



## GENDER DIFFERENCES IN THE PARACLINICAL FEATURES OF THE COURSE OF TRIGEMINAL NEURALGIA

PhD Dilsora Nuriddinovna Juraeva<sup>1</sup>, PhD Umida Rakhmatulloevna Narzulaeva<sup>2</sup>, Kurbonova Gulbahor Aslamovna<sup>3</sup>

1-The intern of neurologic branch of Jondor regional medical association.

2-PhD Department of "Pathophysiology" of the Samarkand Medical Institute

3- Assistant Department of "Pathophysiology" of the Samarkand Medical Institute

Article history:	Abstract:
<b>Received:</b> January 11 <sup>th</sup> 2022 <b>Accepted:</b> February 11 <sup>th</sup> 2022 <b>Published:</b> March 30 <sup>th</sup> 2022	From 2012 till 2014 in Buchara state neurologic branch of medical association we were experimentid 71 patients (41 patients of women (58%), 30 patients of men (42%)) suffering are analyzed by the idiopathic form of neuralgia of a trigeminal nerve. It is established that expressiveness of neuralgia of a trigeminal nerve prevails in group of women and in age group of 45-59 years irrespective of a floor. An EEG was performed in all patients.

**Keywords:** Neuralgia of a trigeminal nerve, electroencephalogram (EEG), pain of syndrome.

**RELEVANCE:** Although the first data on trigeminal neuralgia have been available for more than 200 years, the etiology, pathogenesis, and treatment of this disease have not been fully elucidated. Therefore, there is no highly effective treatment for this disease. Among the pain syndromes associated with cranial nerve damage, trigeminal neural pathology occupies a central place. This is due to the prevalence of the disease, its severity, and the inadequacy of effective treatment modalities, the complexity and inconsistency of pain neurophysiology.

Trigeminal neuralgia is common, occurring at 30-50 per 100,000 population. According to the World Health Organization (WHO), it is 2-4 cases per 10,000 population.

According to Obtrman M, the incidence per 100,000 population is 5.9 per year for women and 3.4 per year for men.

According to long-term observations of the Neurology Clinic of the Moscow State Medical-Dental University, women with trigeminal neuralgia are 3: 1 more likely than men, and 70% have right-sided, 29% left-sided, and 1% bilateral.

