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KINESIO TAPING AS A PROMISING METHOD OF NON-INVASIVE TREATMENT OF SCOLIOSIS IN YOUNG PEOPLE

The prevalence of postural disorders and scoliosis among children ranges from 5.0 to 46.9% [1]. At the same time, idiopathic scoliosis (IS) accounts for about 80.0–85.0% of detected cases of scoliosis. This pathology, due to its significant spread and rapid progression with the development of severe deformities, and disorders on the part of other organs and systems, accounts for 10–12% of the total structure of children's disabilities [2]. Modern literary data emphasize that idiopathic scoliosis is the most common type of lateral curvature of the spine. The analysis of the literature showed that the violation of the accumulation of peak mass before the completion of the formation of the skeleton in adolescents leads to the occurrence and progression of postural deformation, against the background of the deterioration of children's health parameters in general [2]. The intensive growth and activity of skeletal bone remodeling processes in early and teenage years lead to an increased susceptibility of bone tissue to adverse effects on the child's body, such as movement disorders, insufficient intake of calcium, and osteotropic microelements. The greatest progression of scoliosis occurs during periods of rapid growth, especially during puberty. Timely diagnosis of spinal deformity leads to the prevention of the formation of significant curvature of the spine, especially during the growth spurt, which is evidenced by the clear connection between the growth of the spine and the progression of its deformation. When the spine is curved, the deformation of the chest increases, which disrupts the work of the cardiovascular and respiratory systems. This is an important pathogenetic link in scoliosis. In connection with the significant prevalence and rapid progression of children's scoliosis, this study is relevant for the modern stage of development of rehabilitation therapy.

The purpose of the study: To increase the effectiveness of restorative treatment of children of high school age, suffering from idiopathic scoliosis of the initial stages, by the additional involvement of kinesio taping (CT).

To identify clinical features, structural and functional condition of the spine, and limitations of life activities in children of high school age, patients with IS I-II degrees.

To study the peculiarities of the impact and effectiveness of the restorative treatment when CT is included in a standardized complex in high school-aged children with I-II degrees of IS.

To conduct a comparative analysis of the results and to establish the effectiveness of the applied standard restorative treatment and treatment with the inclusion of CT of high school-age children with IS of the I-II degrees

Research methods: clinical scales, visual scales, functional (radiographic, biomechanical), systematization and coding of data, methods of variation, and multivariate statistics.

Today, rigid posture correctors are primarily used for non-surgical treatment of the initial stages of scoliosis. But it should be noted that rigid fixation is often very painful, contributes to the violation of blood circulation in the fixed part of the body, deepens the child's hypokinesia and, in general, contributes to the formation of a vicious circle of etiopathogenetic factors. Kinesio taping is a promising method of non-invasive treatment of scoliosis. In recent years, the characteristics of this technique have made it possible to study its potential use as an alternative for the correction of spinal deformities for the treatment of postural disorders in the early stages of IS. However, scientific research in this context is personal and not systematic.

The Kinesio taping method is of great interest in the treatment of pain syndromes and can affect

key links in the etiology of the disease and increase the effectiveness of treatment [3]. In recent years, the characteristics of this technique have made it possible to consider its potential application as an alternative to the correction of spinal deformities for the treatment of postural disorders and early stages of IS [4]. However, despite the clear prospects for the use of this technology for therapeutic and preventive purposes, there is little scientific research on its clinical effectiveness and mechanism of action.

Kinesio taping is especially relevant for diagnosing the early stages of diseases of the musculoskeletal system as an effective method of posture correction. This technique is based on fixing muscle fibers in certain anatomical segments, stimulating muscles by influencing proprioceptors [5]. In combination with physical therapy and Pilates techniques, scoliosis taping can help relieve back muscle tension and rehabilitate spinal injuries without immobilization.

Kinesiology tape for scoliosis is applied to the back according to the selected taping technique. The use of tape for postural disorders provides a treatment that does not limit natural movements, pain relief, long-term muscle support, painless therapeutic exercises, relaxation, and recovery.

Conclusion. In children with idiopathic scoliosis, the use of Kinesio taping is a more effective method compared to standard restorative treatment and allows them to achieve a better functional state, reduce back pain, and improve the biomechanics of the spine. For early osteopenia, these effects consist in the number of positively changed indicators (reduction in the limitation of social activity, impaired joint mobility, biochemical indicators characterizing the state of connective tissue and bones). Regardless of the treatment, the biomechanics of the spine improves in the absence of osteopenia according to goniometric indicators.

List of sources:

1. Xie, H., Li, M., Kang, Y., Zhang, J., & Zhao, C. (2022). Zebrafish: an important model for understanding scoliosis. Cellular and Molecular Life Sciences, 79(9), 1-16.

2. Weiss, H. R., Lehnert-Schroth, C., Moramarco, M., & Moramarco, K. (2022). Schroth therapy advancements in conservative scoliosis treatment. Schroth Therapy Advancements in Conservative Scoliosis Treatment (3rd Edition), 1-183.

3. Bl, A. B., Achwan, A., & Sari, N. M. (2022). Efektifitas kinesis taping until penurunan nyeri punggung bawa. Jurnal Fisioterapi dan Kesehatan Indonesia, 2(1), 135-143.

4. Buckland, A. J., Leon, C., Ashayeri, K., Cheng, I., Alex Thomas, J., Braly, B., ... & Eisen, L. (2022). Spinal exposure for anterior lumbar interbody fusion (ALIF) in the lateral decubitus position: anatomical and technical considerations. European Spine Journal, 1-8.

5. Kanno, H., Onoda, Y., Hashimoto, K., Aizawa, T., & Ozawa, H. (2022). Innovation of Surgical Techniques for Screw Fixation in Patients with Osteoporotic Spine. Journal of Clinical Medicine, 11(9), 2577.