

Gender Types of Patients with Migraine and Tension-Type Headache

Received: 16 February 2022, **Revised:** 22 March 2022, **Accepted:** 24 April 2022

¹Bahtigul Holmuratova, ¹Dilshoda Akramova, ²Dilorom Adilbekova

1Tashkent medical academy, Department of Neurology

2Tashkent medical academy, Department of Anatomy and clinical anatomy

Abstract

Introduction: Primary headaches, especially migraine and tension-type headache (TTE), are of great interest to neurologists and general practitioners due to the high frequency of occurrence, not always clear clinical signs, and difficulties in diagnosis. We all know that headaches are common among women. Of course, this difference has been explained by many scientific studies with hormonal changes. However, the specific gender characteristics of the female and male organism are often not taken into account. In the scientific literature, the terms “sex” and “gender” are used to indicate the difference between men and women, and the two terms are often used interchangeably. According to the authorities given in the literature, each of these two terms is a separate concept.

The purpose of the scientific work: to determine the gender identity among patients suffering from migraine and tension-type headache.

Research materials and methods: A total of 82 patients (53 women, 29 men) aged 18 to 45 years were examined to study the importance of gender characteristics in the course of primary headaches. 33 of them had migraine (8 men, 25 women), and 49 had tension type-headache (12 men, 37 women). Each subject was divided into gender groups by calculating the Sandra Behm index (IS).

Results: Among our patients of Uzbek nationality, suffering from migraine and tension type-headaches, groups with dominant femininity and weak masculinity (fA, fE); masculinity aspects are dominant and femininity qualities are less expressed (mA, mE) groups were divided; Androgynous and undifferentiated type patients were not identified.

Conclusion: The results showed that female gender and femininity lead to more frequent migraine attacks and more pronounced clinical symptoms of tension headache.

Headache (H, cephalgia) is one of the most common complaints of patients visiting neurologists and general practitioners, causing significant socio-economic damage to society, and is one of the ten most common causes of disability worldwide [1]. All types of headaches are classified in to two groups: primary H and secondary H (symptomatic) [2]. Gafurov B.G. according to (2009), primary headache is the main one in the general structure of cephalic syndromes, accounting for 94-96% of all cases, and secondary headache is 4-6% [3]. Primary headaches, in particular migraine and tension-type headache (TTH), are of great interest to neurologists and general practitioners due to the high frequency of occurrence, the absence of always clear clinical signs, and difficulties in diagnosis and diagnosis [4]. The prevalence of migraine among the population is 8-20%, while tension headache occurs in 30-78% of the population. TTH was considered a psychogenic disease for many years, and later several scientific studies proved its neurobiological properties [5]. TTH is the most common primary headache, followed by migraine. According to the WHO, migraine is included in the list of 19 diseases that

disrupt people's adaptation to social life [5]. According to a meta-analysis of epidemiological studies, approximately 60% of men experience headaches at some point in their lives. It was found that 75-80% of headaches occur in women under the age of 45, and after that the prevalence decreases slightly. The prevalence of headache is almost the same among men and women in their 60s. (Scher AL, 1999). However, the prevalence and age distribution of some types of headaches vary significantly. Women are 2-3 times more likely to suffer from migraines or tension type-headaches than men. In addition, there are types of headaches that are more common among men, but are rare (Osipova V.V., 1998). The reasons for the differences in the prevalence of various types of headaches in men and women remain unclear.

Despite the high prevalence and significant socio-economic damage, the pathophysiology of primary cephalgias is not fully understood. For many years, the appearance of migraine symptoms was considered to be related to changes in the tone of blood vessels, that is, aura – narrowing of intracerebral vessels; and

headache occurs as a result of the expansion of the arteries of the hard membrane (dura mater) of the brain. The main reason for the occurrence of migraine attacks, the mechanism of the pain phase and their long duration is explained by the activation of the trigeminovascular (TVS) system. Vasodilatation of intracranial blood vessels and their neurogenic inflammation, in which, in the first place, blood vessels of the dura mater of the brain and their extravasation – the release of pain neuropeptides (calcitonin gene-related peptide – CGRP, nitric oxide, histamine) into the blood – is another component of the pathophysiology of migraine headaches. TVS activation in patients with migraine is associated with increased excitability of the cerebral cortex. Many clinical observations and electrophysiological studies confirm that central hyperexcitability is the main part of the pathophysiological phenomenon of migraine pain [6,7,8,9,10].

As we all know, the frequency of occurrence of primary BO is also different between men and women. According to Z.R. Ibadullayev (2014), BO occurs in 20% of women, and 6% of men [11].

