

Erectile Dysfunction and Risk Factors in Male Peruvian Hemodialysis Patients

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ABSTRACT

Introduction: Erectile dysfunction (ED) is a common condition in patients with renal disease, but little is known about the prevalence of ED in some specific groups of patients such as Peruvian hemodialysis (HD) patients. **Materials and Methods:** A cross-sectional study was conducted to determine the frequency of ED in HD patients ($n = 390$) in Lima, Peru. The prevalence and severity of ED were assessed using the International Index of Erectile Function with the validated Peruvian version. The dependence of ED on independent variables was evaluated by logistic regression. $P \leq 0.05$ was regarded as statistically significant. **Results:** This study collected 390 patients with end-stage renal disease on HD, 300 (76.6%) with ED. The average age was 66.15 years, 87.3% had ≥ 50 years, diabetes mellitus (30.7%), hypertension (26%), glomerulonephritis (16%), and no filiated 17.3% and 66% had been on HD for more than 5 years. Severe ED was 29.2%, moderate ED by 21.5%, mild/moderate 17.4%, and mild ED 8.7%. Patients ≥ 50 years were more likely to experience ED. Adequacy of dialysis, as measured by the Kt/V index, hemoglobin, and albumin were not associated with ED in our data. The antihypertensive drugs included angiotensin-converting enzyme inhibitors and angiotensin receptor blockers (78%), calcium channel blockers (59.3%), alpha-blockers (22.8%), and beta-blockers (5.5%) none were significantly associated with ED. In the multivariate analysis, the age was a strong predictor of ED for 50–59 years (OR = 2.04; 95% CI, 1.36–3.23) and for 60–69 years (OR = 3.48; 95% CI, 1.94–13.5), and diabetes was the only medical condition that remained significantly associated with ED (OR = 1.97; 95% CI, 1.18–4.6). **Conclusions:** ED frequency was high among our study patients. In Peruvian patients on HD, age and diabetes mellitus were significant risk factors for ED. Our results can give the basic data for future research in this field.

Key words: Diabetes mellitus, erectile dysfunction, hemodialysis, peruvian

INTRODUCTION

Men with end-stage renal disease (ESRD) on hemodialysis (HD) have been frequently associated with erectile dysfunction (ED), with an of between 20% and 87.7%.^[1]

There are many reasons to expect a high prevalence of ED in HD populations. A number of the illnesses such as atherosclerosis, heart disease, diabetes, and hypertension and some medications that are associated with ED also tend to be common among HD patient.^[2] Sexual dysfunction problems in HD patients are not evidence in many kidney centers. Epidemiological studies of sexuality in patients with ESRD

are small. Available studies suggest that the prevalence of sexual problems or dysfunctions in these patients is substantial and needs further research.^[3] In Peru, there has been no previous report about ED among patients on HD. The aim of this study is to determine the frequency of ED and its associated factors among Peruvian HD patients.

MATERIALS AND METHODS

This was a cross-sectional study conducted in Lima, Peru, from October 2017 to December 2017. All married men who were on maintenance HD for more than 3 months in associated dialysis centers in Lima were included in the study.

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The presence and severity of ED were assessed among 390 HD patients using the self-administered International Index of Erectile Function (IIEF).

Exclusion criteria: Single, divorced/separated men were excluded from the study. In addition, we excluded patients with depression and cognitive impairment. $Kt/v < 1.2$.

Demographic and clinical data were collected using anonymous questionnaires, we used the cross-culturally validated of IIEF, and in Peru is valid and reliable instrument (IIEF; the Peruvian version).^[4]

Analysis was done using SPSS program, version 24, for Windows. χ^2 was used to determine the association of ED with the cause of renal failure. Non-paired *t*-test was used to determine the association of ED with age groups, duration of renal replacement therapy, *kt/v*, hemoglobin, albumin, and other parameters. Logistic regression was used to examine and test associations between ED and medical conditions. $P \leq 0.05$ was regarded as statistically significant.

RESULTS

This study collected 390 patients with ESRD on HD, 300 (76.6%) with ED. The average age was 66.15 years with extremes of 18–85 years, only 12.7% had <50 years. The cause of ESRD was diabetes mellitus (30.7%), hypertension (26%), glomerulonephritis (16%), and no filiated 17.3% and 66% had been on HD for more than 5 years [Table 1].

Overall, some degree of ED was found in 76.9% of our sample. Severe ED was reported by 29.2% of subjects, moderate ED by 21.5%, mild/moderate 17.4%, and mild ED by 8.7%. Patients ≥ 50 years were more likely to experience ED [Table 2]; all >70 years had ED [Table 1]. The patients had been under dialysis therapy for a median of 4.8 years. ED was not correlated to duration of dialysis.

