
Sexual dysfunction is correlated with tenderness in female fibromyalgia patients

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Received on October 13, 2010; accepted in revised form on March 10, 2011.

Clin Exp Rheumatol 2011; 29 (Suppl. 69): S44-S48.

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Key words: fibromyalgia, sexual dysfunction

ABSTRACT

Objective. The purpose of the current study was to evaluate sexual dysfunction among female fibromyalgia syndrome (FMS) patients.

Methods. Fifty female subjects were recruited and were asked to complete a questionnaire regarding sexual functioning.

The control group included fifty-five healthy age-matched volunteers.

The participants underwent a physical examination and tender point assessment was performed using manual palpation. All participants filled out the Arizona Sexual Experience Scale, which evaluates five areas of sexual functioning: sexual drive, sexual arousal, vaginal wetting, orgasm and sexual satisfaction.

Results. FMS patients had significantly lower scores on all five aspects of sexual function assessed. A positive correlation was observed between the sexual drive score, signifying a decrease in sexual drive, and the number of tender points documented on examination. Similarly, a positive correlation was observed between the sexual satisfaction scale (indicating decreasing levels of sexual satisfaction) and the number of tender points documented.

A positive correlation was demonstrated between the sexual arousal and orgasmatic scales and between the tender point counts, indicating a decrease in sexual arousal and in orgasmatic function in correlation with an increasing number of tender points.

Conclusions. The results of the current study indicate a multi-factorial sexual dysfunction among female FMS patients. All stages of sexual functioning, evaluated were significantly disturbed in comparison with the healthy controls. Physicians treating FMS patients should be aware of, and actively inquire about, sexual dysfunction as part of a multi-disciplinary evaluation of such patients.

Background

Fibromyalgia syndrome (FMS) is a condition clinically characterised by the existence of chronic, widespread pain, involving the musculoskeletal system (1, 2). The FMS concept is accepted as describing a condition in which central nervous system sensitisation is responsible for increasing the “volume” of pain, thus causing phenomena such as allodynia and hyperalgesia (3). While pain and tenderness are the central features defining FMS according to the 1990 ACR classification criteria (4), more recent analysis of the syndrome has pointed increasing attention to additional symptoms such as fatigue, disturbed sleep, cognitive impairment and additional somatic symptoms. This change in focus has recently been epitomised in the new suggested diagnostic criteria published for FMS (5). Thus, it is currently apparent, that the morbidity of FMS is by no means limited to the extent of pain and tenderness present and a more holistic approach must be taken towards the entire broad spectrum of symptoms with which FMS patients must cope.

Sexual function is a major component of well-being in general and is adversely affected by many disease states. In FMS, sexual function may be adversely affected by a variety of factors including contact-avoidant behaviour due to tenderness, depression, fatigue and the effect of medications.

The purpose of the current study was to evaluate sexual dysfunction among fibromyalgia patients.

Methods

The study protocol was approved by the Helsinki committee of the Soroka Medical Center and all participants gave written informed consent. FMS patient were recruited from the rheumatology clinic of the Soroka Medical Center. Exclusion criteria included conditions deemed to preclude informed consent,

Competing interests: none declared.

such as mental retardation, substance abuse and organic brain syndromes. Fifty-five age-matched healthy female volunteers were recruited as controls. All patients underwent manual palpation and physical examination in order to verify they fulfilled ACR criteria for classification of FMS. Demographic data regarding age, education, marital status and past medical history were collected.

Instruments

After an introductory interview, in which the nature of the study was explained and consent was obtained, all participants were asked to complete the Arizona Sexual Experience Scale (6), which evaluates five areas of sexual functioning: sexual drive, sexual arousal, vaginal wetting, orgasm and sexual satisfaction. A previously validated Hebrew version of the Arizona scale was utilised (7).

Statistical analysis

Demographic parameters were compared using the Chi-squared method. Sexual function parameters were compared using analysis of variance (ANOVA) for each parameter. Linear regression coefficients were calculated to describe the association between sexual function parameters and variables of age and pain intensity.

Results

The demographic data of study participants is presented in Table I.

As evident from the data presented in Table I, the FMS patients and controls were matched regarding age and marital condition. There were however significant differences between healthy controls and FMS patients regarding the level of education, the rate of employment and the percentage of immigrants to Israel.

Table II presents the results obtained from the Arizona sexual experience scale, comparing sexual function among FMS patients and healthy controls.

As is evident from the data presented in this table, all five aspects of sexual function show significantly lower scores among FMS patients, compared with healthy controls.

Table I. Demographic details of study sample.

