

Interval hypoxic training in rehabilitation of children with cerebral palsy.

INTRODUCTION. The method of interval hypoxic training (IHT) is widely used around the world to increase physical endurance of athletes and to treatment the different diseases. Such producers as, «HYPOXICO», «GO2ALTITUDE», «Bio Nova 204" offer special equipment for physical training athletes and for home using to improve health.

The aims of the study is research the effectiveness of IHT in rehabilitation of children with CP.

METHODS. Clinical study was carried out at 128 children of age since 1 up to 7 years old, who received kinesiotherapy in the rehabilitation center for 2 weeks. Patients were divided into two groups: 1 group (+IHT) – 96 patients, 2 group – 32 patients. IHT have conducted on the certified installation of mountain air "BOREY" (Ukraine). Initial inspired gas contained atmospheric O₂ (21%). The inspired O₂ fell to 12% O₂ during 3-4 days. Every session consists of for 5-7 min period of 12% O₂ inspiration with 5 min interval period of room air inspiration. IHT procedure is formed of 3-4 sessions. Total course of IHT consisted of 10-15 procedures duration 30-40 min.

Methods: clinical, laboratory and instrumental methods, life quality evaluation using PedsQL questionnaire, «Cerebral Palsy» module.

RESULTS. All children easily tolerated the hypoxia periods without any side effects. The best physical activity is observed in the first group, children complained less on fatigue during kinesiotherapy. The physiological responses IHT are to increase the transport of oxygen to cells by improving the function of the respiratory and cardiovascular systems, the development of biologically active substances (HIF-1 factor, VEGF-factor, erythropoietin), normalization of heart rate variability, improving blood flow to all organs and tissues.

CONCLUSION: IHT is recommended in the complex rehabilitation of children with CP for increasing of exercise tolerance during the activity, such as kinesiotherapy, ergotherapy, walking. The further development of the methodology and technical support will allow IHT to emerge as an important method for improving of the adaptive capabilities of the patients.