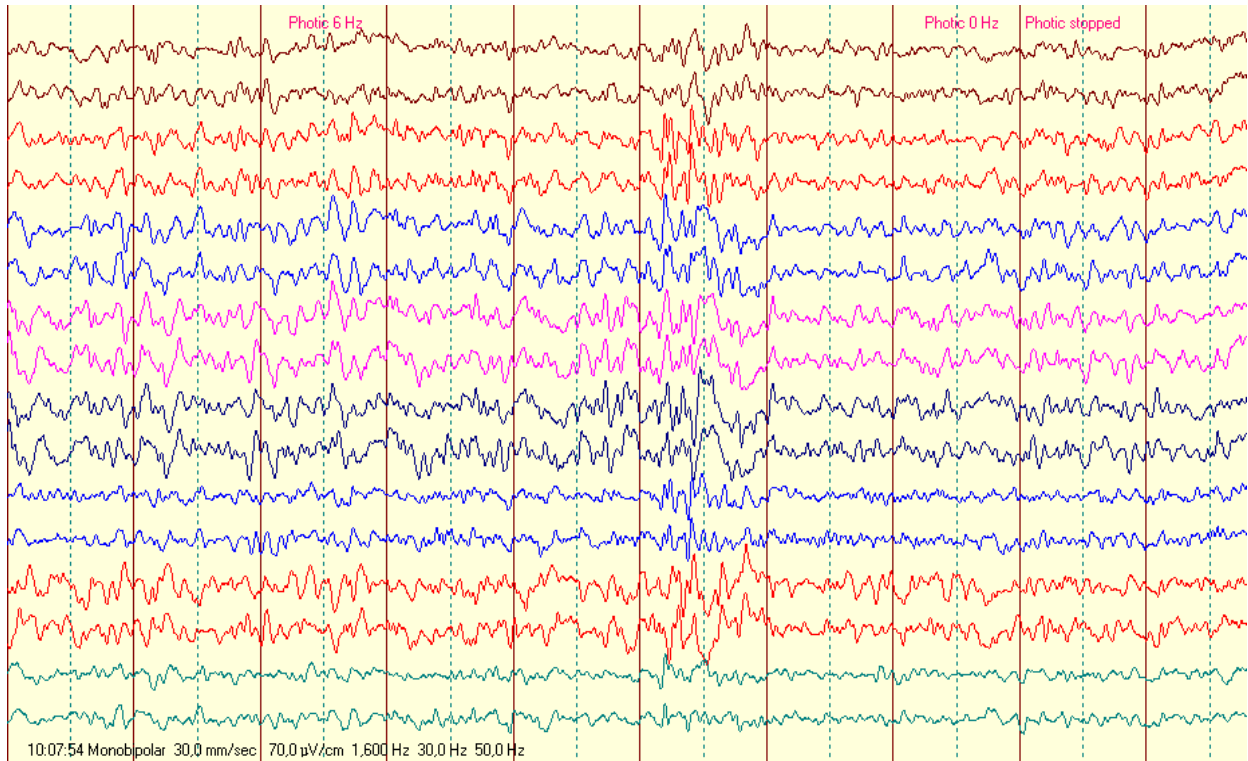
Despite the studies, there is no consensus on the diagnostic criteria for trigeminal neuralgia, and no effective treatment measures have been developed. Accordingly, the clinical and pathogenetic transition features of trigeminal neuralgia require in-depth study in terms of gender dimorphism.

**THE PURPOSE OF THE STUDY:** to determine the sex-related difference in functional changes observed in brain activity by EEG method in the period of sensitivity and inter-attack in trigeminal neuralgia.

**RESEARCH MATERIAL AND METHODS.** a total of 71 patients aged 45 to 59 years with idiopathic trigeminal neuralgia were analyzed. 30 of them are men and 41 are women. All patients underwent EEG at the time of attack and in remission.