We all know that headaches are common among women. Of course, this difference has been explained by many scientific studies with hormonal changes. However, the specific gender characteristics of the female and male organism are often not taken into account. In the scientific literature, the terms “sex” and “gender” are used to indicate the difference between men and women, and the two terms are often used interchangeably. We suggest to separate these two terms.

The term “gender” is used when talking about the biological characteristics (genetic, anatomical, hormonal, physiological) of the organism that determine female or male characteristics. The term “gender” is used to express personal characteristics such as “masculinity” and femininity, which are formed under the influence of the social and cultural environment, that is, stereotypes, ideas that exist in society, which personal qualities (pattern of psycho-characteristic actions) shows which are masculine and which are feminine. (Deaux K., 1985; Unger R., Crawford M., 1992; Bern S., 1993). The concept of “gender” is used to describe the socially formed characteristics of women and men, while sex refers to biological characteristics. Humans are born female or

male, but learn to become boys and girls who become female or male. (WHO, 2020)

Based on this, gender characteristics are manifested differently in different people. This characteristic is often studied by sociologists and psychologists. It was found that the difference between men and women in some reactions, especially the reaction to pain, depends not only on their biological characteristics, but also on how developed the level of masculinity and femininity in them is (Danilov A.B., 2007g). At this point, among the population of our Republic, there are almost no studies on the pathogenetic mechanisms of pain in headache syndromes, taking into account gender characteristics. Studies on the importance of gender characteristics in headache sufferers of the Uzbek population have not been conducted. In this study, gender-specific characteristics of migraine and tension-type headache patients were investigated and the role of these characteristics in the course of the disease was evaluated.

1. Materials and methods.

A total of 82 patients (53 women, 29 men) aged 18 to 45 years were examined to study the importance of gender characteristics in the course of primary headaches. 33 of them had migraine (8 men, 25 women), and 49 had tension headache (12 men, 37 women). As selection criteria, patients with headache attacks at least 2 times per month and the disease has been ongoing for at least 6 months were selected. The diagnosis was made according to the third International Classification of Headaches, revised and approved in 2018 (3-ICH). Written informed consent was obtained from all patients and controls to participate in the study. The patients’ age, sex, and headache attacks were recorded. The presence of other types of primary and secondary headaches, the presence of pain in other parts of the body, the presence of acute or chronic somatic diseases during an attack, cardiovascular diseases, severe depression, the presence of organic neurological diseases, hypertension, drug or alcohol abuse, and participation in the study. Patients who refused, pregnant and lactating women, patients younger than 18 years and older than 45 years were excluded from the study. The control group consisted of 20 healthy volunteers (13 women, 7 men) matched to the main group in terms of age and sex. The examination was carried out at the City Clinical Hospital No. 7, the base of the “Neurology and Medical

Psychology” Department of the Tashkent Medical Academy. All examinations were performed before the patients started treatment

Table 1 General description of the research material

Signs	Healthy people (≤ 20)	M (≤ 33)	TTH (≤ 49)
Female	13	25	37
Male	7	8	12
Age	31,5 \pm 1,6	36,2 \pm 1,4	36,5 \pm 2,3
Duration of illness, year	—	17,9 \pm 1,8	6,4 \pm 1,2

The study began with the collection of patients' complaints and anamnesis, and a neurological examination. All those selected for the study (82 patients, 20 controls) were administered the Sandra Bem questionnaire to determine gender characteristics (femininity/masculinity level) (“Polo-rolevoy oprosnik Sandry Bem” – Bem Sex Role Inventory, 1974). The Sandra Bem index (IS) was calculated for each subject. All patients were included in one of the following 6 groups according to IS index indicators:

1. Feminine female (Ff) — IS > 0,81
2. Masculine female (Mf) — IS < -0,235
3. Feminine male (Fm) — IS > 0,235

4. Masculine male (Mm)—IS < - 0,81
5. Androgynous type of male and female (And) —IS >0;
6. Undifferentiated type (undf) —IS <0;

2. Results.

Among our Uzbek patients with migraine and tension-type headache, there are groups with dominant femininity and weak masculinity (Ff, Mf); masculinity aspects are distinguished and femininity qualities are less expressed (Fm, Mm); Androgynous and undifferentiated type patients were not identified. This is probably related to the specificity of the eastern nation (Table 2):

