APPLICATION OF DYNAMIC ELECTRONEUROSTIMULATION (DENS) IN COMPLEX CONSERVATIVE TREATMENT OF PATIENTS WITH OSTEOPOROSIS

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The purpose of the research was to study possibilities of application of dynamic electroneumstimulation (DENS) in complex conservative treatment of patients with osteoporosis. 65 women were participating in the research. Clinical and functional manifestation of osteopenia and osteoporosis were assessed before the treatment course and after 6 and 12 months. DENS application increased efficiency of treatment which was expressed in analgetic effect and positive dynamics achieved by the results of ultrasonic densitometry.

Key words: dynamic electroneurostimulation. osteoporosis, pain syndrome, mineral density of the bone tissue.

Application of polyfunctional apparatuses DiaDENS is not a very widespread method of treatment in orthopedic and trauma hospitals. Method of dynamic electroneurostimulation (DENS) promotes improvement of the adaptation reaction and develops self-regulating body capabilities.

Purpose of the research.The Purpose of the present research was to study possibilities of DENS application in complex conservative treatment of patients with osteoporosis.

Research materials and methods. 65 women in the age from 35 to 49 working in difficult industrial environments were under examination. Average age of patients was 44.3±2.5 years. All patients were divided into three groups: 1st group consisting of 20 women had a traditional osteotrophic therapy (Vitrum calcium D3, calcitonin, artron-complex); 2nd group consisting of 35 women had a complex therapy including DENS; 3rd control group consisted of 10 women with normal indexes of mineral density of the bone tissue. All groups correlated by age and clinicoroentgenological picture of disease activity. The examined patients did not take preparations influencing metabolism of the bone tissue beforehand. They did not have diseases of the thyroid gland, kidneys or pancreatic diabetes. The patients had complaints about pains in the back and large joints, weakness and so on.

Clinical and functional manifestation of osteopenia and osteoporosis were assessed before the treatment course and after 6 and 12 months. Mineral density of the bone tissue (MDBT) was analyzed by the method of ultrasonic densitometry with help of the densitometer Achilles-express (Lunar, USA).
DiaDENS-DT apparatus was applied for procedures of dynamic electroneurostimulation. For electrodes disposition we followed the general layouts proposed by J.S. MaiLnheimer (1978). adjusting them to certain clinical manifestations of the disease.

Results of own researches. Improvement of the state of health was noted by all patients of the 1st and 2nd group by the end of the first month of therapy. The pain and general weakness were reduced which contributed to expansion of the motor activities, sleep normalization and improvement of mood. In the 1 st group after 6 months, pain was reduced in 5 patients, 14 women noted periodical pains in the back and large joints. After 6 months, stiffness index increased by 2 % ($p>0.5$), after 12 months - by 3.5 % ($p<0.05$). In the 2nd group after 6 months, general weakness and effects of asthenoneurotic syndrome were reduced. Acute pain was absent. After 6 months, stiffness index increased by 4.5 % (pO.OS), after 12 months - by 6 % ($p<0.05$). In the 3rd group after 6 months, stiffness index decreased by 1.5 % ($p>0.5$), and after 12 months - by 2 % ($p>0.5$).

Improvement of the women's state of health and positive dynamics in increased mineral density of the bone tissue registered in the 2nd group, was evidence of a positive result of complex therapy,and improvement of the bone "quality". Patients of the 1st group had a positive dynamic of treatment, but no significant changes in the quality of life were registered. In the 3rd group, reduction of bone tissue "quality" and patients' state of health was registered as affected by exogenous and endogenous factors. Biochemical indexes of bone metabolism correlated with indexes of mineral density of the bone tissue.

Conclusions

Thus, dynamic electroneurostimulation increased efficiency of complex treatment for patients with osteoporosis, has a pronounced analgetic effect, has almost no contraindications and is worthwhile for application at orthopedic and traumatology institutions.