	FMS patients 50.4 ± 8.8 (24–66)	Healthy controls 48.0 7.6 (25–65)	Statistics NS
Age, years (range)			
Country of birth, n. (%)			Pearson $\chi^2=51.1$, df=6, $p<0.0001$
Israel	25 (43.9%)	17 (27.8%)	
Europe	7 (12.3%)	40 (65.6%)	
America	4 (7.0%)	1 (1.6%)	
Asia	5 (8.8%)	2 (3.4%)	
Africa	16 (28.0%)	1 (1.6%)	
New immigrants to Israel	52.6%	77.0%	$\chi^2=7.75$, $p<0.006$
Number of years in Israel	22.3 ± 10.3	19.2 ± 2.9	$p=0.03$
Marital status, n. (%)			
Married	41 (71.9%)	44 (72.1%)	$p=1.0$
Single	3 (5.2%)	4 (6.55%)	
Widow	8 (14.0%)	9 (14.8%)	
Divorced	5 (8.8%)	4 (6.55%)	
Years of education – range	11.7 ± 3.05 (2–23)	16.1 ± 4.1 (11–28)	F(1,116) = 43.1, $p<0.0001$
Employed	33.3 %	98.4%	$\chi^2=56.3$, $p<0.0001$

Table II. Sexual function parameters among female fibromyalgia patients and healthy controls.

	FM patients n=50 Mean (SD)	Healthy controls n=55 Mean (SD)	ANOVA
Arizona Sexual Experience Scale			
Sexual drive	4.8 (1.1)	3.2 (1.0)	F(1, 13)=52.9, $p<0.0001$
Sexual arousal	4.6 (1.2)	2.8 (0.8)	F(1, 13)=79.0, $p<0.0001$
vaginal wetting	4.2 (1.0)	2.9 (0.7)	F(1, 13)=59.3, $p<0.0001$
Orgasm	4.4 (1.3)	2.8 (1.0)	F(1, 13)=47.1, $p<0.0001$
Sexual satisfaction	4.1 (1.5)	2.5 (1.0)	F(1, 13)=41.0, $p<0.0001$
Total score (Sum)	22.1 (5.4)	14.2 (4.0)	F(1, 13)=68.9, $p<0.0001$

Figure 1 presents the correlation between the results of the sexual drive scale and the number of tender points (Fig 1a) and between the sexual satisfaction scale and number of tender points.

As demonstrated in the figures, a positive correlation was observed between the score on the sexual drive score, signifying a decrease in sexual drive, and the number of tender points documented on examination. Similarly, a positive correlation was observed between the results of the sexual satisfaction scale (indicating decreasing levels of sexual satisfaction) and the number of tender points documented.

Figure 2 demonstrates the correlations between scales of sexual arousal (Fig. 2a) and the tender point count, as well as the correlation between the orgasmic scale and the tender point count (Fig 2b).

Similar to the results above, a positive correlation is demonstrated between

both scales and between the tender point counts, indicating a decrease in sexual arousal and in orgasmic function in correlation with an increasing number of tender points.

Discussion

The results of the current study reveal a significant impairment in all aspects of sexual functioning among female FMS patients, when compared with healthy controls. In addition, a significant correlation was demonstrated between all aspects of sexual function and between the tender point counts, which reflects the level of tenderness.

Our results are in agreement with recent studies which have studies various aspects of sexual function among FMS patients (8, 9). Orellana *et al.* described a significantly increased rate of sexual dysfunction among patients suffering from either FMS or rheumatoid arthritis, when compared with healthy controls (10). In their study, sexual

