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Research Article

### PREVALENCE AND CAUSES OF ERECTILE DYSFUNCTION AMONG PATIENTS ON REPEATED HEMODIALYSIS

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**Abstract:**

**Objective:** Patients on repeated hemodialysis can experience erectile dysfunction. In this study we aim to find prevalence of disease and its causes as well.

**Study design and duration:** It is a cross sectional study completed in six months duration from January 2020 to June 2020.

**Place of study:** Study was conducted at urology department of Bolan University of Medical and Health Sciences.

**Patients and methods:** Patients undergoing repeated hemodialysis in study hospital for at least six months duration were selected for study using consecutive sampling technique. Those with any sort of malignancy, age > 60 years, or previously having erectile dysfunction before the duration of dialysis were excluded from the study. Chi square test was applied. P-value less than 0.05 was considered significant.

**Results:** Patients in study group were having ages of 20-60 years with mean age of 34.52 ± 7.41 years. There were 77.9% cases having erectile dysfunction and 22.1% were not having erectile dysfunction. 20% cases were having mild, 15% were having moderate and 56.7% cases were having severe erectile dysfunction. Diabetes mellitus was a most common cause of end stage renal disease found in 28% cases. 59.7% study population was from rural areas and 40.3% from urban areas.

**Conclusion:** Erectile dysfunction is much frequent among patients on repeated maintenance hemodialysis. Old age patients on dialysis with diabetes mellitus have higher prevalence of erectile dysfunction.

**Key words:** Erectile dysfunction, hemodialysis, end stage renal disease, diabetes mellitus.

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**INTRODUCTION:**

Prevalence of erectile dysfunction is high among patients on maintenance hemodialysis. Majority of patients in our community do not discuss this issue to doctors and neither treat it as they feel it shame and stigma. So many patients remain undiagnosed. [1] Various studies report prevalence of ED as 41%-93%. [2,3] Erectile dysfunction among patients on hemodialysis is caused by multiple factors like psychological, cardiovascular, drugs related and endocrinological problems. [4] There is no sufficient data on this problem in our country so this study was conducted to determine relation of maintenance hemodialysis with erectile dysfunction as well as its prevalence among rural and urban population reporting to our study hospital. We used IIEF questionnaire to assess erectile dysfunction severity. According to a study there are 10-30 million people in United States having this problem. Hypertension, diabetes mellitus, heart disease and atherosclerosis are associated with erectile dysfunction and also with chronic renal failure. Chronic renal failure patients on repeated hemodialysis develop erectile dysfunction later on. [5]

**PATIENTS AND METHODS:**

It is a hospital based cross sectional study conducted at urology department of Bolan University of Medical and Health Sciences. Study was completed in duration of six months from January 2020 till June 2020. Patients on maintenance hemodialysis for more than six months due to end stage renal disease were selected

