


## Clinical Manifestations And Assessment Of Quality Of Life In The Differentiated Treatment Of Patients With Trigeminal Neuralgia

<sup>1</sup>  Ortikboy Goyibnazarovich Ernazarov

<sup>1</sup> Tashkent State Medical University, head of the Neurosurgery Department, Multidisciplinary Clinic, Tashkent, Uzbekistan

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### Abstract

*The article describes in detail the historical aspects of such a serious disease as trigeminal neuralgia, the dynamic development of methods and techniques of conservative and surgical treatment. In connection with the development of medicine and the emergence of modern diagnostic methods, an analysis and importance for determining the severity of trigeminal neuralgia are given. The advantages of methods for treating trigeminal neuralgia, the validity of a differentiated approach taking into account the severity of the disease is given. Studies of the quality of life of patients using questionnaires, based on the analysis of the data obtained, the choice of a method for treating trigeminal neuralgia and improving the results.*

**Keywords:** Trigeminal neuralgia, diagnostics, quality of life, differentiated approach, severity of neuralgia.

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### 1. Introduction

Trigeminal neuralgia (TN) is a syndrome characterized by sudden, short-term, intense, recurring pain in the innervation zone of one or more branches of the trigeminal nerve. This definition of TN is confirmed by the International Association for the Study of Pain [1,4,12,19]. Pain syndrome in long-term recurrent courses of neuralgia can change - it can become constant, diffuse, acquire a "burning", "pressing", "aching" character [5,11,16,18]. Trigeminal neuralgia is quite common and makes up from thirty to fifty patients per hundred thousand inhabitants in most countries of the world, and the incidence according to the World Health

Organization (WHO) reaches three to five cases per hundred thousand inhabitants during the year. At present, it is not possible to accurately estimate the incidence and morbidity, since patients are most often treated by various specialists at their place of residence [6,7,11,13,15,19]. At the current stage of development of medicine, a more valuable method for diagnosing trigeminal neuralgia is Magnetic resonance imaging (MRI) from 1.5 to 3.0 Tesla, according to T2 (3D-FIESTA, DRIVE or CISS), time-of-flight magnetic resonance angiography (MRA) (3D-TOF), as well as contrast-enhanced weighted according to T1 mode [2,5,14,16,17]. A more modern and very important method in diagnosing trigeminal neuralgia is

electroneuromyography (ENMG), which determines the level of damage to the branches of the nerve, i.e., central or peripheral irritation. ENMG allows us to choose the tactics of surgical or conservative treatment of trigeminal neuralgia taking into account the level of damage [1,2,5,14,16]. Currently, quality of life (QOL), based on the patient's subjective feelings, is an important, and in some situations one of the main criteria for assessing the effectiveness of treatment in clinical trials. Quality of life reflects the impact of the disease and treatment on the patient's well-being and characterizes his physical, emotional and social well-being, which changes under the influence of the disease or its treatment, so scientists around the world have increasingly begun to study [3,8,9,10].

**Purpose of the study.** Improving the treatment results of patients with trigeminal neuralgia through a differentiated approach taking into account the severity of the course and assessing the quality of life.

## 2. Methods

The study is based on the results of observations of 171 patients with trigeminal neuralgia who were treated in the inpatient department of the Tashkent Medical Academy, a multidisciplinary clinic, and the neurosurgery department in the period from 2019 to 2023. To establish a diagnosis and choose a treatment method, all patients underwent a comprehensive examination, including clinical, neurological and instrumental research methods. During the initial examination of patients, as the main criteria for trigeminal neuralgia (TN), attention was paid to the presence of the following symptoms - unilateral paroxysmal facial pain; the presence of a trigger zone; soreness of the Vale points (pressure on which causes an attack), increased pain when eating and talking; a positive effect from treatment with Finley psinom at the initial stages of the disease. The presence of such symptoms as hypertonicity of the masticatory muscles, autonomic disorders, hypesthesia of the innervation zones of individual branches or the entire half of the face were also checked. NTN is characterized by the presence of short attacks (2-15 min), which can be repeated frequently (up to 30 times a day). We give an important place in establishing the diagnosis and determining further treatment tactics to magnetic resonance imaging (MRI) data from 1.5 to 3.0 Tesla, according to T2 (3D-FIESTA, DRIVE or CISS), time of flight magnetic resonance angiography (MRA) Slovak international

