**Abdukadirova D. T., Ibragimova G.Sh., Turaeva M.N.**

**Andijan State Medical Institute**

# PREVENTION AND TREATMENT OF METABOLIC POLYNEUROPATHY IN PATIENTS WITH DIABETES MELLITUS.

**Annotation**.Diabetes mellitus is one of the important risk factors for the development of pathology from both the brain and the peripheral nervous system. Recent studies provide information about a reliable connection between the presence of diabetes and the risk of dementia and polyneuropathy. The selection of drugs used in the treatment of diseases of the conducting paths of the nervous system is usually limited by the use of alpha-lipoic acid, miltamma and anticholinsterase drugs. In some cases, with an undoubted autoimmune nature, the disease successfully used glucocorticosteroid and immunosuppressor drugs, as well as immunoglobulins and plasmapheresis.

**Абдукадирова Д. Т., Ибрагимова Г.Ш., Тураева М.Н.**

**Андижанский Государственный медицинский институт**

# ПРОФИЛАКТИКА И ЛЕЧЕНИЕ МЕТАБОЛИЧЕСКОЙ ПОЛИНЕЙРОПАТИИ У БОЛЬНЫХ САХАРНЫМ ДИАБЕТОМ.

**Аннотация**. Сахарный диабет является одним из важных факторов риска развития патологии со стороны как головного мозга так и периферической нервной системы. Исследования последних лет предоставляют сведения о достоверной связи между наличием СД и риском возникновения деменции и полинейропатии. Выбор медикаментозных средств, используемых в лечении болезней проводящих путей нервной системы, как правило, ограничен применением альфа-липоевой кислоты, мильтгаммы и антихолинэстеразных препаратов. В ряде случаев при несомненной аутоиммунной природе

заболевания с успехом применяются глюкокортикостероидные и иммуносупрессорные препараты, а также иммуноглобулины и плазмаферез.

**The purpose of the study**: to study the effectiveness of neurotrans with various complications of diabetes.

**Material and methods:** we examined 38 patients (23 women and 15 men) aged 51 to 79 years (the average age of patients was 70.6 ± 7.6 years). The study group included patients with manifestations of polyneuropathy of one degree or another against the background of type 2 diabetes. All patients conducted in-depth clinical and neurological examination. Paraclinical studies included ENMG, also to confirm and evaluate the dynamics of treatment, a biochemical blood test was carried out.

**NIS-LL (Neuropathy Impairment Score Lower Limb)**

**Muscle strength**

1. Bending of the thigh
2. Flexion of the thigh
3. Flexion of the knee
4. Flexion of the knee
5. Flexion of the ankle joint
6. Fighting the ankle joint
7. Fighting of the fingers of the foot
8. The fingers of the fingers of the foot

**Reflex**

9. Knitted
10. Achilles

**Sensitivity (large finger: Large finger: Large finger: Terminal phalanx)**

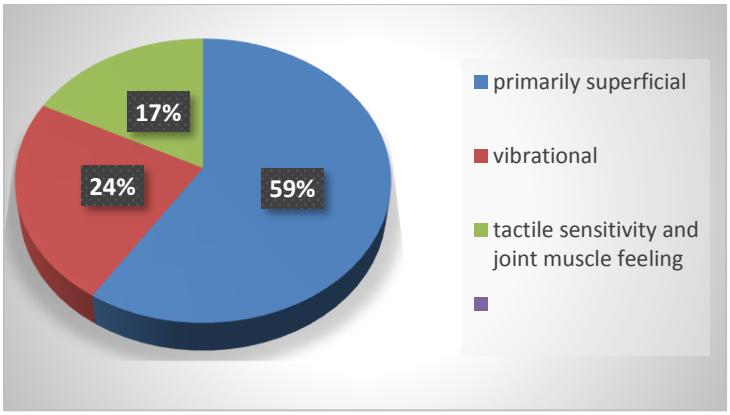
11. Tactile
12. Pain
13. Vibration
14. Muscle-fasting sense

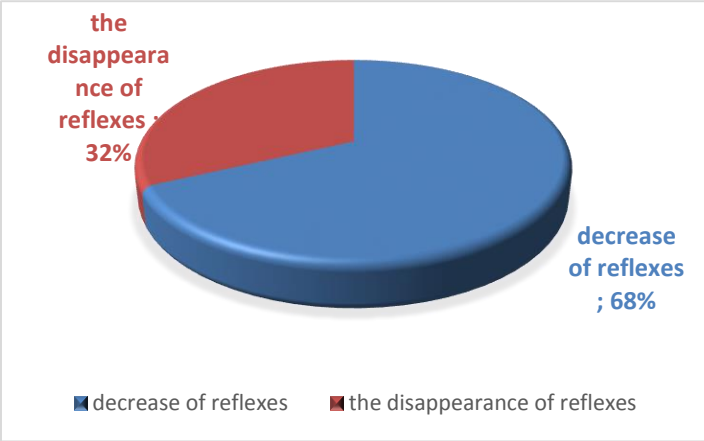
General score: Left side + right side = sum of the muscle force: 0-norm, 1-a decrease in force by 25%, 2-a decrease in force by 50 % , 3 - a decrease in force by 75%, 4 - paralysis. Reflexes: 0 - norm, 1 - decrease, 2 - absence. Sensitivity: 0 - norm, 1 - decrease, 2 - absence.

