Sexual Medicine
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ORIGINAL RESEARCH—ERECTILE DYSFUNCTION

Erectile Dysfunction Among HIV Patients Undergoing Highly Active Antiretroviral Therapy: Dyslipidemia as a Main Risk Factor

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DOI: 10.1002/sm2.25

ABSTRACT

Objective. To assess the prevalence and risk factors of erectile dysfunction (ED) in HIV patients from the HIV clinic of a tertiary referral center in Mexico City.
Design. Prevalence was obtained from cross-sectional studies, and the International Index of Erectile Function (IIEF), a standardized method, was used to assess ED.
Methods. A cross-sectional study was performed in the HIV clinic. Participants completed the IIEF to allow ED assessment. Information on demographics, clinical and HIV-related variables was retrieved from their medical records.
Results. One hundred and nine patients were included, with a mean age of 39.9 ± 8.8 years. ED was present in 65.1% of the individuals. Patients had been diagnosed with HIV for a mean of 92.7 ± 70.3 months and had undergone a mean 56.4 ± 45.5 months of HAART. The only variable associated with ED in the univariate analysis was dyslipidemia, and this association was also found in the multivariate analysis ($P = 0.01$).
Conclusions. ED is highly prevalent in HIV patients. Dyslipidemia should be considered as a risk factor for ED in HIV patients. **Romero-Velez G, Lisker-Cervantes A, Villeda-Sandoval CI, Sotomayor de Zavaleta M, Olvera-Posada D, Sierra-Madero JG, Arreguin-Camacho LO, and Castillejos-Molina RA. Erectile dysfunction among HIV patients undergoing highly active antiretroviral therapy: Dyslipidemia as a main risk factor. Sex Med 2014;2:24–30.**

Key Words. Erectile Dysfunction; HIV; HAART; Dyslipidemia; IIEF; AIDS

Introduction

Erectile dysfunction (ED) is defined as the inability to achieve or maintain an erection for sexual intercourse [1]. It affects approximately 10–20 million men in the USA, with a global prevalence of 16%, which increases with advancing age [2]. In Mexico, one study reported a 33.7% prevalence of ED in young men [3]. ED is a multifactorial disease and is associated with comorbidities that include vascular, metabolic, psychogenic, and neurologic diseases.

Human immunodeficiency virus (HIV) is an RNA retrovirus transmitted through sexual intercourse, through contaminated blood, or vertical route. It has become a pandemic infection, and it is estimated that over 34 million people are infected worldwide [4]. In Mexico, its prevalence has been

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estimated at 0.4% [5]. AIDS-related mortality has decreased since the introduction of highly active antiretroviral therapy (HAART). A longer survival rate has made chronic degenerative diseases more prevalent in HIV-infected patients.

ED among HIV patients is estimated to have a prevalence of 46% [6]. Several studies have investigated this relationship. HAART therapy, protease inhibitors, hypogonadism, an increase in life expectancy in HIV patients, type 2 diabetes (DM2), depression, dyslipidemia, and direct virus effect are possible explanations. However, there are contradictions between studies, which may indicate that the underlying cause of ED in this population is multifactorial.

Aim

The aim of our study was to assess the prevalence of ED in patients on HAART from the HIV clinic at a tertiary care center in Mexico. We also looked for demographic and clinical variables that could be related to ED in this population.

We hypothesized that ED would be more prevalent in men with HIV undergoing HAART. We expected that medical comorbidities would be significantly associated with the rate of ED in these men.

Methods

We conducted a cross-sectional study from January 2008 to December 2008, in which patients on HAART from the HIV clinic at our institution were invited to participate. The study was approved by the local ethics committee. Once informed consent was provided by participants, they completed the International Index of Erectile Function 15 (IIEF-15) questionnaire [7], in the validated Spanish version [8]. The erectile function domain was used to evaluate the patients, and those with a score of >22 were classified as individuals without ED. A score of ≤21 was considered ED, classified as mild (score of 21–17), moderate (16–8), or severe (≤7).

Participants' medical records were reviewed for demographic and clinical data. Demographic variables included age, educational level, sexual preference, tobacco use, and drug and alcohol consumption. HIV-related variables included months since HIV diagnosis, CD4 count nadir, actual CD4 count, months on HAART, history of protease inhibitor (PI) use, current PI use, and use of non-nucleoside reverse transcriptase inhibitors (NNRTIs), nucleoside reverse transcriptase inhibitors (NRTIs), and integrase inhibitors (IIs). Comorbidities recorded included DM2, dyslipidemia (triglycerides >200 mg/dL, total cholesterol >240 mg/dL or both), history of myocardial infarction, hypertension, depression, hepatitis B infection, and obesity. DM2, dyslipidemia, and hypertension were diagnosed based on the definitions of the American Diabetes Association [9], the Adult Treatment Panel III [10], and Joint National Committee 7 [11], respectively.

An independent-samples Student's *t*-test was performed to compare means between the groups; while nonparametric variables were compared using Kruskal–Wallis and Mann–Whitney tests. A multivariate regression analysis was performed using the most significant variables. All analyses were performed using Statistical Product and Service Solutions (SPSS) version 17.0 (IBM, Armonk, NY, USA). Statistical significance was considered to be $P < 0.05$.

Results

The final sample included 109 patients. The enrollment procedure is depicted in Figure 1. ED was found in 71 individuals (65.1%). Mild, moderate, and severe ED were found in 48 (67.6%), 9 (12.67%) and 14 (19.71%) patients, respectively.

The mean age was 39.9 ± 8.8 years; 70.6% were men who have sex with men (MSM). High school was the minimum educational level in 75.2% of the individuals. In patients with ED, 60.5% had a history of alcohol use, and 38.05% had a history of

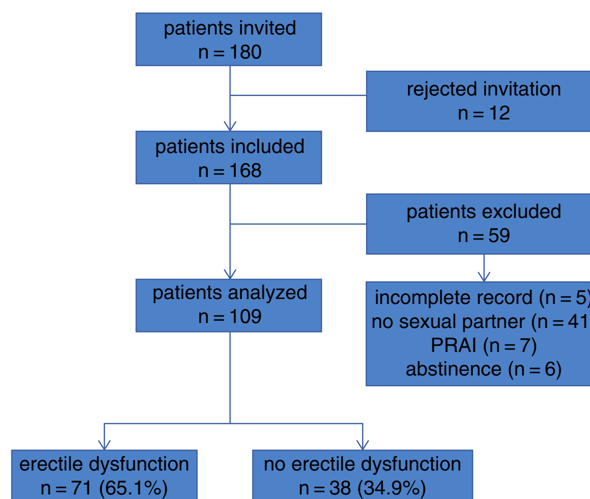

Figure 1 Enrollment process. PRAI = passive-role anal intercourse.

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