Erectile Dysfunction in Chronic Hemodialysis Patients in Dakar: a Cross-Sectional Study in 2012

Ka Elhadj Fary; Seck Sidy Mohamed; Cisse Mouhamadou Moustapha; Ahmeth Tall Ould Lemraboot; Maria Faye; Abdou Niang; Boucar Diouf

1Nephrology Department, Faculty of Medicine, University Cheikh Anta Diop, Dakar, Senegal
2Internal Medicine and Nephrology Department, Faculty of Health Sciences, University Gaston Berger, Saint-Louis, Senegal

*Corresponding author: Seck Sidy Mohamed, Internal Medicine and Nephrology Department, Faculty of Health Sciences, University Gaston Berger, Saint-Louis, Senegal. Tel/Fax: +221-339649974, E-mail: sidy-mohamed.seck@ugb.edu.sn

Received: July 11, 2014; Accepted: August 30, 2014

Background: Patients with chronic kidney disease (CKD) experience multiple complications including erectile dysfunction (ED). It involves more than 50% of patients on dialysis or transplant. In Africa, the true extent of ED in CKD is unknown although some studies have been done in this regard.

Objectives: This study aimed to determine the prevalence and identify risk factors of ED in patients on hemodialysis.

Patients and Methods: This cross-sectional multicenter study was conducted from January 2, 2012 through April 30, 2012 in four hemodialysis centers in Dakar. We included all patients on chronic hemodialysis who aged ≥ 18 years old and freely consented to participate in the study. Sociodemographic, clinical, and hemodialysis data were collected through a questionnaire. Erectile function was assessed by a short version of International Index of Erectile Function (IIEF-5).

Results: Among a target of 80 patients, 73 met the inclusion criteria and were included in this study. Mean dialysis vintage was 27.3 months (range, 1-156). Their mean age was 53.81 ± 12.52 years, with a higher proportion of age group of 50 to 69 years old. Fifty-six patients were married (37 monogamous and 19 polygamous) and six were singles. Overall prevalence of ED was 84.9% and it was severe in 14 patients (19.2%). Hypertension and diabetes were the most frequent etiologies and antihypertensive treatment was used in 95.5%. The main factors associated with ED were age > 50 years old and polygamy.

Conclusions: ED is a common problem among patients on hemodialysis in Dakar with a high prevalence. Aging and diabetes represent most common causes. More efforts are needed for its early detection, prevention, and multidisciplinary management.

Keywords: Hemodialysis; Erectile Dysfunction; Epidemiology

1. Background

Patients with chronic kidney disease (CKD) experience multiple complications including sexual dysfunction. Erectile dysfunction (ED) is defined as the inability to achieve or maintain an erection sufficient for a satisfactory sexual intercourse (1). The severity of ED is directly correlated to the severity of CKD (2). In Africa, the true extent of ED in patients on hemodialysis remains unclear because of the taboos that surround the disease (3, 4). A previous study in the hemodialysis unit in Dakar found a prevalence rate of 81.4% (5).

2. Objectives

This study aimed to determine the current prevalence of ED, identify risk factors, assess the psychosocial effects, and evaluate the quality of the management of ED.

3. Patients and Methods

We conducted a cross-sectional descriptive multicenter study in four hemodialysis centers in the Dakar region from January 2, 2012 through April 30, 2012. All patients on chronic hemodialysis who were older than 18 years and deliberately consented to respond to questionnaire items were included. Erectile function was assessed by the short version of International Index of Erectile Function (IIEF-5) in French language, which was already validated in patients on hemodialysis. The questionnaire consisted of five items and each item was scored from one (not sure) to five (very safe). Score < 26 points was consistent with ED.

In patients with ED, four grades of severity were defined as follows: mild (score, 17-21); light (score, 12-16); moderate (score, 8-11); and severe (score, 5-7). Collected sociodemographic data included age, sex, and marital status (single, monogamous, or polygamous). Data on dialysis parameters (dialysis vintage, type of dialysis, and number of hemodialysis hours per week), the psychosocial effects, and the different treat-
ments were collected. The collected data were entered into Sphinx Plus2 Lexica Edition. Statistical analyses were performed with SPSS 13.0 (SPSS Inc., Chicago, IL, USA). The Chi square test was used for comparison of proportions and a P value < 0.05 was considered as statistically significant.