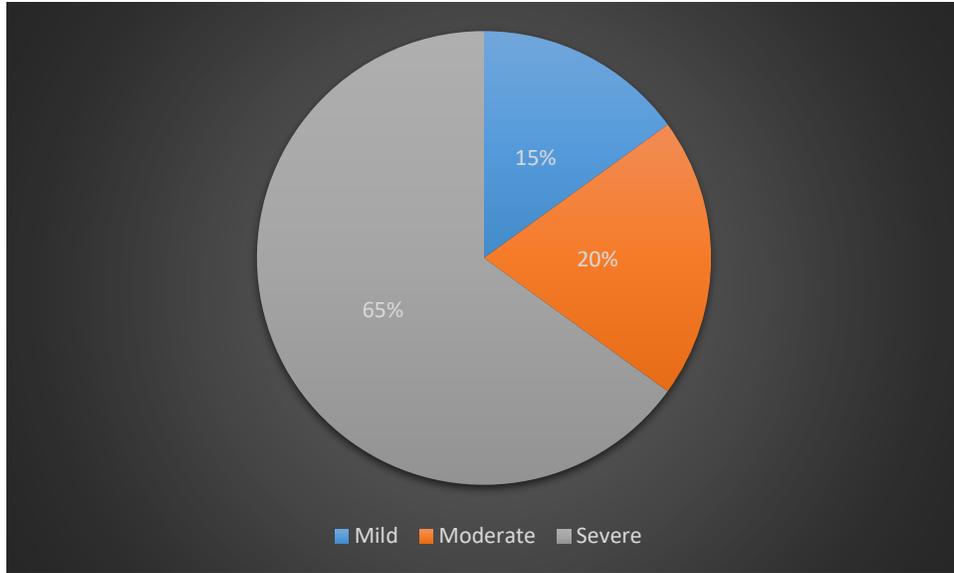
for study using consecutive sampling technique. Sample size was calculate using WHO sample size formula. 77 patients on hemodialysis who have had normal sex life previously, having normal psychological status at the time of study and giving consent were included in the study. A predesigned questionnaire proforma was used containing five questions, each containing specific score according to response of the patient. Its maximum score was 25. Those having score 21-25 were considered to have no erectile dysfunction, score of 16-20 indicated mild, 10-15 moderate and 5-10 severe erectile dysfunction. Another proforma used mentioning demographic data and risk factors of end stage renal disease such as presence of diabetes mellitus, hypertension, cardiovascular disease, renal stone, glomerular disease or any other cause. Data collected was analyzed using SPSS-20. Means and standard deviation determine for qualitative variables and frequency, percentages were calculated for quantitative variables. Those with any sort of malignancy, age>60 years, or previously having erectile dysfunction before the duration of dialysis were excluded from the study. Chi square test was applied. P-value less than 0.05 was considered significant.

**RESULTS:**

Total 77 cases were studied. Patients in study group were having ages of 20-60 years with mean age of  $34.52 \pm 7.41$  years. There were 20() between 20-30 years, 23() between 31-40 years, 19() between 41-50 and 15() between 51-60 years.

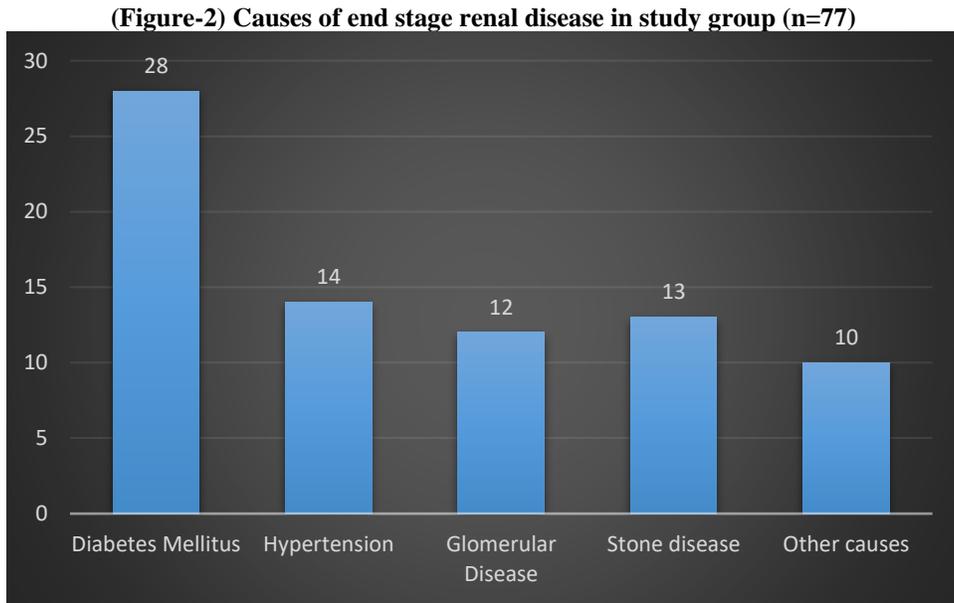
Age (years)	With erectile dysfunction	Without erectile dysfunction	Total	P-value
20-30	10 (13%)	5 (6.5%)	15 (19.5)	0.011
31-40	16 (20.8%)	3 (3.9%)	19 (24.7%)	0.033
41-50	16 (20.8%)	4 (5.2%)	20 (25.9%)	0.052
51-60	18 (23.4%)	5 (6.5%)	23 (29.9%)	0.043
Total	60 (77.9%)	17 (22.1)	77 (100%)	

Erectile dysfunction was assessed using IIEF scoring system according to which 9(15%) were having score 16-20 so labelled mild disease, 12(20%) cases were having moderate erectile dysfunction got 16-20 score and 39(65%) cases were having severe erectile dysfunction with score 5-10.