scientific journal # 86, (2024) 45 (3D-TOF), as well as contrast-enhanced weighted according to T1 mode to determine neurovascular conflict. In our studies, we used electroneuromyography (ENMG), which determines the level of damage to the nerve branches, i.e., central or peripheral irritation with a reliability of 75%, giving us the opportunity, taking into account the level of damage, to choose the tactics of surgical or conservative treatment of trigeminal neuralgia. The quality of life of patients was assessed using the questionnaires "Assessment of the quality of life in trigeminal neuralgia" and "Assessment of pain syndrome in trigeminal neuralgia" developed by the Republican Specialized Scientific and Practical Medical Center for Neurosurgery. Results and discussion The results of observations of 171 patients with trigeminal neuralgia who were treated in the inpatient department of the Tashkent Medical Academy, a multidisciplinary clinic, and the neurosurgery department in the period from 2019 to 2023 were studied. All patients were divided into three groups according to treatment methods, severity of trigeminal neuralgia and somatic status. The first group included 55 (32.2%) patients who underwent conservative treatment, blockade of the peripheral branches of the trigeminal nerve. The second group included 57 (33.3%) patients who underwent Gasser's node blockade, exeresis of the branches of the trigeminal nerve. The third group consisted of 59 (34.5%) patients who underwent microvascular decompression of the trigeminal nerve root. By age, patients were distributed according to the WHO classification, which provides for the identification of age groups: young age 14-19 years; younger middle age 20-44 years; older middle age 45-59 years; elderly age 60-74 years; old age 75-89 years. Distribution of patients by age and gender showed that among the patients, women prevailed - 103 (60.2%), there were 68 (39.8%) men, which is 1.5 times less than women. Most patients 71 (41.5%) were of middle and old age, the maximum number of patients was in the age group of 60-74 years, 52 (30.4%), which is consistent with the data of world scientists. When examining the somatic status, it was revealed that among 171 patients, 69 (40.5%) patients had somatic pathology, manifested in the form of arterial hypertension in 53 (31.0%) patients, ischemic heart disease in 13 patients (7.8%). In 19 (11.2%) observations, diabetes mellitus was noted, in 4 (2.6%) patients, liver pathology, and in 1 (0.9%), renal failure. It should be noted that the same patient had a combination of two or more somatic diseases, especially cardiovascular diseases. Analysis of provoking factors

based on the results of the study showed that almost all patients had: provoking factors such as chewing and talking in more than 93% of cases, the second place is taken by the factor of touch - up to 8% of observations, the rest are cold, brushing teeth, washing, shaving and opening the mouth in less than 5% of cases. Before admission to the clinic, all patients received complex conservative treatment, patients were treated by dentists, neurologists, maxillofacial surgeons. During examination of patients, the following symptoms were identified as the main criteria of trigeminal neuralgia: unilateral paroxysmal facial pain, the presence of a trigger zone in 171 patients examined; localization of trigger zones gave the following results, with a total of 33 (19.3%) observations; among 33 patients with trigger points, the nasolabial triangle ranks first in localization 16 (48.5), the mental region ranks second 8 (24.3%), the frontal-zygomatic region ranks third 3 (9.1%), and the remaining zones are the oral cavity, cheek, parotid region, Vale points, neck in the area of the spinous processes of the III-IV cervical vertebrae from 3% to 6% of cases. We also checked for symptoms of hypertonicity of the masticatory muscles, autonomic disorders, and hypoaesthesia of the innervation zones of individual branches or the entire half of the face. At the same time, it was confirmed that trigeminal neuralgia is characterized by the presence of short attacks (2-15 min), which can be repeated frequently (up to 30 times a day). The study of sensitivity disorders in the innervation zone of the trigeminal nerve branches yielded the following results. In our study, out of a total of 171 patients, 92 (54%) had impaired sensitivity in the innervation zone of the trigeminal nerve branches: 52.2% of cases of hypoaesthesia, 40.2% of cases of paresthesia, 6.5% of cases of hyperaesthesia, and 1 case of anesthesia as a result of previous surgical interventions. This case was observed among patients in the third group. As a result of multiple exeresis operations, sensitivity in the innervation zone was completely lost, and trophic changes in the facial muscles of the face on the side of the lesion of the trigeminal nerve branches occurred. Vegetative disorders in our patients were observed in 18 (10.5%) cases, of which 50.1% were hyperemia, 33.3% were lacrimation, 16.6% were salivation, if we consider by groups 55.6% were in the third group, 27.7% were in the second group, and the least were 16.7% in the first group. After treatment, vegetative disorders were restored. Analysis of the 171 patients examined, by the location of the affected branches of the trigeminal nerve, showed the following results. 134 (78.4%) patients had