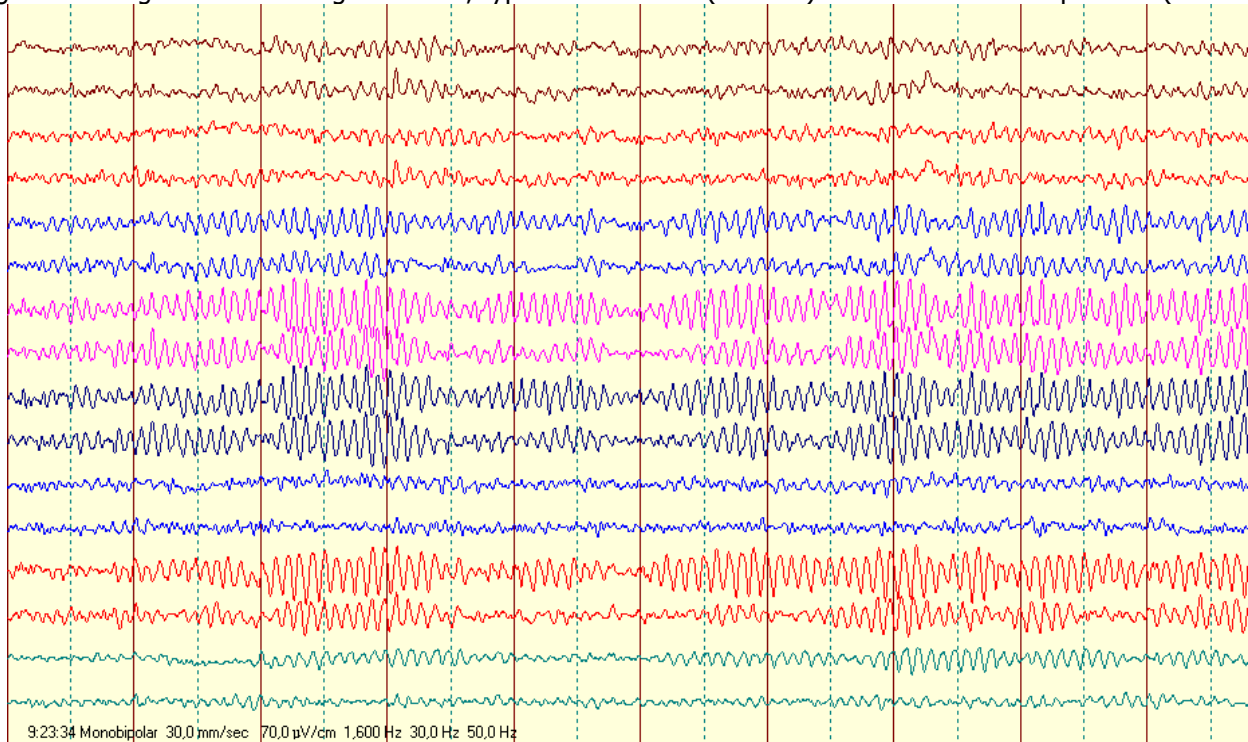
Research results. EEG examination was performed in 30 male and 41 female patients with idiopathic trigeminal neuralgia. In 34 of the 71 patients re-examined in dynamics, left-sided localization of neuralgia was observed in 17 men and 17 women. In 37 patients (13 males and 24 females), right-sided localization of neuralgia was observed. Re-examination of the dynamics during remission showed that the pathological changes that occurred on the EEG gradually decreased.

When analyzing EEG changes in the onset and remission of sex-related trigeminal neuralgia, a desynchronous type of EEG was observed in 32 ( $45 \pm 5.9$ ) of 71 patients during the onset of the disease, while in remission it decreased to 27 ( $38 \pm 5.7$ ) ( $r < 0.05$ ). Bilateral paroxysmal activity (Fig. 1) was observed in 17 patients ( $24 \pm 5.0$ ) during the onset of the disease, and in 6 patients ( $8.5 \pm 3.3$ ) during remission ( $r < 0.01$ ).



**Figure 1. Bilateral paroxysmal activity.**

Type I normal EEG (Fig. 2) according to Zhirmunsky classification was observed in 22 patients ( $31 \pm 5.5$ ) during the neuralgia attack. During remission, type I normal EEG ( $r < 0.01$ ) was observed in 38 patients ( $53.5 \pm 5.9$ ).



**Figure 2. Normal alpha rhythm**



This suggests that the desynchronous type of EEG and bilateral paroxysmal activity decreased during remission relative to the onset period of neuralgia, meaning that the cessation of the pain attack resulted

