

# Sexual dysfunction in male patients with Behçet's disease

Yıldız M<sup>1</sup>, Batmaz İ<sup>1</sup>, Sula B<sup>2</sup>, Uçmak D<sup>2</sup>, Sarıyıldız MA<sup>1</sup>, Dağgüllü M<sup>3</sup>, Türkçü F<sup>4</sup>, Karakoç M<sup>1</sup>

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## ABSTRACT

**Introduction:** The purpose of this study was to evaluate sexual dysfunction in male patients with Behçet's Disease in comparison to healthy control subjects.

**Material and Methods:** Seventy-two sexually active male patients with Behçet's Disease and 62 healthy control subjects were included in this study. Patients' demographic and clinical characteristics were noted. Sexual function was assessed by means of the International Index of Erectile Function scoring system. In addition, disease-related quality of life was measured by means of the Nottingham Health Profile, and anxiety and depression levels were assessed by means of the Hospital Anxiety and Depression Scale.

**Results:** Patients with Behçet's Disease scored significantly lower in each of the 5 parameters of International Index of Erectile Function ( $p < 0.001$ ) and significantly higher in Hospital Anxiety and Depression Scale compared to healthy control subjects ( $p < 0.001$ ). International Index of Erectile Function scores correlated with age, duration of disease and Hospital Anxiety and Depression Scale and Nottingham Health Profile scores in patients with Behçet's Disease ( $p < 0.05$ ).

**Conclusion:** Sexual function is impaired in male patients with Behçet's Disease, which might be associated by age, duration of disease, psychological status and quality of life.

## INTRODUCTION

Behçet's disease (BD) is a form of vasculitis of the small vessels, which is characterized by ulcers of the oral mu-

cosa and genital region, and retinal disorders<sup>1</sup>. It is a multisystem chronic inflammatory disease which can be accompanied by dermatological, neurological, intestinal, urogenital and cardiopulmonary symptoms in addition to the abovementioned<sup>2</sup>.

Sexual dysfunction is a common problem among the general population<sup>3,4</sup>. Numerous mechanisms of multiple origins may lead to sexual dysfunction<sup>5</sup>. It is suggested that sexual dysfunction is associated with various rheumatic diseases<sup>6-12</sup> and can be associated with various factors such as fatigue, weakness, stiffness, functional inadequacy, depression, anxiety and treatment side effects<sup>13,14</sup>. In their study, Erdogru *et al.* suggested that sexual dysfunction was associated with neurological involvement in patients with BD whereas Hiz *et al.* suggested an association with psychological status and history of arthritis<sup>15,16</sup>.

The purpose of this study was to evaluate sexual dysfunction in male patients with BD and investigate the association between sexual dysfunction and clinical parameters, psychological status and quality of life.

## MATERIAL AND METHODS

This cross-sectional study was approved by the local ethics committee. All the participants signed an informed consent form prior to participating in the study. Seventy-two sexually active male patients who were diagnosed with BD according to the International Study Group Classification Criteria<sup>17</sup> and 62 healthy control subjects who presented to the Department of Physical Medicine and Rehabilitation of the university hospital between May 2012 - March 2013 were included in this study. Sixty-two healthy control subjects were randomly chosen from among the employees of our hospital. Patients' demographic and clinical characteristics such as age, height, weight, level of education, duration of disease, medications and smoking status were noted. Patients were questioned and examined in a detailed way for the existence of symptoms specific to

1. Department of Physical Medicine and Rehabilitation, Faculty of Medicine, Dicle University School of Medicine, Diyarbakir, Turkey  
 2. Department of Dermatology, Faculty of Medicine, Dicle University School of Medicine, Diyarbakir, Turkey  
 3. Department of Urology, Faculty of Medicine, Dicle University School of Medicine, Diyarbakir, Turkey  
 4. Department of Ophthalmology, Faculty of Medicine, Dicle University School of Medicine, Diyarbakir, Turkey

BD including oral and genital ulcers, dermatological findings (such as erythema nodosum and pseudofolliculitis lesions), arthritis and vascular involvement. Laboratory tests included complete blood count, liver/renal function tests, erythrocyte sedimentation rate and serum C-reactive protein.