trigeminal neuralgia on the right, 34 (19.8%) on the left, and in 3 (1.8%) observations on both sides. In our observations, the second (33.3%) and second + third branches (4.6%) were most often affected in the patients under study, and, as noted above, rightsided neuralgia was noted in most cases, which proves its typicality. Thus, in our observations, 2 branches were most often affected simultaneously in 50.9% of patients. Damage to all three branches was observed in 31.9% and one branch in 17.2%. Most often, the pain syndrome was on the right in 78.4%, on the left in 19.8% and on both sides in 1.8% of cases. The data we obtained from the study of patients are consistent with the literature data of world authors. 46 Slovak international scientific journal # 86, (2024) Positive results among the 171 patients under study were noted in 163 (95.0%), without changes in 8 (5.0%). The best indicators were in group 3, all patients in this group received positive results. This proves the effectiveness of the surgical intervention method with a differentiated approach to the treatment of trigeminal neuralgia, taking into account the somatic status of the patient. The analysis of the obtained data showed that 87% of patients in the third group showed significant improvement, 13% showed improvement, no change, in the second group 25.5% showed significant improvement, 66.7% showed improvement, in the first group only 9.2% showed significant improvement, 83.3% showed improvement, in the first and second groups no change in almost equal proportions more than 7% of cases. In our studies, microvascular decompression of the trigeminal nerve root at the brainstem turned out to be a more effective surgical intervention method, since 87% of the total number of patients treated in this group showed significant improvement. In our studies, questionnaires from the Republican Specialized Scientific and Practical Medical Center of Neurosurgery were used to assess the quality of life and pain syndrome in patients with trigeminal neuralgia. The use of the questionnaire "Assessment of the quality of life in trigeminal neuralgia" showed that the quality of life in all the studied groups was similar: that is, before the operation, the quality of life, indicators in all groups were low. After the treatment, the quality of life, indicators immediately began to improve in patients with trigeminal neuralgia, this was especially noticeable in the third group, and positive results were also shown by patients in the second and first groups. The use of the questionnaire "Assessment of pain syndrome in trigeminal neuralgia" in the third period showed that the parameters of pain syndrome in the preoperative period in the studied