Adequacy of dialysis, as measured by the *Kt/V* index, hemoglobin, and albumin were not associated with ED in our data.

The most common antihypertensive drugs included angiotensin-converting enzyme (ACE) inhibitors and angiotensin receptor blockers (ARBs) (78%), calcium channel blockers (CCBs) (59.3%), alpha-blockers (22.8%), and beta-blockers (BB) (5.5%); and they use omeprazole (39.4%), folic acid and hydroxocobalamin (100%). However, none were significantly associated with ED.

In the multivariate analysis [Table 3], age was a strong predictor of ED for 50–59 years (OR = 2.04; 95% CI, 1.36–3.23) and for 60–69 years (OR = 3.48; 95% CI, 1.94–13.5). Diabetes was the only medical condition that remained

Table 1: Characteristics of patients with ED (*n*=300)

Variable	<i>n</i> (%)
Age group	
<50 years	38 (12.7)
50–59 years	80 (26.7)
60–69 years	82 (27.3)
>70 years	100 (33.3)
Duration on dialysis	
<1 year	32 (10.7)
1–<3 years	70 (23.3)
3–<5 years	102 (34.0)
≥ 5 years	96 (32.0)
Cause of ESRD	
Diabetes mellitus	92 (30.7)
Hypertension arterial	78 (26.0)
Glomerulonephritis	48 (16.0)
Others	30 (10.0)
No filiated	52 (17.3)
Hemoglobin	
≥ 11 g/dL	154 (51.3)
Albumin	
<3.8 g/dL	98 (32.7)

ED: Erectile dysfunction, ESRD: End-stage renal disease

Table 2: Distribution percentage of patients with ED in all subjects and by age

ED severity	All (%)	<50 years (%)	≥ 50 years (%)
No ED	23.1	64.2	7.7
ED	76.9	35.8	92.3
ED mild	8.7	5.7	9.9
ED mild/moderate	17.4	7.5	21.1
ED moderate	21.5	9.4	26.1
ED severe	29.2	13.2	35.2

ED: Erectile dysfunction

Table 3: Final multivariable logistic regression model

Variable	OR (95% CI) for variable predicting ED
Age group	
<50	1
50–59	2.04 (1.36–3.23)
60–69	3.48 (1.94–13.59)
>70	*
Diabetes	
Yes	1.97 (1.18–4.60)
No	1

*All patients over 70 years had ED, ED: Erectile dysfunction

significantly associated with ED (OR = 1.97; 95% CI, 1.18–4.6).

DISCUSSION

Male ED is an important issue worldwide occurring in 5–69% of men in community-based studies.^[5,6] It is more common in patients with chronic kidney disease and those on HD, occurring in more than 80% of patients.^[5]

The frequency of ED (76.9%) was high among HD patients compared to reports from Spain,^[7,8] The Netherlands,^[3] and Brazil,^[9] although it was comparable to other reports from the USA (82%),^[2] Sudan (83%),^[5] Saudi Arabia (82.7%),^[10] Iran (87.7%),^[11] Brazil (86.4%),^[12] and Egypt (82.5%).^[13] Older age was shown to be associated with ED in community-based studies^[6] and also among HD patients.^[11-13] Ali *et al.*^[13] demonstrated ED frequency in <50 years (80%) and ≥50 years (88%). Our study found 12.7% and 87.3%, respectively. This study demonstrates a significant negative impact of older age on the IIEF value, an observation similar to that reported in Iran.^[5]

This study confirms the high prevalence of ED among men with ESRD undergoing dialysis. Our data estimate of some degree of ED (76.9%) and severe ED was observed in all patients ≥70 years, consistent with previous estimates by Rosas *et al.*^[2]

This study could not demonstrate the association of ED, among our HD patients, with kt/V, hemoglobin, and albumin. Nassir^[10] reported similar observation among the patients just entering dialysis treatment. Patients with diabetes mellitus were shown to be associated significantly with ED in HD patients in the USA^[2] and Brazil.^[11]

The use of BB, ACE inhibitors/ARB, and CCB was reported by Mekki *et al.*^[5] in 16, 18, and 31%, respectively; in this study was found in more percentage, explained in part because the difference in all causes of ESRD.

This study found the age and diabetes mellitus as risk factors for ED, similar to reported by Rosas *et al.*,^[2] Mekki *et al.*,^[5] Nassir,^[10] and Neto *et al.*^[12]

CONCLUSION

ED frequency was high among our study patients. In Peruvian patients on HD, age and diabetes mellitus were significant risk factors for ED. Despite the high prevalence of ED reported in our studied patients, only a low proportion

of them sought treatment. Our results can give the basic data for future research in this field.

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