MORPHOLOGICAL CHANGES IN THE KIDNEYS WITH SMALL BOWEL OBSTRUCTION IN THE JUNCTION IN THE DUODENUM

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Abstract*. Acute small bowel obstruction (ASBO) accounts for 1.2–14.2% of all emergency surgical procedures [1]. In 30% of patients with acute obstruction of the small intestine, various organ and system dysfunctions develop with complications. [2]. According to modern literature, multiple organ failure syndrome (MOFS) is observed in severe cases such as sepsis, hemorrhoids and infectious toxic shock, severe combined trauma, peritonitis, coma, etc. [3,4,5]. In AOC, cardiovascular system (60.2%), central nervous system (60.2%), kidneys (60.2%), liver (56.1%) make up. In acute surgical diseases of abdominal organs complicated by peritonitis, AOC can develop both during the pathological process itself, and in the postoperative period, and after eliminating the cause of the disease.*

Keywords: *acute small bowel obstruction (ASBO), multiple organ failure syndrome (MIFS), acute kidney injury (AKI), acute intestinal obstruction (AIO).*

Introduction: In Russia, 1.2 to 14.2 percent of all cases of acute surgical diseases of abdominal organs have acute intestinal obstruction (ulcer), and its incidence is 5 per 100,000 population. However, acute small bowel obstruction (SIB) accounts for more than 60% of all IBD cases. The mortality rate with complications from peritonitis in IOC is 25-70%, and the mortality rate reaches 100% with the development of toxic-septic shock (TSSH) and multiple organ failure syndrome (MOFS) in the last stage of peritonitis. Therefore, the task of improving the results of treatment of patients with ASBO is urgent for modern practical medicine, especially surgery, anesthesiology and intensive care. According to a number of authors, the incidence of kidney dysfunction in ASBO ranges from 9.5 to 60.2% and causes death in 45-100% of cases [6]. The presence of multiple organ failure significantly worsens the prognosis of patients with OIT, so the mortality rate remains high and according to different authors is 11-34, 8%, and in elderly people Increases to 70-90%. Research conducted in recent years has shown that any urgent pathology in surgery, including ASBO, leads to functional impairment of kidneys and can develop acute kidney injury (AKI). According to the authors, the frequency of the latter is observed in 9.5-60.2% of patients with ASBO and causes death in 45-100% of cases. Any impairment of kidney function has a negative impact on the prognosis of the disease. Any impairment of kidney function has a negative impact on the prognosis of the disease. Acute kidney injury is manifested by an acute, reversible, partially reversible or irreversible impairment of the filtering and excretory functions of the kidney, rapidly increasing azotemia, and severe water-electrolyte disturbances.

Materials and methods: Acute renal failure (ARF), which occurs with various types of acute obstruction of the small intestine complicated by peritonitis, is classified as perennial. Central hemodynamic disorders, pathomorphological construction of all joints of the hemocirculation channel in the kidneys, and changes in the rheological properties of blood are the main causes of perennial ARF. Kidneys play an important role in the homeostasis of the body. In

the existing literature, the study of the renal tubules in acute kidney injury, its development with ASBO, is covered in sufficient detail, but the changes in the kidney balls were not sufficiently reflected in previous studies. There are almost no works that have studied the pathomorphological mechanisms of renal glomerulus injury in the dynamics of ASBO disease development at the junction of the small intestine to the duodenojejunal part [3]. The low effectiveness of therapeutic measures is largely due to the lack of solving a number of problems of the pathogenesis of acute kidney injury with acute small bowel obstruction. Given that the pathomorphological and functional changes in the kidney balls can be reversible, partially reversible and irreversible, the results of ASBO for acute small bowel obstruction are also different: recovery, transition to chronic kidney disease, death. Summarizing the collected literature data, in the dynamics of the development of acute obstruction of the small intestine, it is important to determine the morphofunctional and pathomorphological changes in the kidney balls, to determine the possibility of reversal of these changes and recovery of kidney function. Predicting the probability of death and kidney complications in the early and late postoperative periods, predicting the outcome of the disease. In the development dynamics of acute small bowel obstruction in the clinic, it is not possible to study the morphofunctional changes in the renal corpuscles in the biopsy material, therefore, the basis of our work is experimental modeling of various acute small bowel obstructions in the duodenal passage, then is a study of the morphometry of renal glomeruli and arterial capillary vessels. kidneys, microscopy of kidney structures is carried out at each period of the experiment.

Results and their analysis: Study of the morphological features of the kidneys in the area of the duodenojuenal transition in case of intestinal obstruction and in normal conditions.

1. Morphological changes in the kidneys in cases of intestinal obstruction at the level of the duodenojejunalis flexure, comparison and evaluation of their characteristics. 2. Study of the level and risk of renal dysfunction in the case of intestinal obstruction in the area of the duodenojejunal transition of the small intestine. 3. Examination of changes in the composition of blood in the area of the duodenojuenal transition in case of bowel obstruction and in normal conditions.

- laboratory and instrumental diagnostics (identification of endotoxicosis, coagulopathy, hepatorenal diseases, intestinal syndrome and protein-energy deficiency)
- thesioscopic monitoring of morphological changes in blood plasma.
-staining of hematoxylineosin micropreparations
- immunohistochemical method
- Variational statistics method using Strelkov tables and Student t-criterion.

Conclusion: The results of the study of the macro and microscopic structure of kidney cells and its structural changes help to reveal the complex mechanism of immunological processes that occur in the body in terms of age under the influence of various pathogenic factors. The study of structural changes in rat kidneys in normal and 12-intestinal passage with experimental small intestine obstruction allows to identify the most vulnerable critical periods, which are very important in the implementation of preventive measures.

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