Table 2 Gender levels of patients with migraine and tension-type headache

№	Gender type	Patients (n=82)	% (n=100)
1	Feminine female (Ff)	47	57%
2	Masculine female (Mf)	15	18%
3	Feminine male (Fm)	6 ta	7%
4	Masculine male (Mm)	14	17%

Journal of Coastal Life Medicine

Among the patients suffering from migraine and tension type of headaches, there are more women of the feminine type and more of the male patients of the masculine type, indicating that gender factors are also important in the development of this disease. In

addition, when comparing the psychoneurological characteristics of men and women with migraine and tension-type headache, a wider range of clinical symptoms and a more severe clinical presentation were found in women than in men (table 3):

Table 3 Clinical features of migraine and tension-type headache

Indicators	Female	Male
Headache intensity according to VAS, score	6,1 ±2,3	5,5±1,8
Number of attacks, during one month	6,4±2,9*	3,0±1,5
Attack duration, hours	34,5±9,2*	8,1±3,8
Number of night attacks, %	15*	8
Decreased quality of life, score	16,8±1,5	16,3±1,7

3. Conclusion.

The clinical features of headache are different in men and women, in particular, women have more headache attacks than men (nausea, vomiting, photo-, phonophobia), more nocturnal attacks, and are characterized by a greater manifestation of provoking factors. In terms of gender, these differences were more pronounced in feminine women and men than in masculine women and men. The results showed that female gender and femininity lead to more frequent migraine attacks and more pronounced clinical symptoms of tension-type headache.

References:

- [1] Первичные головные боли: диагностика и лечение. Методические рекомендации. – В.В. Осипова. – Москва – 2017. – 27 с.
- [2] ВОЗ, апрель, 2016г., <https://www.who.int/ru/news-room/factsheets/detail/headache-disorders>.
- [3] Гафуров Б.Г. Мигрень: Методич. реком. – 2009. - Ст. 6
- [4] Данилов А.Б., 2012; Азимова Ю.Э., Осипова В.В., 2014; Табеева Г.Р., 2014; Stovner L.G., 2007, 2010; Lebedeva E.R. et al., 2014, 2015
- [5] Осипова В. В., Табеева Г. Р., Тринитатский Ю. В., Шестель Е.А. “Первичные головные боли: клиника, диагностика, терапия”. Информационное письмо (для неврологов, терапевтов, врачей общей практики). Ростов-на-Дону.: «Антей», 2011. – 20 с.
- [6] Вейн А.М. Головная боль: классификация, клиника, диагностика, лечение / А.М. Вейн, О.А. Колосова, Н.А. Яковлев и др. — М., 1994. — 286 с;
- [7] Мищенко Т.С. Современные подходы к фармакотерапии мигрени / Т.С. Мищенко, В.Н. Мищенко // Междунар. неврол. журнал. — 2015. — № 1 (71). — С. 90-98.;
- [8] Осипова В.В. Первичные головные боли: диагностика, клиника, терапия. Практическое руководство / В.В. Осипова, Г.Р. Табеева. — М.: Медицинское информационное агентство, 2014. — 336 с;
- [9] Сергеев А.В. Центральная нейрональная гипервозбудимость — предрасположенность к мигрени / А.В. Сергеев, Г.Р. Табеева, Ю.Э. Азимова // Рос. журн. боли. — 2010. — № 2. — С. 3-8.;
- [10] Снопкова Е.В. Анализ клинико-психологических и нейрофизиологических особенностей мигрени у пациентов старшей возрастной группы / Е.В. Снопкова, А.В. Сергеев, В.В. Осипова // Рос. журн. боли. — 2012. — № 1. — С. 44.;
- [11] Ибадуллаев З.Р. Асаб касалликлари. – Тошкент, 2014. - С. 863.
- [12] Headache Classification Committee of the International Headache Society (IHS). The

Journal of Coastal Life Medicine

International Classification of Headache Disorders, 3rd edition. Cephalalgia. 2018;38:1-211.

- [13] Burstein R, Yarnitsky D, Goor-Aryeh I, Ransil BJ, Bajwa ZH. An association between migraine and cutaneous allodynia. *Ann Neurol.* 2000;47:614-624.;

- [14] Lipton RB, Bigal ME, Ashina S, et al. Cutaneous allodynia in the migraine population. *Ann Neurol.* 2008;63:148-158.

- [15] Buse DC, Scher AI, Dodick DW, et al. Impact of migraine on the family: Perspectives of people with migraine and their spouse/domestic partner in the CaMEO study. *Mayo Clin Proc.* 2016: doi: 10.1016/j.mayocp.2016.02.013. [Epub ahead of print].