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TRANSCRANIAL MAGNETIC THERAPY IN TREATMENT OF ADOLESCENT OBESITY

Obesity is a common and increasing problem in modern society. According to WHO, there are 1.8 bln. people in the world who are either overweight or obese. The growing concern is the increasing number of overweight children as these children and adolescents have a strong predictive pattern for the development of overweight and obesity in adulthood. Pathogenic pattern underlying obesity is associated with increased food intake and sedentary lifestyle. There are many theories providing an explanation for this pattern: the idea of disturbances in the regulation of energy balance, or the role of intestinal microbiota. One of the causes of obesity is dysfunction of hypothalamic structures that result in increased appetite and eating disorders. Evidence suggests the effectiveness of transcranial techniques such as transcranial magnetic therapy (TMT) with an alternating magnetic field. This is because influences of TMT occur at the hypothalamic level. The aim of the given study was to assess the effectiveness of TMT in the management of eating disorder and in the possibility of weight loss in obese adolescents. 80 patients aged 14-18 with second and third degrees of obesity were examined. The 5-score based questionnaire was developed to subjectively assess food craving. Indicators of lipid and carbohydrate metabolism were assessed as well as hormone panel, and the results of EEG and CIG. TMT with an alternating magnetic field, which scan rate was 1-12 Hz, was performed using the device "AMO-ATOS" (OOO"TRIMA", Saratov). Results: the children complained about increased appetite and blood pressure. Blood biochemical analysis findings showed elevated levels of cholesterol, triglyceride, LDL, and immunoreactive insulin. Some children had elevated levels of TSH and cortisol. CIG results showed changes in brain biological and electrical activity and marked prevalence of activity of subcortical nerve centers (ASNC) in 77 % of adolescents. A month after the treatment with TMT stimulation the number of adolescents with normal frequency and α - and β -rhythm range increased by 2-2.5 times, centralization index decreased by 2 times which enabled to decrease hunger, craving for food and the loss body weight by 36%. Thus, TMT stimulation resulted in normal bioelectrogenesis of the brain and endocrine profile. Alongside normalization of metabolism and body weight loss were observed.

Biography

Andrei Averianov has been graduated from The Saratov State Medical University, Russia as Medical Doctor, with the specialty Pediatrics in 1991. Later on he obtained his post-graduation from State Medical University n.a. V.I. Razumovsky of Saratov, Russia with subjects Pediatrics – PhD (1996) and Russian State Academy of Postgraduate Education, Moscow with subject Pediatric Endocrinology (1997). He started working at the Saratov State Medical University n.a. V.I. Razumovsky in 1996, where he has continued his research in Pediatric Endocrinology, Diabetology. Professor Andrei Averianov is the member of Russian Public Academy of Pediatrics, EPA-UNESPA, The Union of Pediatricians of Russia.

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