4. Results

From an initial target of 80 patients, 73 were included in the study. Among them, 62 presented ED according to their IIEF scores (prevalence of 84.9%). Among those who had ED, 57 were on hemodialysis and five on peritoneal dialysis. The mean age was 53.81 ± 12.52 years and most of the patients who were affected by ED problems aged 50 years (see Figure 1). Fifty-six patients (90.2%) were married (37 monogamous and 19 polygamous) and six were singles. The mean dialysis vintage was 27.3 months (range, 1-156). Periodicity of dialysis treatment was variable: thrice a week (51%), twice a week (45.5%), and once a week (3.5%). The majority of patients presented with light to moderate ED while 14 (19.2%) had severe dysfunction (Figure 2). Hypertension and diabetes were the two leading causes of initial nephropathy, which were found respectively in 59.6% and 21% of cases (see Figure 3). The associated comorbidities were consecutively hypertension (34%), decompensated heart disease (21%), and chronic viral hepatitis with hepatitis virus B (6.4%) and C (3.2%). Almost all patients (95.5%) took antihypertensive drugs, which were mainly angiotensin-converting enzyme inhibitors (64.5%), calcium channel blockers (59.6%), diuretics (45.2%), and beta-blockers (27.4%). Only 5% of cases were taking erythropoietin. Other disorders such as sexual desire disorders (55%), abnormal ejaculation (54%), and disorders of orgasm or sexual satisfaction (44%) were highlighted too. A specialized consultation was held for 26% of the patients with ED. Only 35.5% of patients were receiving treatment to improve their sexual function through taking sildenafil (24.2%) or herbal medicine (11.3%). Psychological consequences of ED in patients were dominated as anxiety (45.5%), fear of failure (22.5%), and insomnia (16%). The majority of patients (61%) received good understanding and psychological support from their partners. However, other reactions such as ignorance (13%), anger (6.4%), and resignation (4.8%) were also reported. After bivariate analysis, only age > 50 years and polygamy were significantly correlated with the risk of developing ED. Other factors such as the causal nephropathy, comorbidities, duration on dialysis, and the dialysis technique had no statistically significant association with ED (P value > 0.05).