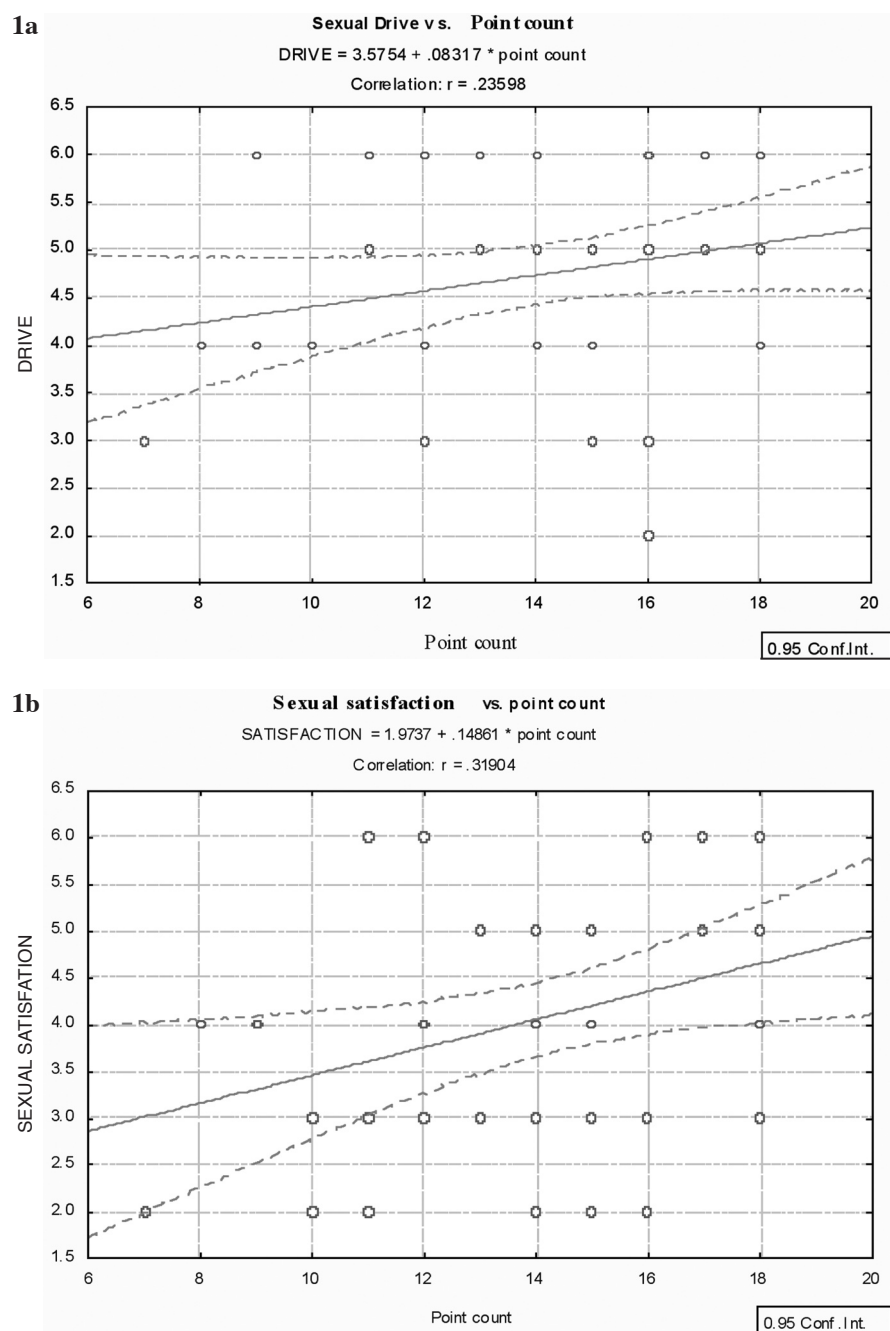


Fig. 1. Linear correlation between sexual drive and tender point count among FMS patients (Fig. 1a) and between sexual satisfaction and tender point count (Fig. 1b).

dysfunction was particularly associated with the level of depression. Tikiz *et al.* also found significantly increased rates of sexual dysfunction among FMS patients when compared with healthy controls (11) but in their study major depression had no significant increased negative effect on sexual function. Aydin *et al.* also found an association between sexual dysfunction and depression among female FMS patients (12).

In another study conducted on this subject, women suffering from FMS did not differ from healthy women with respect to functioning in the excitement and orgasm phases, but reported more problems with sexual desire and satisfaction, more pain before, during or after having sex (13). This finding is in contradiction with our results which document a more pervasive impairment of all aspects of sexual function. Sexual dysfunction is not limited to

the FMS spectrum but is an important symptom to be sought among patients suffering from many additional rheumatic disorders (14-17) as well as in other physical illnesses (18).

FMS is well-known to overlap with a number of "urological" disorders of unknown origin such as vulvodynia and interstitial cystitis (19-21). These painful disorders, which together with FMS are considered part of the spectrum of central nervous system sensitisation (22), may have a direct negative impact on sexual function in female FMS patients. Multiple additional factor may add a negative impact; thus, co morbid depression (23), anti-depressant medications (24) as well as fatigue and tenderness may all act in synergy to reduce the capacity of FMS patients to function sexually.

In the current study, muscular tenderness, reflected by the tender point count, was significantly (negatively) correlated with the various parameters of sexual function studied. While tender points have often come under criticism in the evaluation of FMS (25) particularly with regard to their close association with levels of distress (26), in our findings the tender point count was nonetheless useful. It is possible however that other factors influencing the tender point count beside actual tenderness, such as anxiety and distress, may also have a negative effect on sexual function and may thus contribute to the correlations we observed. We have chosen to focus our research on tenderness, as a proxy to central sensitisation, rather than on other parameters which reflect more complex functions such as affective measurements (depression, anxiety, etc.). Thus, notwithstanding the recognised limitations of tender points, we would propose that our results are more accurately focused on the relationship between sexual dysfunction and central sensitisation, in FMS patients.