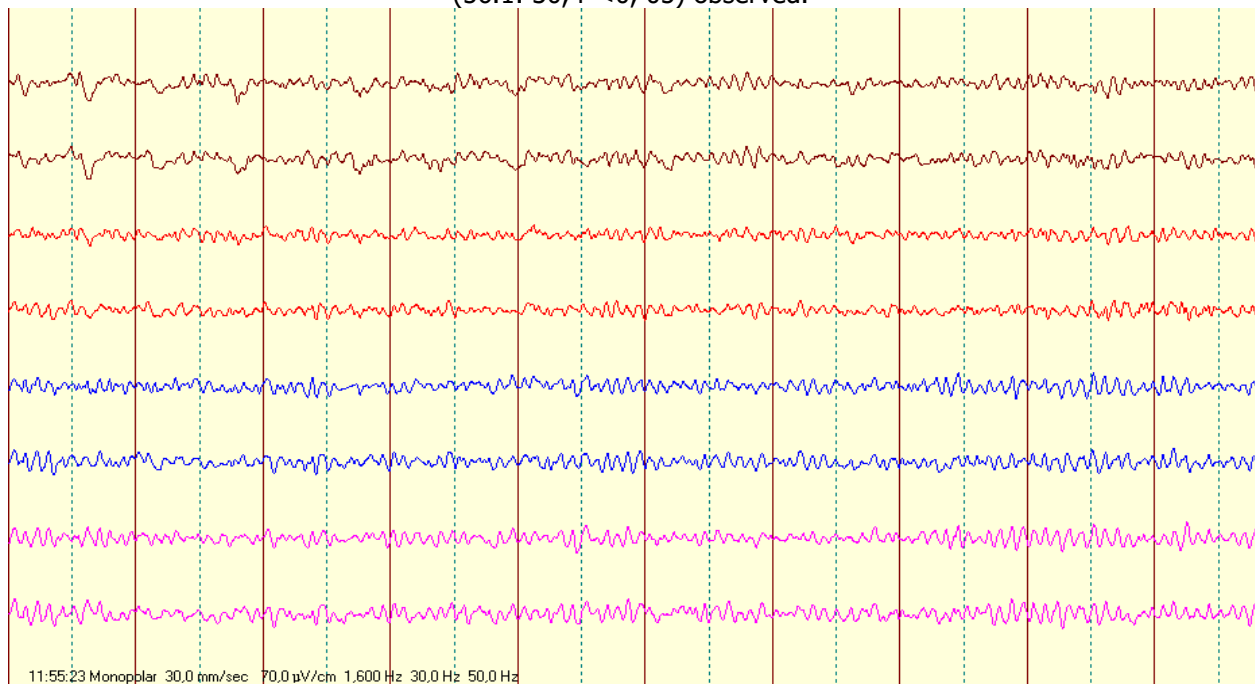
in a decrease in bilateral paroxysmal activity on the EEG, but less change in the desynchronous type of EEG Tab 1.

**Table 1.**  
**Changes in the EEG during the onset and remission of trigeminal neuralgia**

Rhythms	Attack period		Remission period		p<
	n	%	n	%	
Norma	22	31±5,5	38	53,5±5,9	0,01
Desynchronous	32	45±5,9	27	38±5,7	0,05
Bilateral paroxysmal activity	17	24±5,0	6	8,5±3,3	0,01
total	71		71		

During the onset of sex-related trigeminal neuralgia, the EEG showed a high degree of synchronization in men compared to women, which is especially evident in the acute phase of the disease, which can be attributed to the high sensitivity of men to pain.

According to the data obtained, the EEG showed a predominance of bilateral paroxysmal activity in men during the onset of the disease (30: 19.5,  $r < 0.05$ ), while in women the predominance of the desynchronous type of EEG (Fig. 3) (56.1: 30,  $r < 0, 05$ ) observed.



**Figure 3. Normal EEG. Slight desynchronization**

During the onset of the disease, 40% of men had a normal EEG of type I, while 24.4% of women had a normal EEG, with a difference between groups of reliability  $r < 0.05$ . Activation of brain dysfunction can be observed in patients with a desynchronous type of EEG. The more pronounced observation of the desynchronous type of EEG in women in particular is related to the activity of the sympathetic fibers of the autonomic nerve, which we can also see in women

with higher levels of vegetative dystonia syndrome and severe anxiety than men. The results of the analysis are detailed in Table 2

**Table 2**  
**EEG changes during the onset of trigeminal neuralgia**  
**(before using anticonvulsants).**

Rhythms	male		female		p<
	n	%	n	%	
Norma	12	40±8,9	10	24,4±6,7	0,05
Desynchronous	9	30±8,3	23	56,1±7,7	0,01
Bilateral paroxysmal activity	9	30±8,3	8	19,5±6,2	0,05
total	30		41		71

