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Sexual dysfunction in patients with systemic sclerosis

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Background/aim: The aim of the study was to investigate the effect of systemic sclerosis (SSc) on quality of life and sexual function in female patients.

Materials and methods: The study included 30 sexually active female patients with SSc and 30 healthy control subjects. For all participants in both the patient and control groups, the female sexual index and SF-36 forms were completed and a detailed medical and sexual history was taken.

Results: The mean age was 45.03 ± 9.22 years in the SSc group and 44.6 ± 11.52 years in the control group (P = 0.87). The SF-36 scores in the patient group were significantly lower than those in the control group. Sexual dysfunction was found in 26/30 (86.6%) of the SSc patients and in 6/30 (20%) of the control group (P = 0.0001). Significant differences were determined between the groups with respect to sexual desire, arousal, lubrication, orgasm, sexual satisfaction, and pain. There was no significant relationship between the subgroups of SSc patients, duration of disease, lung involvement, and FSFI scores.

Conclusion: Sexual dysfunction and lower health quality are common problems in female patients with systemic sclerosis.

Key words: Systemic sclerosis, sexual dysfunction, lower health quality

1. Introduction

SSc is a chronic multisystemic disease, characterized by thickened skin due to a clinical accumulation of connective tissue and involvement of organs such as the lungs, gastrointestinal system (GIS), heart, and kidneys (1). The prevalence and incidence show various differences according to ethnic and geographical factors. The disease is most frequently seen at ages between 30 and 50 years and the female/male ratio is 8/1 (1).

The pathogenesis of the disease comprises a triad of vasculopathy, activation of the immune system, and fibrosis. Although the precise etiology is still unknown, genetic susceptibility, environmental factors, microchimerism, and infections may be triggering factors (2–4).

The complications of SSc have adverse effects on quality of life and sexual function. Erectile dysfunction (ED) prevalence in men with SSc has been reported to be approximately 12%–81% (5,6). Although the exact causes of ED in SSc have not been well identified, vascular, fibrotic, and neuropathic/disautonomic factors are currently thought to be responsible (7–9). Recent studies have shown an association between ED and penile blood pressure and penile temperature (10,11). Physical changes due to SSc can also have an unfavorable impact on sexual function in women. It has been reported that vaginal stenosis, joint contractures, muscle weakness, changes in breast skin, and joint pain lead to diminished libido, decreased vaginal lubrication, and satisfaction (12,13). Decreased vaginal lubrication occurs due to changes in the vaginal mucosa. These symptoms restrict sexual activity in SSc patients and their partners, as SSc patients fear and therefore avoid the inevitable pain during coitus. In addition, changes in the skin in these patients, especially in the face, can affect self-confidence in women, which can also lead to sexual dysfunction (12,13).

The exercise capacity of SSc patients is significantly reduced. Therefore, symptoms such as dyspnea, fatigue, and cough in these patients can also affect sexual activity in both sexes (13,14).

In the present study, we aimed to investigate the impact of SSc on the quality of life and sexual function in women with SSc.

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2. Materials and methods

The study included 30 patients referred to Ankara University, Rheumatology Division Outpatients clinic who had been diagnosed with SSc clinically and from laboratory tests. The same number of volunteers were taken as a control group. All of the patients and the control group were asked whether they were married or not and sexually active or not before being included in the study. Informed consent was obtained from all participants. Approval for the study was granted by the Local Institutional Ethics Committee.

The SF-36 quality of life (QoL) questionnaire was administered to all study participants; to determine sexual dysfunction, the female sexual function index (FSFI) was applied to both groups. The Turkish version of the FSFI, whose validity and reliability in Turkish society have been confirmed, was used (15). All the questionnaires were evaluated by the same investigator.

A total score under <22.7 on the FSFI was evaluated as sexual dysfunction. A score <3.6 on the sexual desire test was evaluated as diminished libido, of <3.9 on the arousal test as arousal dysfunction, of <3.6 on the lubrication test as lubrication dysfunction, of <3.6 on the orgasm test as orgasmic dysfunction, of <3.6 in the sexual satisfaction test as sexual dissatisfaction, and of <4 on the sexual pain dysfunction test as sexual pain dysfunction.

Statistical analyses of the data of the patients and control cases were performed with SPSS 15.0. Normally distributed variables were stated as mean ± standard deviation (SD) values, nonnormally distributed variables as median (minimum–maximum) values, and nominal variables as number and percentage (%). The t-test was applied in the comparisons of mean differences and the Mann–Whitney test in the analysis of median differences, as there were only 2 groups. Relationships between constant variables were evaluated with the Spearman correlation test for nonnormally distributed variables and the Pearson correlation test for normally distributed variables. A value of $P < 0.05$ was accepted as statistically significant.

