Sexologies (2016) xxx, xxx.e1—xxx.e4

Disponible en ligne sur ScienceDirect www.sciencedirect.com

Elsevier Masson France EM|consulte www.em-consulte.com

ORIGINAL ARTICLE

Evaluation of sexual dysfunction in women with type 2 diabetes

M. Ammar*, L. Trabelsi, A. Chaabene, N. Charfi, M. Abid

Department of endocrinology, Hedi Chaker Hospital, Magida Boulila Avenue, 3029 Sfax, Tunisia

KEYWORDS
Diabetes;
Woman;
Sexual dysfunction;
Female Sexual Function Index

Summary
Objective. — To evaluate the impact of diabetes on female sexuality, by comparing the sexual function between diabetic women and non-diabetic women and to determine the causative factors of sexual dysfunction (SD) among the diabetic women.
Methods. — Thirty premenopausal women with type 2 diabetes and 30 age-matched non-diabetes women were enrolled with similar backgrounds. Their sexual functions were evaluated with Female Sexual Function Index (FSFI).
Results. — Mean age of diabetic women, duration of diabetes, and BMI was 40.87 ± 4.8, 7.86 ± 4.59 years, and 30.11 ± 5.9, respectively. According to the SD criterion (FSFI ≤ 26), the percentage of SD in the diabetic group was significantly higher than that of the control group (50% vs. 16.7%, $P = 0.006$). Analyses of the data showed that longer duration of diabetes and microangiopathic complications were independent risk factors of SD, although there was no significant relationship between age, BMI, hypertension, coronary artery disease, glycemic control and frequency of SD.
Conclusion. — Findings from this study showed that there is more SD for diabetic women than for their non-diabetic counter parts and that longer duration of diabetes and microangiopathy were associated with a lower FSFI score.

Introduction

Diabetes mellitus is a common disease that may impair sexual activity. Among men, diabetes is a recognized risk factor for sexual dysfunction (SD), with prior research documenting an over three-fold increased risk of erectile dysfunction in diabetic versus non-diabetic men (Feldman et al., 1994).

Among women, the effect of diabetes on SD is poorly understood, with very little research examining whether rates of sexual activity or SD differ in diabetic versus non-diabetic women or identifying risk factors to SD for diabetic women (Rutherford and Collier, 2005).

Diabetes has the potential to affect sexual function in women through a variety of mechanisms, including vascular changes in the urogenital tissues affecting genital lubrication and neuropathy-mediated alterations in genital arousal response. Women's interest in, satisfaction with, and ability to participate in sexual activity may be influenced globally

* Corresponding author.
E-mail address: ammar_mouna@hotmail.fr (M. Ammar).

http://dx.doi.org/10.1016/j.sexol.2016.09.004
1158-1360/

Please cite this article in press as: Ammar M, et al. Evaluation of sexual dysfunction in women with type 2 diabetes. Sexologies (2016), http://dx.doi.org/10.1016/j.sexol.2016.09.004

by the effect of diabetes on their overall health, physical and mental functioning, and interpersonal relationships (Lindau et al., 2010).

In this study, we aimed to evaluate the prevalence of SD for diabetic women in addition to discover the causative factors contributing to SD among women.

Materials and methods

Participants and data collection

The present study, conducted on 30 women with type 2 diabetes selected by simple sampling method among the patients consultants in endocrinology and diabetology of Intermediate Center in Sfax Tunisia during 2013–2014. Patients were eligible if they were aged 20 years or older and being non-menopausal married women. The control group included 30 age- and background-matched non-diabetic women.

Measures

Sexual dysfunctions were measured in women using a standard questionnaire. The Female Sexual Function Index (FSFI) is a known instrument that assesses sexual function for women with six domains: desire, arousal, lubrication, orgasm, satisfaction and pain during sexual intercourse (Rosen et al., 2000). For women, the minimum and maximum scores are respectively 2 and 36. Women with a score under 26 were classified as presenting SD (Bargiota et al., 2011; Santos et al., 2012). This cut-off point was the same figure validated by other researchers.

Demographic data including age, BMI, type and duration of diabetes and glycemic control were recorded. The presence of hypertension, dyslipidemia, nephropathy, retinopathy, autonomic and peripheral neuropathy, and coronary artery disease was documented depending on the women's history, physical examination, and medical records, and investigations were undertaken for each diabetes complication.

Statistical analysis

The data were entered in Statistical Program for Social Sciences (SPSS 15.0) software. Univariate analysis for paired quantitative and independent data was performed using paired *t*-test and independent *t*-test, respectively. In all statistical tests, $P < 0.05$ was considered being significant.

Ethical considerations

The study was approved by local ethical committees, and all participants signed an informed consent prior to participation.

Results

Mean subject age did not differ significantly between the 2 groups, 40.87 ± 4.81 years in the diabetic group versus 39.27 ± 4.56 years in controls ($P = 0.19$).

Table 1 Sociodemographic characteristics of diabetic and non-diabetic women.

	Diabetic group $n = 30$	Non-diabetic group $n = 30$	*P*
Age (years)	40.87	39.27	0.19
Origin			
Urban	80%	76.6%	0.87
Rural	20%	23.4%	0.56
Educational level			
Illiterate	17.2%	3.4%	0.62
Primary education	44.8%	37.9%	0.48
Secondary education	34.5%	51.7%	0.77
Higher education	3.4%	6.9%	0.39
Employment			
Employed	43.3%	23.3%	0.26
Unemployed	56.7%	76.7%	0.54
Socioeconomic status (SES)			
Low SES	26.7%	16.7%	0.11
Middle SES	73.3%	83.3%	0.34

Baseline sociodemographic characteristics of the study subject are as shown in Table 1.

The mean BMI of diabetics and controls was 30.11 ± 5.9 and 28.31 ± 3.83, respectively ($P = 0.21$).

The minimum and maximum duration of diabetes was 1 and 22 years, respectively with the mean duration of 7.86 ± 4.59 years.

Majority of patients were receiving oral anti-diabetics only (53.3%) whereas 43.3% were receiving insulin therapy.

The mean HbA_{1c} level for diabetic women was $8.18 \pm 1.72\%$ (5.9–11.9%). Only 30% of patients had a HbA_{1c} level less than 7.0%.

Of the studied patients, 26.7% had microangiopathic complications, the most common was retinopathy (26.7%), followed by peripheral neuropathy (6.7%), and nephropathy (3.3%).

The rate of heart disease among all diabetic women was 13.4%, and stroke was 6.4%.

The mean FSFI score for diabetic and non-diabetic group was 23.24 ± 7.4 and 29.39 ± 4.04, respectively; the difference was statistically significant ($P < 0.001$).

According to FSFI cut-off point, the prevalence of SD was 50% in diabetic group and 16.7% in non-diabetic group ($P = 0.006$).

The FSFI domain scores of two groups are shown in Table 2. For diabetic women, scores of all domains, except pain were found to be significantly lower than the control subjects.

All domains of sexual function were affected for diabetic women with SD (SD+) in comparison with diabetic women without SD (SD–) with statistically significant difference ($P < 0.01$) (Table 3).

The findings of this study indicate that SD was seen more among the women who had longer duration of diabetes and microangiopathic complications (Table 4).

Please cite this article in press as: Ammar M, et al. Evaluation of sexual dysfunction in women with type 2 diabetes. Sexologies (2016), http://dx.doi.org/10.1016/j.sexol.2016.09.004