

Research Article

The Effect of Migraine on Sexual Functions

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Abstract

Objectives: Migraine is a common brain disorder with high disability rates which involves a series of abnormal physiologic networks, interacting at different levels of the central and peripheral nervous system. In this study, we aimed to investigate the effect of migraine on sexual functions in women.

Methods: Patients with migraine without aura in accordance with the criteria of International Headache Society who filled in information forms to confirm to participate in our study were taken in at the Algology and Neurosurgery Polyclinic of our hospital.

Results: Migraine treatment approaches can also be applied on patients whose sexual functions are affected. A development, even a small one, in patients' quality of life can be achieved.

Conclusion: Migraine can affect an important part of people's lives with pains and the direct and indirect results of pain.

Keywords: Migraine, sexual disorder, quality of life

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Headaches have disturbed humankind since the early ages of civilization. Epidemiologic studies define the scope and range of headache disorders and the effects of these on individuals. In the Global Burden of Disease Survey 2010, it was ranked as the third most prevalent disorder and seventh-highest specific cause of disability worldwide. Although migraine reduces the quality of life and increases work absenteeism.^[1] Migraine is thought to be a result of the neurovascular phenomenon of cortical spreading depression, a self-propagating wave of depolarization that spreads across the cerebral cortex. The cortical spreading depression causes intracranial neurogenic inflammation around the meningeal blood vessels.^[2] In addition, Migraine is two to three times more prevalent in women than men, and women report a longer attack duration, increased risk of headache recurrence, greater disability, and a longer period of time required to recover.^[3]

Migraine is predominantly a disorder of women that has

long been linked with sex hormones. These perimenstrual attacks are commonly labeled menstrual migraine and, according to the "estrogen withdrawal" migraine-triggering hypothesis, 8–10% are thought to be attributable to estrogen decline in the late luteal phase.^[4] There are publications on neurological disorders affecting sexual dysfunction.^[5]

As a result of all these mechanisms, migraine decreases the quality of life which led us to think that it might have an effect on the sexual disorders in women of childbearing age and our study discusses whether migraine is effective in this sense.

Methods

A total number of 60 women were taken in and they were all between the ages of 19 and 42. All of the patients were active as sexuality. This study with the approval of the N. E. University Ethic Committee 2017/943 and patient consent

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form. Patients with migraine without aura in accordance with the criteria of International Headache Society (ICHD-3) who filled in information forms to confirm to participate in our study were taken in at the Algology and Neurosurgery Polyclinic of our hospital. These patients were also at midas grade level 3 (moderate disability) on the migraine midas classification and were questioned for systemic diseases with the ones that have a history of coronary artery diseases, cardiovascular diseases, ischemic diseases or major risk factors, hypertension, hyperlipidemia and smoking being eliminated from the study. After the neurological evaluation, psychological evaluation was completed with beck depression and anxiety scale due to exclude depression and anxiety. The sexual dysfunction was questioned with a 19-item female sexual function questionnaire (Female Sexual Function Index (FSFI)) with 6 likert scale options in each question.

In the blood samples taken from patients that went through laboratory analysis, the levels of TSH, Free T3, Free T4, prolactin, estradiol, 17 OH-Progesterone and Free Testosterone. A total number of 60 health women were taken in and they were all between the ages of 19 and 42.

The data obtained in this study were evaluated with SPSS 20.0 statistic package program. The sample size calculated according to an earlier study. With a sample size of over 60 patients, the study had 80% power to detect differences of a 5% level of significance, adjusted for multiple comparisons between the two sites. This sample size also enabled calculation of 95% limits of agreement with associated confidence limits of ± 0.1 SD of measurement differences. While the difference between the healthy group and the migraine groups was examined, the Independent Samples t test was used for the normally distributed variables and the Mann Whitney U Test was used for the non-normally distributed variables. While examining the differences between the groups; 0.05 was used as the level of significance and $p < 0.05$ if there is a significant difference between the groups, $p > 0.05$ is stated that there is no significant difference between the groups.

Results

The age average was 29 ± 3.2 . In the control group, 30 health women that do not have any diseases were taken in. The other group, 30 women that have migraine disease were taken in.

It was observed that the FSFI score related to sexual dysfunction was statistically significant as a result of the comparisons between the female group composed of migraine group and the control group ($p < 0.05$). The FSFI score was significantly higher in the healthy group (mean: 27.8) than in the migraine group (mean: 17.9) (Fig. 1).

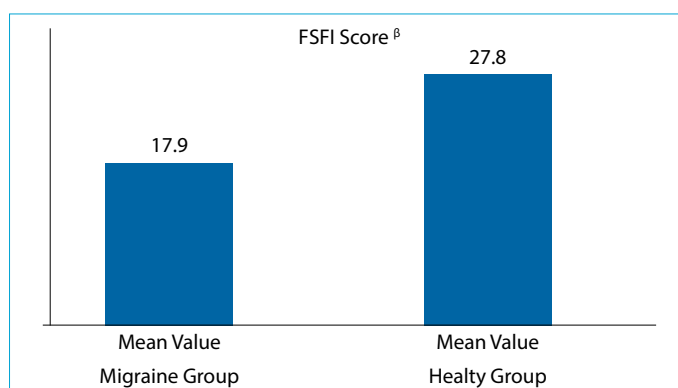


Figure 1. FSFI Score assessment within the migraine group and healthy group.