3. Results

The mean age was 45.03 ± 9.22 years (range: 30–62 years) in the patient group and 44.6 ± 11.52 years (range: 28–64 years) in the control group. No significant difference was determined between the groups in terms of age ($P = 0.87$).

In the SSc patient group, 16 patients (53.3%) were diagnosed with diffuse cutaneous systemic sclerosis and 14 patients (46.7%) with limited cutaneous systemic sclerosis. Lung involvement was determined in 15 patients (50%). ANA was positive in all 30 patients, Scl-70 was positive in 14 (46.7%), anticentromere antibody was positive in 10 (33.3%) patients, SS-A was positive in 5 (16.6%), and U1-RNP antibody was positive in 4 (13.3%). Table 1 presents the data on the clinical and laboratory findings of the SSc patients.

When the data of the submitted questionnaires were compared, a significant difference was determined between the 2 groups, especially in the subgroup evaluation of physical function, the role of physical and emotional restriction, pain, energy, social function, mental health, and general health state. The findings of SF-36 QoL are shown in Table 2.

When the total scores of the FSFI were established, sexual dysfunction was found in 26/30 (86.6%) of the SSc patients and in 6/30 (20%) of the control group. There was a statistically significant difference between the groups ($P < 0.0001$). In the FSFI subgroup evaluation, sexual desire dysfunction was determined in 21 (70%) patients, arousal dysfunction in 24 (80%), lubrication dysfunction in 19 (63.3%), orgasmic dysfunction in 18 (60%), sexual dissatisfaction in 4 (13.3%), and sexual pain dysfunction in 7 (23.3%) patients. Significant differences were determined between the groups with respect to sexual desire, arousal, lubrication, orgasm, sexual satisfaction, and pain (Table 3).

When the SF-36 data and FSFI data were compared, a strong positive correlation in terms of sexual function, physical component scale, and physical scales (role of physical restriction, pain, and general health) was detected.

There was no significant relationship between the subgroups of SSc patients, duration of disease, or lung involvement and FSFI scores. Significant and strong negative correlations were determined between age and FSFI scores (Tables 4 and 5).

4. Discussion

The prevalence of SSc in females has been reported to be 8 times greater than that in males (16). Although the high frequency of this disease in females is well known, there have been few studies investigating female sexual dysfunction. Therefore, the present study can be considered of value; it is the first study in Turkey to have investigated this issue in

Table 1. Clinical and laboratory findings in SSc patients

The features of the SSc patient group	Patient N = 30 (100%)
Diffuse cutaneous SSc	16 (53.3%)
Limited cutaneous SSc	14 (46.7%)
Lung involvement	15 (50%)
Positive ANA	30 (100%)
Positive anti-Scl-70	14 (46.7%)
Positive anticentromere	10 (33.3%)
Positive SS-A	5 (16.6%)
Positive U1-RNP	4 (13.3%)

Table 2. Evaluation of SF-36 data in the SSc and control groups.

SF-36	SSc groupMean ± SD	Control group Mean ± SD	P
Physical function	63 ± 23.54	79.67 ± 12.8	0.001
The role of physical restriction	37.5 ± 40.86	85.8 ± 16	0.0001
The role of emotional restriction	38.93 ± 37.3	75.56 ± 23.9	0.004
Pain	46.17 ± 29.2	68.73 ± 17.12	0.001
Energy	35.83 ± 16.2	51.33 ± 18.2	0.001
Social function	50.8 ± 26.9	65 ± 26.13	0.03
Mental health	60.27 ± 14.1	76.8 ± 13.55	0.0001
General health	41.43 ± 15.77	69.67 ± 14.68	0.0001
Physical component scale	37.73 ± 10.85	48.37 ± 6.18	0.0001
Mental component scale	38.9 ± 6.4	47.2 ± 8.71	0.0001

Table 3. Comparison of the data of the SSc and control groups in the FSFI and subgroup analyses.

Sexual function index	SSc group mean ± SD	Control group mean ± SD	P
Sexual desire	2.46 ± 1.16	3.56 ± 1.37	0.002
Arousal	2.46 ± 1.59	4.05 ± 1.56	0.0001
Lubrication	2.56 ± 1.52	4.38 ± 1.54	0.0001
Orgasm	2.56 ± 1.56	4.41 ± 1.5	0.0001
Sexual satisfaction	2.5 ± 1.4	4.56 ± 1.31	0.0001
Sexual pain	2.63 ± 1.56	4.7 ± 1.61	0.0001
Total score	15.27 ± 7.2	25.63 ± 7.86	0.0001

Table 4. The evaluation of the impact of SSc subgroups on FSFI scores.

