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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 (hyalurinic 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 mesenterical vessels suturing. Terms of relaparotomy and supervision for them were from 3 to 5 month 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 month postoperative period 2 rats (20%) were found. Due to statistic 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 mesenterical 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.