FSFI: Female Sexual Function Index β .

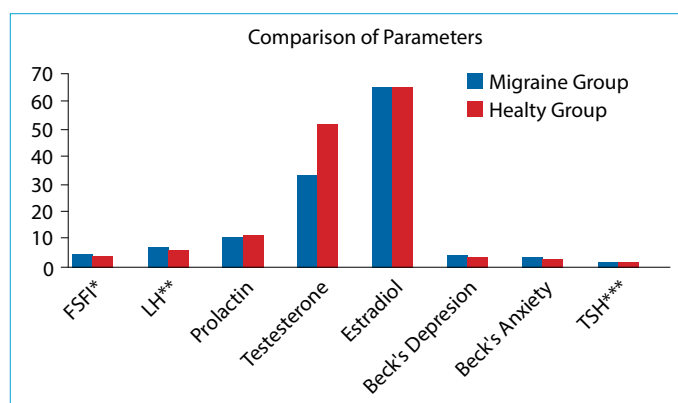


Figure 2. Parameters assessment within the migraine group and healthy group.

FSH: Follicle-Stimulating Hormone*; LH: Luteinizing Hormone**; TSH: Thyroid-stimulating hormone***.

There was also a significant difference between the two groups in terms of testosterone and Beck anxiety ($p < 0.05$). Testosterone was higher in the healthy group than in the migraine group (mean: 51.7), while the anxiety level was higher in the migraine patient group (mean: 3.7) (Fig. 2) (Table 1).

When the FSFI score related to age-related sexual dysfunction in the migraine patients was examined; There was no statistically significant difference ($p > 0.05$). The FSFI scores in the 30-year-old group and the over 30-year-old group are quite close. There is no significant difference in the age score (Table 2).

Discussion

Migraine is a public health issue that has large-scale effects on both individuals and society.^[6] It deeply affects the society as a whole. Current studies from the USA examined the direct and indirect costs of migraine.^[7] The indirect cost includes migraine's effects on work performance, domestic responsibilities and other roles. Most of the direct cost is

Table 1. Assessments Between Migraine and Control Groups

	Migraine Group		Control Group		p
	Mean	SD	Mean	SD	
FSH* (mIU/ml)	4.9	1.8	4.3	1.0	0.407
LH** (mIU/ml)	7.1	1.3	6.7	1.2	0.090
Prolactin (ng/ml)	11	3	12	5	0.889
Testosterone (ng/ml)	33.6	5.5	51.7	18.4	0.001 ^a
EstradiolE2 (ng/ml)	65.1	12.7	65.4	9.2	0.910
FSFI score	17.9	2.0	27.8	1.1	0.001 ^a
Beck's depression	4.6	1.5	4.3	1.5	0.352
Beck's anxiety	3.7	1.0	3.2	1.3	0.020 ^a
TSH*** (mU/l)	2.4	1.0	2.3	1.0	0.724

p<0.05 ^a; FSH: Follicle-Stimulating Hormone*; LH: Luteinizing Hormone**; TSH: Thyroid-stimulating hormone***.

Table 2. Age-based assessment in patients with migraine (It was evaluated as two groups as over 30 years and under 30 years old)

FSFI β Score	Over 30	Years	Under 30	Years	p
	Mean	(n=28) SD γ	Mean	(n=32) SD γ	
	17.7	2.0	18.1	2.1	0.441
Mean of the ages	31		27		0.451

FSFI: Female Sexual Function Index β ; SD: Standard deviation γ .

labour force losses such as absenteeism at work and performance decreases while working.^[8] Migraine prevalence differs depending on age and gender. This prevalence before puberty is higher in males than females; later as puberty is getting closer migraine prevalence increases rapidly in females when compared to males.^[9,10] Migraine shows a comorbidity with many neurological and psychiatric disorders including strokes, epilepsy, depression and anxiety disorder. Understanding migraine comorbidity is important in many different points of view. Several population-based study was conducted in order to determine whether there is a comorbidity between migraine, major depression, panic disorder and other psychiatric disorders.^[11,12] These epidemiologic studies conclude that bipolar disorder, depression, panic disorder and anxiety disorder were more common in migraine patients.^[13,14]

Disclosures

Ethics Committee Approval: The study was approved by the Local Ethics Committee.

Peer-review: Externally peer-reviewed.

Conflict of Interest: None declared.

Authorship Contributions: Concept – Y.T.; Design – I.C.; Supervision – A.M.; Materials – Y.T.; Data collection &/or processing – Y.T., A.C.; Analysis and/or interpretation – I.C., Y.T.; Literature search – I.C., A.M.; Writing – Y.T., I.C.; Critical review – A.M., A.C.

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