Sexual dysfunction index	dcSSc (mean ± SD) n = 16	lcSSc (mean ± SD) n = 14	P
Sexual desire	2.43 ± 1.2	2.5 ± 1.16	0.88
Arousal	2.37 ± 1.78	2.57 ± 1.39	0.82
Lubrication	2.25 ± 1.61	2.92 ± 1.38	0.29
Orgasm	2.31 ± 1.74	2.85 ± 1.35	0.52
Sexual satisfaction	2.12 ± 1.31	2.92 ± 1.43	0.15
Sexual pain	2.81 ± 1.83	2.42 ± 1.22	0.33
Total score	14.31 ± 7.96	16.36 ± 6.31	0.6

this patient group. When the total scores of the FSFI were calculated, sexual dysfunction was found in 26/30 (86.6%) of the SSc patients and in 6/30 (20%) of the control group. There was a statistically significant difference between the groups ($P < 0.0001$). In the FSFI subgroup evaluation, there was sexual desire dysfunction in 21 (70%) patients, arousal dysfunction in 24 (80%), lubrication dysfunction in 19 (63.3%), orgasmic dysfunction in 18 (60%), sexual

Table 5. The relationship between lung involvement and the SSc and FSFI scores.

Sexual dysfunction index	Lung involvement (+) n = 15	Lung involvement (–) n = 15	P
Sexual desire	2.53 ± 1.18	2.4 ± 1.18	0.77
Arousal	2.53 ± 1.72	2.4 ± 1.5	0.80
Lubrication	2.4 ± 1.55	2.73 ± 1.53	0.59
Orgasm	2.46 ± 1.68	2.66 ± 1.49	0.9
Sexual satisfaction	2.2 ± 1.32	2.8 ± 1.47	0.32
Sexual pain	3 ± 1.73	2.26 ± 1.33	0.13
Total score	15.13 ± 7.5	15.4 ± 7.12	1

dissatisfaction in 4 (13.3%), and sexual pain dysfunction in 7 (23.3%) patients. Thus, significant differences were determined between the groups with regard to sexual desire, arousal, lubrication, orgasm, sexual satisfaction, and pain.

Impens et al. investigated the impact of SSc on sexual dysfunction in 60 SSc patients; the mean FSFI score was 24.9, which was significantly different than that of the normal population. In the analysis of the relationship between the SF-36 mental component scale and the FSFI score, a strong and positive correlation was determined (17). In the present study, a strong and positive relationship was determined between the SF-36 physical component scale and FSFI findings. Furthermore, statistical significance was determined between age, subtype of disease, lung involvement, and sexual function, comparable to the results of the Impens study.

Schouffoer et al. also investigated sexual function in 37 SSc patients in comparison with a control group. The SF-36 and FSFI were administered along with a questionnaire including features of the disease such as daily activity, Reynaud's phenomenon, digital ulcers, intestinal and pulmonary symptoms, and 20 questions to determine the pain level. The FSFI total mean score was 20.9 ± 9.4. A significant difference was determined between the groups with respect to the FSFI total score and subgroup score. Moreover, a negative correlation was determined between sexual dissatisfaction, disease duration, and FSFI total score. No relationship was found between the FSFI score and disease subtype (18).

Levis et al. investigated sexual dysfunction and related clinical symptoms in an evaluation of both sexually active and inactive patients; the causes of sexual dysfunction in sexually inactive patients were questioned. The FSFI was applied to 165 sexually active SSc patients. The presence of Reynaud's phenomenon and digital ulcers and evaluation of the modified Rodnan skin score, GIS and pulmonary symptoms, and pain were investigated. Sexual dysfunction was established in 102/165 (61.8%). This dysfunction was higher in patients of advanced age with a high Rodnan skin score and marked pulmonary symptoms. There was no relationship between disease duration and pulmonary hypertension (19).

There are some limitations to our study. The patient and the control groups were compared only for age. No comparison was made in terms of other factors which can affect sexual function, such as educational status, or other mental or medical illnesses. Evaluations like modified Rodnan skin score and respiratory function test, which evaluate the disease grade affecting sexual function in the patient group, were not used. In conclusion, although sexual function is an important stress factor in women with SSc, it has not been adequately addressed. There should be greater awareness that sexual dysfunction and QoL in SSc are common problems, and this issue should not be ignored by physicians. With proper diagnosis and support, the QoL of these patients can be improved.

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