(Figure-1) Frequency of erectile dysfunction grades according to IIEF Score (n=60)

There were 77.9% cases with erectile dysfunction and 22.1% were not having erectile dysfunction. Diabetes mellitus was a most common cause of end stage renal disease found in 28% cases. 59.7% study population was from rural areas and 40.3% from urban areas. There were 4(5.3%) cases on maintenance hemodialysis for previous six months, 32(41.5%) cases for previous 7-12 months and 41(53.2%) cases were on dialysis for more than one year.



(Figure-2) Causes of end stage renal disease in study group (n=77)

(Table-2) Causes of end stage renal disease among patients in study group (n=77)

Causes of ESRD	With ED	Without ED	Total	P-value
Diabetes Mellitus	21(27.3%)	7 (9.1%)	28(36.4%)	0.032
Hypertension	11(14.3%)	3 (3.9%)	14 (18.2%)	0.011
Glomerular Disease	8 (10.4%)	4 (5.2%)	12 (15.6%)	0.021
Stone Disease	11 (14.3%)	2 (2.6%)	13 (16.9%)	0.045
Other causes	9 (11.7%)	1 (1.3%)	10 (13%)	0.024

**DISCUSSION:**

End stage renal disease is much prevalent in our community and such patients have to undergo repeated hemodialysis. Erectile dysfunction is one of the complications of hemodialysis. Other causes of erectile dysfunction include diabetes mellitus, hypertension, psychological factors, glomerular disease, renal stone etc. In our study prevalence of erectile dysfunction was 77.9% which is close to the result of a previous study conducted in Punjab Pakistan and showed prevalence of 86%. [1] Studies done in other countries also reported high prevalence of erectile dysfunction such as in Iran prevalence was 87%<sup>6</sup>, Turkey 80%<sup>7</sup>, Brazil 86.4% [8] and in Egypt 82.5% [9] prevalence was reported. In our study prevalence was high among diabetic patients (27.3%). Prevalence of erectile dysfunction was increasing with age as seen in our study it was 25.9% in age interval of 51-60 years and most of them were having severe form of ED. Age factor significantly influence prevalence of erectile dysfunction as shown by our results. Incidence of ED was higher among patients <50 years of age. Similar results were reported by Neto *et al* who reported 27.4% prevalence among patients <50 years of age [8]. This decreased prevalence of ED may be due to better healthcare facilities, dialysis facilities, medication used and comorbidities. In our study 28 cases were having diabetes mellitus and out of them 21 were suffering from erectile dysfunction. High incidence of disease among patients of diabetes has been reported by Miyata *et al*<sup>10</sup>. Other studies also concluded that diabetes and age factors are strongly associated with prevalence of ED. [11] According to a study prevalence of ED in general male population of Massachusetts has been reported as 9.6%. [11] According to report of National Health and Nutrition Survey done in America ED prevalence was 51% among males having diabetes mellitus. [12] A study conducted in Italy reported 52% prevalence in patients with type-2 diabetes mellitus. [13] In our study hypertension was also a risk factor of erectile dysfunction that may be due to use of various antihypertensive drugs and vasculogenic factors. [14] Kaufman *et al* described penile vasculopathy as a cause of ED [15] in which cavernous artery is occluded leading to ED in 78% of uremic patients. There is no relation of frequency and duration of hemodialysis on prevalence of ED. [15]

**CONCLUSION:**

Erectile dysfunction is a very common problem caused by repeated hemodialysis among patients with chronic renal failure. Other common causes include diabetes mellitus and hypertension. Advanced age is also a risk

factor associated with severe form of erectile dysfunction.

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