Patients with any kind of collagen tissue disorders or any other inflammatory articular diseases, malignancies, diseases of the central nervous system, chronic kidney/liver/thyroid diseases or psychological disorders and patients on beta-blockers or antidepressants were excluded from this study.

## QUESTIONNAIRES

### ASSESSMENT OF THE SEXUAL FUNCTION

Sexual function in male patients with BD was assessed by means of the validated Turkish version of the International Index of Erectile Function scoring system (IIEF). This is a reliable multidimensional self-administered index which consists of 15 questions covering 5 parameters of sexual function as follows: erectile function (EF) (6 questions), orgasmic function (OF) (2 questions), sexual desire (SD) (2 questions), intercourse satisfaction (IS) (3 questions) and overall satisfaction (OS) (2 questions). Higher scores indicate a better quality of sex<sup>18,19</sup>.

### ASSESSMENT OF THE PSYCHOLOGICAL VARIABLES

Hospital Anxiety and Depression Scale (HADS) was used for assessment of the psychological variables in patients with BD. It is a Likert-type self-assessment scale developed by Zigmond and Snaith<sup>20</sup>. Turkish version of the scale was verified by Aydemir *et al.* in terms of validity and reliability<sup>21</sup>. It consists of 14 items; 7 to investigate the depression symptoms (HADS-D) and another 7 to investigate the anxiety symptoms (HADS-A). Higher scores indicate higher severity of symptoms.

### ASSESSMENT OF THE QUALITY OF LIFE

The Nottingham Health Profile (NHP), which was designed to measure the subjective health status, was used to assess the quality of life. It consists of 38 questions grouped into six parameters as follows: physical mobility (eight items), social isolation (five items), emotional reactions (nine items), pain (eight items), sleep (five items) and energy (three items). Scores for each parameter can range from 0–100, with higher

scores indicating more severely compromised status<sup>22,23</sup>.

## STATISTICAL ANALYSES

Calculations were made by means of the Statistical Package for Social Sciences for Windows Software Version 16.0. Kolmogorov–Smirnov test was used to confirm the normal distribution of data in both groups. A parametric test was employed for variables in normal distribution. Comparison of data between reciprocal groups was made by means of independent samples-t test and Chi-square test. Correlation between IIEF scores, psychological status, quality of life and disease-related variables was investigated by means of Pearson or Spearman's correlation analysis. P value smaller than 0.05 was considered statistically significant.

## RESULTS

Seventy-five patients diagnosed with Behçet's disease which were invited to join the study. Since 2 patients were excluded due to the serious psychological disorders and related pharmaceutical therapy; one patient was excluded due to thyroid disorder; 72 patients completed the study. Patients' laboratory and demographical characteristics are demonstrated in Table I. The mean age of patients with BD and control subjects was  $35.5 \pm 7.8$  and  $36.5 \pm 4.9$ , respectively. No statistically significant difference was found between patients with BD and control subjects regarding age, BMI and smoking ( $p > 0.05$ ).

Among all patients, 42 (58.3%) were elementary school graduates, 18 (25%) were high school graduates and 12 (16.7%) were university graduates. Patients' clinical characteristics are demonstrated in Table II.

As to the use of medicines among 72 patients, 24 patients were on colchicine alone, 4 patients were on interferon alone or in combination with colchicine, 1 patient was on infliximab and 42 patients were on such medications as cyclosporine and azathioprine alone or together or in combination with colchicine. Furthermore, 16 patients were additionally on steroids. And also, no statistically relation was found between steroid using and parameters of IIEF ( $p > 0.05$ ). Mean doses of medications are demonstrated in Table I.