patients in all groups differed from each other with a difference in points. High indicators were recorded in the first group before the operation, which corresponded to a severe degree of severity of the pain syndrome, and after the treatment in all groups, a decrease in it to an average degree was observed in both the first and second groups, which was noted by the data obtained as a result of using the questionnaires. Analyzing the anamnestic data of these patients, I would like to draw attention to the following points indicating the complexity of diagnosing the disease and, accordingly, incorrect treatment of patients. Thus, out of 5 patients with neuralgia of the first branch, 3 had previously been diagnosed with migraine, and appropriate therapy was carried out. However, the most difficult and causing certain damage to health are neuralgias of the 3rd or third branch. Almost all patients of the second group (57) consulted dentists about toothache. Almost all patients underwent therapy at the dentist, including tooth extraction. Further progression of pain allowed to correctly establish the diagnosis and conduct further therapy of the underlying disease. Thus, comparative assessment data on all used questionnaires of quality of life and pain syndrome in patients with TN before and after microvascular decompression of the trigeminal nerve root correlated with each other. According to the questionnaire "Assessment of pain syndrome in trigeminal neuralgia": a sum of up to 10 points - mild severity of trigeminal neuralgia, 11-21 points - moderate severity of trigeminal neuralgia, 22-32 points - severe severity of trigeminal neuralgia. Assessment of pain syndrome in trigeminal neuralgia according to the questionnaire made it possible to determine in 171 patients mild pain syndrome in 41 (24.4%), moderate pain in 121 (71.3%), severe pain in 9 (5.2%), and in the postoperative period - a complete absence of pain was noted in 166 (97.3%) and in 5 (2.9%) - mild pain syndrome. According to the questionnaire "Assessment of the quality of life in trigeminal neuralgia": a sum of up to 10 points is a slight deterioration in the quality of life, 11-21 points is a moderate deterioration in the quality of life, 22-33 points is a significant deterioration in the quality of life. Assessment of the quality of life according to the questionnaire in 171 patients with trigeminal neuralgia showed a significant deterioration in the quality of life in the preoperative period in 130 (76.5%) patients, and a deterioration in the quality of life in 41 (24.4%). And in the postoperative period, patients with a significant improvement in the quality of life amounted to 18 (10.4%) and with improvement - 146 (85.4%), a slight

improvement in the quality of life was noted in 7 (4.3%) patients.

#### **4. Conclusions**

1. Distribution of patients by age and gender showed that among the patients, women prevailed - 103 (60.2%), men were 68 (39.8%), which is 1.5 times less than women. Most patients 71 (41.5%) were of middle and old age, the maximum number of patients was in the age group of 60-74 years, 52 (30.4%), which is consistent with the data of world scientists. 2. Provoking factors such as chewing and talking more than 93% of cases, the second place is taken by the factor of touch - up to 8% of observations, the rest are cold, brushing teeth, washing, shaving and opening the mouth less than 5% of cases. 3. When examining the somatic status, it was revealed that among 171 patients, 69 (40.5%) had concomitant pathology, such as arterial hypertension in 53 (31.0%), ischemic heart disease in 13 (7.8%) cases, diabetes mellitus was noted in 19 (11.2%) observations, liver pathology in 4 (2.6%) and renal failure in 1 (0.9%). 4. Trigger zones in 171 patients in a total of 33 cases (19.3%) of observations, among 33 the following were revealed: nasolabial triangle 16 (48.5), mental region 8 (24.3%), frontal-zygomatic region 3 (9.1%), other zones such as the oral cavity, cheek, parotid region, Vale points, neck in the area of the spinous processes of the III-IV cervical vertebrae from 3% to 6% of cases. 5. In our study, out of 171 patients, 92 (54%) had impaired sensitivity in the innervation zone of the trigeminal nerve branches (52.2% of cases of hypoesthesia, 40.2% of cases of paresthesia, 6.5% of cases of hyperesthesia, and 1 case of anesthesia as a result of previous surgical interventions. 6. Autonomic disorders were observed in our patients in 18 (10.5%) cases, of which the most common were 50.1% hyperemia, 33.3% lacrimation, and 16.6% of cases of salivation. Slovak international scientific journal # 86, (2024) 47 7. Positive results after treatment of 171 patients were noted in 163 (95.0%), and unchanged in 8 (5.0%), which proves that all methods of treating neuralgia are quite effective when used in a differentiated manner. 8. Assessment of pain syndrome in trigeminal neuralgia using a questionnaire allowed us to determine mild pain syndrome in 41 (24.4%) patients, moderate pain syndrome in 121 (71.3%), severe pain syndrome in 9 (5.2%), and in the postoperative period, a complete absence of pain was noted in 166 (97.3%) and mild pain syndrome in 5 (2.9%). 9. Assessment of quality of life using a questionnaire in 171 patients with trigeminal neuralgia showed a significant deterioration in

quality of life in the preoperative period in 130 (76.5%) patients, and a deterioration in quality of life in 41 (24.4%). In the postoperative period, patients with a significant improvement in quality of life amounted to 18 (10.4%) and with improvement – 146 (85.4%), a slight improvement in quality of life was noted in 7 (4.3%) patients.

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