When we performed an EEG examination after administration of carbamazepine in patients with trigeminal neuralgia, the following result was observed, we observed a decrease in bilateral proximal activity in men and women. The desynchronous type of EEG decreased slightly in women and men and remained higher in women than in men (48.8: 23.3,  $r < 0.01$ ). According to the Zhirmunsky classification, both women and men have an increase in type I

compared to the normal EEG attack period ( $66.7 \pm 8.6$  in men,  $43.9 \pm 7.7$  in women,  $r < 0.01$ ). It can be seen that monotherapy had an effective effect on patients with bilateral paroxysmal activity observed on the EEG. Mono-therapy was less effective in patients with a desynchronous type of EEG. Monotherapy was less effective, especially in women with a desynchronous type of EEG (Table 3).

**Table 3**  
**Efficacy of anticonvulsants and EEG properties.**  
**(in%).**

Rhythms	male			female			p<
	Before treatment	After treatment	%	Before treatment	After treatment	%	
Norma	12	20	66,7±8,6	10	18	43,9±7,7	0,01
Desynchronous	9	7	23,3±7,7	23	20	48,8±7,8	0,01
Bilateral paroxysmal activity	9	3	10±5,4	8	3	7,3±4,0	-
total	30	30		41	41		71

### CONCLUSIONS.

The results of the study showed that bilateral paroxysmal activity (24%) and desynchronous type of EEG (45%) were more common during the acute phase of the disease, while bilateral paroxysmal activity (8.8%) and desynchronous type of EEG (38%) were less common during remission. can be observed. In EEG analyzes of patients before the use of anticonvulsants during the onset of neuralgia, bilateral paroxysmal activity was more common in men (30: 19.5,  $r < 0.01$ ), which can be attributed to the high sensitivity of men to pain. The desynchronous type of EEG is more common in women (56.1: 30,  $r < 0.01$ ) due to the activity of the sympathetic fibers of the autonomic nerve in women. Of the 71 patients re-examined in the dynamics, left-sided localization of neuralgia was observed in 34 patients (17 males, 17 females), and right-sided localization was observed in 37 patients (13 males, 24

females). Re-examination of the dynamics during remission showed that the pathological changes that occurred on the EEG gradually decreased.

### REFERENCES:

1. Balyazina E.V., Anatomical Predposylki Preimushchestvenno Pravostoronney lokalizatsii boley u bolnyx idiopaticheskoy neuralgiey troynichnogo nerva // Vladikavkazskiy Mediko-Biologicheskiy Vestnik. 2011., 20-21. S. 110-115.
2. Gandylyan K.S. Modern representations of etiopathogenesis and methods of treatment of pathology of the trigeminal nervous system. International journal of experimental education №4, 2015. p. 314-317
3. Melnikova O. N. "Trigeminal neuralgia." Magazine «Golovnaya bol», №7, 2004.



4. V. Stepanchenko. Trigeminal neuralgia. Journal "Vrach" 2002 №4. 81
5. Miller J. P., Acar F., Burchiel K. J. Classification of trigeminal neuralgia: clinical, therapeutic, and prognostic implications in a series of 144 patients undergoing microvascular decompression. J. Neurosurg. 2009. – Vol. 111, N 6. – P. 1231–1234 (140)
6. Umida Rakhmatulloevna Narzulaeva, Gulnoza Utkurovna Samieva, Zilola Suvankulovna Pardaeva Pathogenetic Aspects of Verified Risk Factors Such as Arterial Hypertension and Dyslipidemia in the Development of Chronic Heart Failure American Journal of Medicine and Medical Sciences, 2020 10(10), pp. 776-779
7. Arzikulov, A. Sh. The role of vegetative dysfunction in the development of arterial hypertension in children / A. Sh. Arzikulov, D. N. Xolmatov, D. B. B. Abdullaev, X. E. Mullajonov. - Text: neposredstvennyy // Molodoy uchenyy. - 2017. - № 49 (183). - S. 116-119.