As to the mean NHP scores among patients with BD, pain score was  $25.6 \pm 26.2$ , physical mobility score was

**TABLE I. DEMOGRAPHICAL AND LABORATORY CHARACTERISTICS OF THE BEHCET'S PATIENTS (DRUG DOSES AS MG/DAY)**

| Variables                       | Values<br>(mean ± SD) |
|---------------------------------|-----------------------|
| Age (years)                     | 36.5 ± 7.8            |
| Height (cm)                     | 172.7 ± 5.9           |
| Weight (kg)                     | 74.1 ± 10.3           |
| BMI (kg/m <sup>2</sup> )        | 24.6 ± 3.1            |
| Disease duration (month)        | 79.2 ± 75.1           |
| Smoking (%)                     | 16.7                  |
| ESR (mm/h)                      | 10.4 ± 7.9            |
| CRP (mg/dl)                     | 0.6 ± 0.6             |
| WBC (10 <sup>3</sup> /micL)     | 8.8 ± 2.2             |
| HCT                             | 42.6 ± 3.4            |
| PLT (10 <sup>3</sup> /micL)     | 269.3 ± 64.6          |
| Steroid dose (16 patients)      | 15.06 ± 8.74          |
| Colchicine dose (54 patients)   | 1.13 ± 0.22           |
| Cyclosporine dose (12 patients) | 97.91 ± 12.87         |
| Azothioprine dose (35 patients) | 117.14 ± 24.07        |

SD: standard deviation, BMI: body mass index, ESR: erythrocyte sedimentation rate, CRP: C-reactive protein, WBC: white blood cell, HCT: haematocrit, PLT: platelet

11.3 ± 13.4, energy score was 53.7 ± 41.5, sleep score was 42.1 ± 33.2, social isolation score was 31.1 ± 38.1 and emotional reaction score was 34.6 ± 35.8.

Patients with BD scored significantly higher in HADS compared to control subjects. On the other hand, they scored significantly lower in each of the five parameters of IIEF ( $p < 0.001$ ) (Table III).

Relation between parameters of IIEF and age, BMI, education, duration of disease, smoking and HADS and NHP scores is demonstrated in Table IV.

No statistically relation was found when smoking and non smoking patients were compared in terms of IIEF scores. When compared with younger group (25-40 age, 46 patients) with older group (40-55 age 26 patients) according to sexual functions; younger group had significantly higher scores in terms of orgasmic function, sexual desire, and IIEF total score.

No relation was found between parameters of IIEF and active oral and genital ulcers, ocular involvement, venous thrombosis and arthritis.

## DISCUSSION

In this study, patients with BD scored significantly lower in all of the IIEF parameters compared to control subjects. In addition, sexual dysfunction was found to be associated with age, duration of disease, psychological status and quality of life in patients with BD.

Sexual dysfunction might be associated with various factors in patients with rheumatic diseases. There are studies in the literature suggesting that increased disease activity indicated more severely affected sexual function in patients with RA. Such factors as articular pain during intercourse, stiffness and fatigue were held responsible for sexual dysfunction in 50% of patients with rheumatic diseases<sup>24,25</sup>. Recent studies reported increased rates of sexual dysfunction in AS patients compared to control subjects as well as an association between sexual dysfunction and articular restrictions, depression, anxiety and increased disease activity<sup>11,26,27</sup>. On the other hand, *Eltis et al.* found no significant difference between patients with AS and healthy controls regarding sexual dysfunction<sup>28</sup>. Increased frequency of sexual dysfunction was reported among SS patients in various studies<sup>10,19</sup>. Vascular disorders, fibrotic changes

**TABLE II. CLINICAL CHARACTERISTICS OF THE PATIENTS**

|                      | Never (n, %) | Past (n, %) | Current (n, %) |
|----------------------|--------------|-------------|----------------|
| Oral ulcer           | –            | 36 (% 50)   | 36 (% 50)      |
| Genital ulcer        | 17 (% 23.6)  | 48 (% 66.7) | 7 (% 9.7)      |
| Ocular involvement   | 18 (% 25)    | 23 (% 31.9) | 31 (% 43.1)    |
| Erythema nodosum     | 53 (% 73.6)  | 17 (% 23.6) | 2 (% 2.8)      |
| Pseudofolliculitis   | 7 (% 9.7)    | 34 (% 47.2) | 31 (% 43.1)    |
| Venous involvement   | 64 (% 88.9)  | 8 (% 11.1)  | –              |
| Arterial involvement | 71 (% 98.6)  | 1 (% 1.4)   | –              |
| Peripheral arthritis | 35 (% 48.6)  | 25 (% 34.7) | 12 (% 16.7)    |

