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HYALURONIC ACID USE IN EXPERIMENTAL INVESTIGATION IN DIFFERENT SURGICAL SITUATIONS ON RATS

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Adhesive disease (AD) is defined as a condition in which scar tissue binds adjacent organs to one another. AD accounts for 2.4% of the total number of operations in abdominal surgery. The most common manifestation of adhesive disease in children is adhesive intestinal obstruction, the frequency of which does not tend to decrease, and the number of relaparotomies associated with it increases. Adhesions may also form secondary to inflammatory conditions of the abdomen in the absence of prior abdominal surgery or as a sequela of abdomino-pelvic radiation. Although the majority of patients with intra-abdominal adhesions remain asymptomatic, a clinically significant subset of patients will develop “adhesive disease”, a symptomatic state ranging from mild and/or vague to highly distressing and even life-threatening symptoms. Anti-adhesive barrier agents (hyaluronic acid (HA)) have been shown to reduce the complications associated with adhesions in pediatric surgery. However, today such drugs are rarely used.

In experimental investigation we use barrier compounds and preventive surgical methods for intraperitoneal adhesions treatment. The purpose of investigation is to study the use of hyaluronic acid for the treatment and prevention of abdominal adhesions in rats and long-term consequences.

Distribution of operated rats with HA use (n=30): first group – 10 rats with intestinal anastomosis, second group – 10 rats with drying of small intestinal wall, third group – 10 rats with mesenteric vessels suturing. Terms of relaparotomy and supervision for them were from 3 to 5 months without dividing them according to the age and gender.

In I group (10 rats) 7 (70%) rats developed adhesion syndrome in the first 3 months after surgery. In the II group (10 rats) adhesion syndrome over 3 months postoperative period was registered in 5 rats (50%). In the III group (10 rats) over 3 months postoperative period 2 rats (20%) were found. Due to statistical data the effectiveness of hyaluronic acid for the purpose of treatment of adhesions of the abdominal cavity in experimental investigation at different surgical methods of treatment and intraoperative complications is confirmed.

For treatment of adhesions of the abdominal cavity HA increases fibrinolytic activity of the intestine, which is a factor in preventing of fibrinous layers organization in connective tissue adhesions. Solution of hyaluronic acid is an effective remedy for adhesive intestinal obstruction in children and is accompanied by a relapse of AD in 7 (70%) rats with intestinal anastomosis, 5 rats (50%) with drying of small intestinal wall and 2 rats (20%) with mesenteric vessels suturing.

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THE EFFECT OF POLYUNSATURATED FATTY ACIDS IN CHILDREN WITH ATTENTION DEFICIT / HYPERACTIVITY DISORDER

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Research of cognitive sphere of children shows that reduction of attention, memory and learning ability are more pronounced at low level of certain food micronutrients. A special role in the development and functioning of the brain play a long chain polyunsaturated fatty acids, namely omega-3 and omega-6 fatty acids. The importance of them to infant is evidenced by their high content in brain tissues (35-40%) and retina (60%). Lack of it causes changes in neuroanatomy, development of neurochemical and neurophysiological disorders. The age of manifestation of these disorders may be different. The deficiency of omega-3 and omega-6 fatty acids manifested as specific cognitive disorder with lower speed solution of problem or decreased concentration of attention, impaired memory etc.

The aim of the study was to value the effect of polyunsaturated fatty acids in treatment of children with attention deficit / hyperactivity disorder.



It was examined 24 children with attention deficit / hyperactivity disorder (ADHD) aged 3-9 years. There were 17 (70,8%) boys and 7 (29,2%) girls. The diagnosis was established based on complaints of patients and their parents, data of anamnesis of life and illness and objective examination of children. Patients with ADHD had difficulty in concentration of attention during learning the materials. They made mistakes due to carelessness, do not pay attention to comments and do not listen to explanations. Children showed excessive mobility, agility, restlessness, made a lot of unnecessary movements instead of focusing on learning and performing tasks. Such behavior created problems both at school and at home. Children with ADHD had low self-esteem and it was difficult for them to make new friends.

The final diagnosis of ADHD was made by 3 groups of criteria (recommended by American Psychiatric Association): criteria of inattention, criteria of hyperactivity and criteria of impulsivity. It was necessary to score from 6 to 9 points from each.

In addition to behavioral disorders, 5 (20,8%) children had speech disorders (they were badly spoken or badly pronounced words,) and 3 (12,5%) children had hyperkinetic disorders (eye blinking, head jerking).

Electroencephalography showed increased theta waves in 3 patients and decreased beta waves in 5 individuals. In the rest 16 children, no pathological abnormalities were detected by electroencephalography examination.

All children with ADHD were divided into 2 groups. The first group of patients (14 children) was treated by nootropics with sedatives and second one (10 children) got combination of nootropics with sedatives and omega-3. In one month time it was mentioned relatively less motor activity, improving attention, less impulsiveness in children of both groups. In three months in 6 (42,9%) children from the first group were found restoration of previous manifestations of ADHD. In second group, in only one (10%) child was mentioned the same behavioral disorders as before treatment, that let as made a conclusion about the effectiveness of addition to standard therapy of ADHD of polyunsaturated fatty acids. All children, except medical treatment, were recommended psychological correction.

Thus, adding of polyunsaturated fatty acid omega-3 to treatment of children with ADHD has a positive and prolonged effect. Behavioral disorders such as difficulty in concentration of attention, excessive mobility, restlessness, impulsiveness decreases and held for a longer time in comparison with patients who were not taken omega-3.

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THE INFLUENCE OF THE HEALTH SAVING SCHOOL PROGRAM ON SLEEP CHARACTERISTICS IN CHILDREN

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Healthy sleep is an important physiological process for children growth and development especially in school age during educational loading. The good sleep must have sufficient duration, appropriate timing, adequate quality and absence of disturbances. Sleep problems are prevalent in childhood, and aspects of insomnia, such as difficulties with sleep onset, night-time awakening and hard morning awakening, are among the most common no respiratory sleep problems during the school years. Some of the consequences of poor sleep in adolescents are behavioral problems, impaired learning and school performance, sports injuries, mood deviation and emotional dysregulation. Adolescence lack of sleep may be related to high-risk behaviors such as alcohol and drug use, suicidal behaviors. Sleep is critical for children and is connected with intensity of physical exercise, duration of staying on open air. Many programs were developed to preserve the health of school-age children, methods of correcting their disorders and primary prevention measures: health education, health promotion and disease prevention.

The purpose of the study was to analyze the effect of health-saving programs elements in the educational process on the sleep of school-age children. In comprehensive school in Chernivtsi region the elements of were applied, namely: gymnastics, a regular walk on open air during the