5. Discussion

ED is a common disease with the prevalence ranging from 20% to 45% in general population. The incidence is even higher in patients on chronic dialysis due to specific risk factors such as uremic toxins, anemia, mineral and bone disorders, and antihypertensive drugs adverse effects. In this study, 84.9% of patients presented ED. These results are similar to previous data reported by Seck et al. and Nassir et al. who found respectively prevai-
ience of 81.4% in Senegal (5) and 83% in Saudi Arabia (6).
Lower prevalence of ED has been reported in patients on
dialysis living in Spain (7), Brazil (8), and Netherlands
(9) (respectively 60%, 54.9%, and 69%). CIGOP in 1981
showed that more than 50% of male patients with CKD
showed erectile dysfunction (10). The mild and moderate
grades of ED, with a prevalence of respectively 28.8% and
27.4%, were the most represented severities in our
patients. Only 19.2% of patients had severe form of ED
which was in contrary to previous studies in Turkey
(63%) (11), Saudi Arabia (71%) (6), and USA (12). The mean
age was 52.8 years old, while Seck et al. had objectified
an average age of 57.7 years (5). Sixty-one percent (61.4%)
patients aged 50 years and older had a ED (41% moderate
and 20.4% against severe forms of mild and less light)
against only 23.6% in less than 50 years whose 20.5% had
mild and less mild and 3% moderate and severe forms.
Arslan et al. reported 86% of ED cases in patients over 50
years against 74.5% in patients aged less than 50 years
(13). Rosas reported 90% of ED patients in patients older
than 50 years and 63% in patients less than 50 years (12). Most
of our patients were married (89%) with 29.2% being polygamous
and 70.8% monogamous) and the rate of ED was
higher among married (76.7%) than unmarried (8.2%)
without any correlation between the ED and marital status.
This lack of association was noted in almost all se-
ries (14-16). In our study, there was a statistically signifi-
cant link between polygamy and ED. These results were
similar to those reported by Diao et al. who showed that
the severity of ED in the general population increased
with the number of wives (17). No significant association
between the duration on dialysis and DE was observed
in our patients (P = 0.07). Seck et al. found the same re-
sults (5). Kleinclauss et al. concluded that hemodialysis
vintage was a risk factor for ED through arteriopathy
that worsens over time (2, 18). Conversely, Messina et al.,
Neto, and Naya et al. demonstrated that hemodialysis
was not associated with ED (8, 14, 19). As in many stud-
ies (20-22), no association between ED and the mode of
dialysis was noted in our patients and this was due to
the small number of patients with PD (6.8%). In China,
Kwan et al. showed the negative effect of CAPD on the
sexual life marked by a significant decrease in the fre-
quency of sexual activity, libido, and sexual satisfaction
among couples (23) renal failure patients. Fear of pull-
ing PD catheters was one the main reason reported by
most of couples (23).
In our study, there was no correlation between the un-
derlying cause of CKD and ED, which was similar to the
study of Nassir et al. (6). However, Cerqueira et al. and Mi-
yata et al. found a significant association between ED and
diabetes with respective p-values of 0.05 and 0.04 (18, 24).
Thus, according to many writers, these pathologies are
involved in the development of ED (7, 20, 25). Chronic liver
disease related to hepatitis virus B or C and heart fail-
ure, which are described as potentiating factors of sexual
dysfunction in patients on dialysis (9, 19, 20), were objec-
tified in one-third of our patients with 95.5% of them pre-
senting ED. Several widely prescribed therapeutic classes,
including β-blockers and diuretics, have been implicated
in the onset of ED in patients on dialysis (16, 20, 21). How-
ever, the most widely used classes of antihypertensive
drugs in our study were angiotensin-converting enzyme
inhibitors, calcium channel blockers, diuretics, and beta-
blockers but no significant association between drug
intake and the development of DE was objectified. ESA,
used in 22% of our patients for the correction of chronic
anemia, had a positive effect on the quality of sexual and
erectile function. Other disorders such as sexual desire
disorders, abnormal ejaculation, abnormal orgasm, or
lack of sexual satisfaction were identified in 72% of cases.
Only 35% of patients were receiving treatment for ED.
Sildenafil (24.2%), as prescription or self-medication, and
traditional medicines (ginseng plants and others) (11.3%)
were the most used drugs; on contrary, Neto et al. (19)
showed that 90.4% of its population never had treatment
for ED while 90% wanted a treatment. Finally, origins of
ED appear as multifactorial, involving organic and psy-
chologic disorders (16, 20, 21). Our patients were exposed
to psychologic factors such as stress (24%), anxiety (21%),
panic (16%), insomnia (16%), and fear of failure (16%). In
the study by Fernandes et al. patients with ED had depression
that could be associated with decrease in libido as well as
self-esteem and a reluctance to seek pleasurable activi-
ties (26). According to other authors, ED might result in
agression, anger, shame, bitterness, isolation, anxiety,
depression (27). This study showed that ED is a common
problem among patients on hemodialysis in Dakar. It is a
public health problem because its prevalence is 80% after
the second year of hemodialysis and the mean age of pa-
tients is 50 years. It is frequently encountered in patients
with diabetes and hypertension. Its clinical presentation
is variable with ejaculatory dysfunction and decreased li-
bido being the dominant features. Treatment should pro-
vide medical and psychologic support. Nephrologist and
dialysis nurses should be more aware of the disorder for
its early detection, prevention, and correct management
that could improve patients’ quality of life.

Acknowledgements
Authors would like to thanks all paramedical staff of
Aristide Le Dantec Dialysis Unit for their technical assis-
tance and patients for their participation in this study.

Authors’ Contributions
Elhadj Fary Ka: design, data collection, statistical anal-
ysis, and writing the manuscript. Sidy M Seck: design,
statistical analysis, and writing the manuscript. M. M.
Cisse: study design, data collection, and drafting the
manuscript draft. A.OL. Tall: data collection and drafting
the manuscript. M. Faye: data collection and drafting the
manuscript. A. Niang: data collection and manuscript re-
view. B. Diouf: study design and manuscript review.
References