Some obvious limitations of our results concern the characteristics of the control group. While FMS patients and controls were well matched regarding age and marital condition, there were differences in the rate of employment, level of education and in the percent-

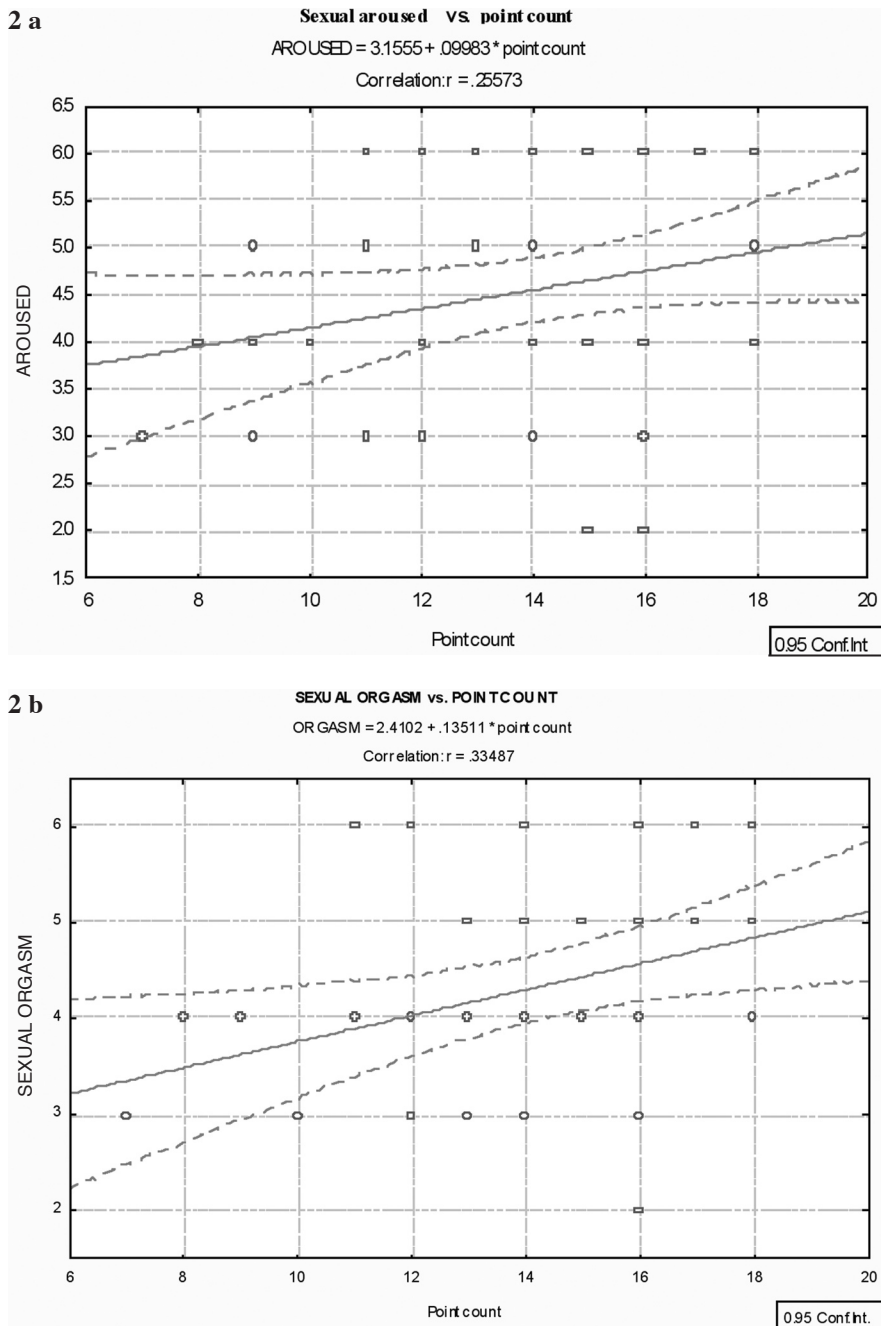


Fig. 2. Linear correlation between sexual arousal and tender point count (Fig. 2a) and between orgasmic function and tender point count (Fig. 2b).

age of immigrants to Israel. These confounding factors may have an effect on various parameters of sexual function. Nonetheless, the statistical robustness of the differences between the groups on all levels of sexual function, lead us to believe the results are significant despite these confounders, although optimally future research should be done attempting to isolate the effect of such factors.

In conclusion, in the current study, we

have demonstrated significant impairment of sexual function, involving a wide range of parameters, among female patients suffering from FMS. As sexual function is an important factor determining quality of life, health-care providers involved in the management of FMS patients should be alert to the frequent occurrence of such disorders among FMS patients and should actively evaluate for their presence in order to offer patients adequate treatment.

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