic hypertension leads to end organ damage by causing endothelial damage, accelerated atherosclerosis, and various other mechanisms.[7]

Table: Characteristics of the hypertension patients and their IIEF score.

Socio Demographic Factors	No ED (22-25)	MildED (17-21)	Mild to Mod ED (12-16)	Moderat ED (8-11)	Sevee ED (1-7)	*p*-value
Total	n (%) 95 (46.3)	n (%) 5727.8	n % 24 11.7	n (%) 178.3	n (%) 12 5.8	
Age						
25-40	48 (50.5%)	21 (36.8%)	06 (25%)	02 (11.8%)	05 (41.7%)	0.043
>40	47 (49. 5%)	36 (63.2%)	18 (75%)	15 (88.2%)	17 (58.3%)	
Education						
10 or less	69 (72.6%)	39 (68.4%)	20 (83.3%)	14 (82.3%)	08 (66.6%)	0.544
>10	26 (27.4%)	18 (31.6%)	04 (16.7%)	03 (17.7%)	04 (33.7%)	
Duration of Illness						
<5 years	90 (94.7%)	40 (70.2%)	22 (91.7%)	16 (94.1%)	11 (91.6%)	0.001
>5 years	05 (5.3%)	17 (29.8%)	02 (8.3%)	01 (5.9%)	01 (8.4%)	
Tobacco Smoking						
Non Smoker	40 (42.1%)	18 (31.6%)	08 (33.3%)	05 (29.4%)	02 (16.7%)	0.018
Smoker	45 (57.9%)	39 (68.4%)	16 (66.7%)	12 (70.6%)	10 (83.3%)	
Poly-Pharmacy						
No	48 (50.5%)	22 (38.6%)	08 (33.3%)	02 (11.8%)	03 (25%)	0.013
Yes	47 (49.5%)	35 (61.4%0	16 (66.7%)	15 (88.2%)	09 (75%)	

Around half of our study participants had some degree of ED reported on the IIEF 5 which is not different from the results of other studies done in different parts of the world by Wang *et al*, and Chaudry *et al*, which showed that 30 to 45% of patients they studied had this problem of ED.[9-11]

Use of multiple anti-HTN drugs by physicians for achieving target blood pressure is common practice among hypertensive patients. Javaroni *et al*, studied the hemodynamic interferences caused by anti-HTN drugs and inferred that Beta Blockers, Thiazide diuretics and Spironolactone are associated with ED and decrease libido with a *p*-value of less than <0.05 for this intervention.[16] Anti-hypertensive drugs affect the sexual health in more than one ways was also concluded by Grimm *et al*, in their analysis in 1997. They mentioned the effect at macro and micro levels linked with mechanism of action of various anti-hypertensive drugs,[17] Sharp *et al*, deduced that anti-hypertensive drugs interfere with Phosphodiestrase pathway of vascular endothelial cells thus leading to ED overtime.[19,20] Our study reported similar findings and use of more than one drugs to manage the HTN emerged as an independent risk factor for erectile dysfunctions in patients of essential HTN.

Increasing age was a significant correlate with erectile dysfunction in our study. Similar association had been reported by Chaudry *et al*, and Khawaja *et al*, and *p*-value less than 0.05 was observed when age was linked with erectile dysfunction.[3,18] There is a gradual decline in sexual function with aging in healthy individuals as well. Age related vascular endothelial and male gonadal hormonal changes may be responsible for this association.

Smoking was a risk factor for erectile dysfunction among patients of essential hypertension in our study. These findings have been reported previously as well in the past by Choudhry *et al*, here odds ratio of more than 2 was observed for smoking relationship with erectile dysfunction.Therefore, this finding not new to our analysis.[3] Active ingredients of tobacco include nicotine and tar compounds which can cause direct endothelial damage and also lead to physiological changes which could affect sexual health of the male who has already been suffering from a chronic systemic illness.

LIMITATIONS OF STUDY

The design of the study was made in such a way to see the direct association of erectile problems and HTN but still few limitations were encountered which could lessen the generalizability of results. Psychiatric evaluation of each individual was not done to look for the mental health related causes of ED which have been more prevalent than physical causes. Moreover, we relied on the psychometric assessment instead of detailed clinical interview which could make the results biased.

CONCLUSION

Erectile dysfunction is a common finding which usually remains disclosed in the patients suffering from essential hypertension. Patients with advancing age and long duration of hypertensive illness seemed more prone to this kind of sexual problem compared to young patients with early disease. Tobacco smoking and use of more than one pharmacological agent for managing essential hypertensionalso emerged asadditional risk factors for development of ED among male hypertensive patients.

Conflict of Interest: None.

Author's Contributions

RRHS: Corresponding author, RAS: Design & analysis, GR: Data collection, AHM: Data collection.

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