**TABLE III. MEAN SCORES OF THE PATIENTS AND CONTROLS FOR THE IIEF DOMAINS AND PSYCHOLOGICAL STATUS (MEAN ± SD)**

| IIEF domains (ranges)           | Patient (72) | Control (62) | p       |
|---------------------------------|--------------|--------------|---------|
| Erectile function (0-30)        | 23.7 ± 5.5   | 27.2 ± 2.7   | < 0.001 |
| Orgasmic function (0-10)        | 11.0 ± 2.6   | 12.5 ± 1.7   | < 0.001 |
| Sexual desire (2-10)            | 8.4 ± 1.6    | 9.4 ± 1.0    | < 0.001 |
| Intercourse satisfaction (0-15) | 7.5 ± 1.3    | 8.4 ± 1.3    | < 0.001 |
| Overall satisfaction (2-10)     | 7.7 ± 2.0    | 9.0 ± 1.1    | < 0.001 |
| IIEF total score (4-75)         | 58.5 ± 12.0  | 66.7 ± 5.6   | < 0.001 |
| HADS-D                          | 9.18 ± 5.0   | 3.90 ± 2.9   | < 0.001 |
| HADS-A                          | 7.97 ± 4.4   | 3.12 ± 2.2   | < 0.001 |

SD: standard deviation, IIEF: International Index of Erectile Function, HADS-A: Hospital Anxiety and Depression Scale-Anxiety, HADS-D: Hospital Anxiety and Depression Scale-Depression

**TABLE IV. CORRELATION BETWEEN THE IIEF SCORES WITH DEMOGRAPHICAL CHARACTERISTICS, PSYCHOLOGICAL STATUS AND QUALITY OF LIFE IN PATIENTS WITH BEHCET'S DISEASE**

| Characteristics             | Erectile function | Orgasmic function | Sexual desire | Intercourse satisfaction | Overall satisfaction | IIEF total score |
|-----------------------------|-------------------|-------------------|---------------|--------------------------|----------------------|------------------|
| Age (year)                  | r = -0.239**      | r = -0.281**      | r = -0.191*   | r = -0.332**             | r = -0.169           | r = -0.277**     |
| BMI (kg/m <sup>2</sup> )    | r = -0.007        | r = -0.009        | r = 0.079     | r = -0.047               | r = -0.004           | r = -0.026       |
| Education                   | r = 0.085         | r = 0.043         | r = 0.136     | r = 0.138                | r = 0.160            | r = 0.111        |
| Duration of disease (month) | r = -0.396**      | r = -0.345**      | r = -0.337**  | r = -0.090               | r = -0.361**         | r = -0.383**     |
| Smoking                     | r = 0.023         | r = -0.047        | r = -0.092    | r = 0.089                | r = -0.042           | r = 0.000        |
| HADS-D                      | r = -0.492**      | r = -0.399**      | r = -0.468**  | r = -0.375**             | r = -0.464**         | r = -0.524**     |
| HADS-A                      | r = -0.429**      | r = -0.396**      | r = -0.363**  | r = -0.317**             | r = -0.425**         | r = -0.462**     |
| NHP pain                    | r = -0.045        | r = -0.103        | r = -0.007    | r = -0.073               | r = -0.042           | r = -0.074       |
| NHP physical mobility       | r = -0.113        | r = -0.074        | r = -0.066    | r = -0.043               | r = -0.015           | r = -0.094       |
| NHP energy                  | r = -0.316**      | r = -0.306**      | r = -0.278*   | r = -0.239*              | r = -0.299*          | r = -0.350**     |
| NHP sleep                   | r = -0.243*       | r = -0.175        | r = -0.101    | r = -0.062               | r = -0.180           | r = -0.213       |
| NHP social isolation        | r = -0.580**      | r = -0.529**      | r = -0.558**  | r = -0.379**             | r = -0.622**         | r = -0.621**     |
| NHP emotional reactions     | r = -0.568**      | r = -0.488**      | r = -0.460**  | r = -0.288*              | r = -0.503**         | r = -0.562**     |

IIEF: International Index of Erectile Function, HADS-A: Hospital Anxiety and Depression Scale-Anxiety, HADS-D: Hospital Anxiety and Depression Scale-Depression, NHP: Nottingham health profile