**The NTSS-9 scale is a measurement of symptoms over the past 24 hours. This measurement is your assessment of the patient using NTSS-9 as an analytical tool. The doctor can help the patient understand the questions.**

| **Symptoms** | | | **severity** | | | **frequency** |
|---|---|---|---|---|---|---|
| **Have you experienced**: Abs Weak poorly moderately very rarely often constantly | | | | | | |
| **over the past 24 hours?** | | | | | | |
| Shooting pains | 0 | 1 | 2 | 3 | 0 | 0.33 0.66 |
| Burning | 0 | 1 | 2 | 3 | 0 | 0.33 0.66 |
| aching pain | 0 | 1 | 2 | 3 | 0 | 0.33 0.66 |
| Allodinia | 0 | 1 | 2 | 3 | 0 | 0.33 0.66 |
| Static hyperalgesia | 0 | 1 | 2 | 3 | 0 | 0.33 0.66 |
| tingling | 0 | 1 | 2 | 3 | 0 | 0.33 0.66 |
| numbness | 0 | 1 | 2 | 3 | 0 | 0.33 0.66 |
| Collection | 0 | 1 | 2 | 3 | 0 | 0.33 0.66 |
| crampy | | | | | | |

**The results of the study** was observed in 36.5% of patients; Sensory-motor polyneuropathy (decrease in the strength of the muscles of the legs, knee and ahilic reflex, sensitivity on the feet)-99%. The main complaints of patients with DPN were positive neuropathic symptoms, such as numbness, burning and shooting pains, paresthesia (tingling with needles, crawling of “goosebumps”). Other additional sensory phenomena also influence the quality of life of patients: aching, tightening pain, painful sensation of cold, itching, painful muscle cramps (Krampi). With a thorough study of the neurological status, we revealed signs of neurological deficiency - negative neuropathic symptoms, in the form of a decrease in the sensitivity of all types, primarily superficial (59.2%), vibrational (23.4%) sensitivity, less often (17.4%) tactile sensitivity and joint muscle feeling.

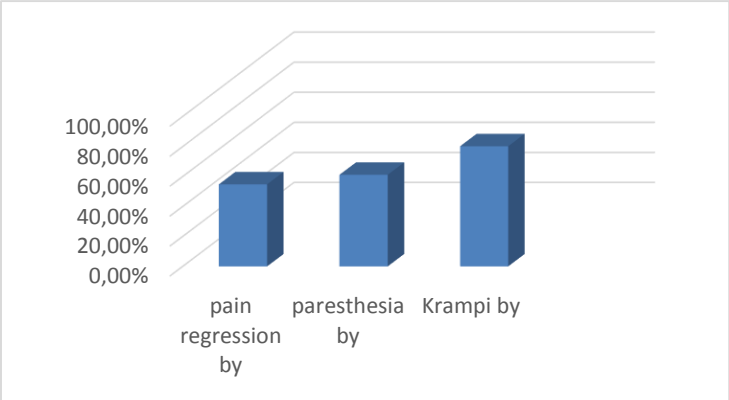



From the motor sphere, such signs as a decrease (68%) and the disappearance of reflexes (32%) were identified, in the later stages the severity of damage to the peripheral nerves in the distal sections acquires a total character.

In the process of study, patients of the main group was prescribed by the drug of the company "Olinefarm" according to the following scheme: injections of 1.5% of the solution of 1.0 ml per day for 10 days, then taking the orally at a dose of 20 mg 2 times a day during Three months. The control group did not receive comprehensive treatment.

**Discussion**. A decrease in neurological deficiency when evaluated using a NIS-LL scale shows that neuromidine treatment leads to an improvement in the functions of the peripheral nerves, and the dynamics on the NTSS-9 scale reflects this indicator. The confirmation of this fact is also an increase in the amplitude of the M-answer with stimulation of the fibula against the background of neuromidine therapy. In patients under study, we also observed pain regression by 54.8%, paresthesia by 61.2%, Krampi by 80.2%. This was expressed by the following indicators-on the NTSS-9 scale, the amount of points before and after treatment was in the main group 2.68 ± 0.59 points, and in the control group-1.45 ± 0.53 points ($p < 0.05$).




In the main group, the severity of all sensory symptoms decreased, and the most significantly - paresthesia (3.66 - 1.39, respectively), Krampi (3.82 - 2.05), vegetative pains (3.30 - 2.50). The difference in the sum of the points on the NIS-LL scale before and after treatment was 1.12 ± 0.41 points versus 0.09 ± 0.20, respectively.

**Findings.** The study notes that the main mechanism of the action of neurotranscence contributes to a significant improvement in the processes of neuroplasticity in the peripheral and central nervous system. This applies to the processes of the reference, the action on ion channels, improve neurotransmission, primarily in cholengergic synapses. The study on the effectiveness of neurotrans showed its powerful potential as a pharmacological neurorebalization drug - an original neuroplastic modulator.

**Literature.**

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