\* = p < 0.05; \*\* = p < 0.01

and psychogenic factors were suggested to impact on sexual function<sup>28,29</sup>. In a study on sexuality in patients with FM, a significant relation was found between sexual dysfunction and extensive pain, impaired quality of life and older age<sup>12</sup>. There are only a limited number of studies in the literature investigating sexual dysfunction in male patients with BD, and all of them suggested increased sexual dysfunction in patients with BD. In these studies, sexual dysfunction was associated with depression, arthritis and neurological and vascular involvement<sup>15,16,30,31</sup>.

It was suggested that condition caused by numerous systemic or chronic diseases and psychological reactions to treatment modalities might lead to sexual dysfunction<sup>32</sup>. As other chronic diseases, BD was suggested to lead to sexual dysfunction secondary to psychiatric problems<sup>16,30,33</sup>. In the present study, increased levels of depression and anxiety were found among patients with BD compared to healthy control subjects. In addition, a significant association was detected between psychological status and sexual function, and it was suggested that BD led to psychological problems

which caused sexual dysfunction.

Sexual function is an important component of the quality of life<sup>11</sup>. Patient's self-image and sexuality might be affected by the impact of painful ulcers in BD<sup>34</sup>. In addition, patients suffering from chronic painful disorders such as BD may have distress, negative feelings, and dissatisfaction in all aspects of their life<sup>35</sup>. It was clearly demonstrated in the present study that sexual dysfunction correlated with reduced quality of life in patients with BD. Therefore, management strategies (such as psychotherapeutic interventions, behavioral based sexual therapies) focusing on sexual dysfunction might help improve the quality of life in patients with BD.

It was reported that the prevalence of erectile dysfunction (ED) among patients with various chronic diseases was 7% between 18-29 years of age, 9% between 30-39 years of age and 18% between 50-59 years of age and it varied from 43.9 to 90% among patients with BD<sup>36</sup>. Erdemir *et al.* suggested that age, of all parameters, had the most significant association with ED in patients with BD<sup>16,30</sup>. In the present study, the prevalence of ED was 58% among the study population, and there was a significant negative correlation between age and sexual function.

Hız *et al.* found a significant association between duration of disease and IIEF parameters (intercourse satisfaction, orgasmic function and sexual desire) in patients with BD<sup>16</sup>. Similarly in the present study, a significant negative correlation was found between duration of disease and erectile function, orgasmic function, sexual desire and overall satisfaction. As the duration of disease increases, patients might avoid sexual life because of such psychological factors as despair, hopelessness, and fear of death. The relationship between erectile dysfunction and psychological factors may be reciprocal, therefore when disease duration increases, impaired erectile functions may be effects psychological status in patients with BD.

Lower educational level may also lead sexual dysfunction in patients with Behçet's disease. Hız *et al.*<sup>16</sup> investigated the sexual functions according to IIEF scale and revealed that the IIEF score was higher in high school graduates compared to college graduates in Behçet's disease. In a recent study Yetkin *et al.* reported that higher educational level was associated with better sexual functions in female Behçet's patients<sup>37</sup>. These data shows that higher educational levels may be important for healthy sexual life. However in our study there were no association between education level and sexual

functions.

This study has a few limitations. Firstly, it has a cross-sectional design. Secondly, the number of individuals participating in the study is limited. Finally, we didn't evaluate the activity status of Behçet's patients, while activity status could have supplied crucial results in terms of sexual functions in patients with Behçet's disease. Prospective studies with greater participation are needed in order to clearly characterise sexual function in male patients with BD.

## CONCLUSION

In this study, sexual dysfunction was significantly higher among male patients with BD compared to healthy control subjects. In addition, it was associated with age, duration of disease, psychological status and quality of life. As a conclusion, sexual dysfunction in male patients with BD seems to present an important problem and must therefore be addressed by physicians during routine examinations.

## CORRESPONDENCE TO

Bilal Sula  
Department of Dermatology, Faculty of Medicine,  
Dicle University School of Medicine, Diyarbakir, Turkey  
E-mail: bulentsula@hotmail.com

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