The results of the investigations conducted substantiate the reasonability to work out new diagnostic approaches, prognostication of the course and treatment of acute pancreatitis with genetically determined disorders of the intracellular trypsin inactivation.

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THE ROLE OF PROTEOLYSIS IN DEVELOPMENT OF INTESTINAL CONTRACTILITY DISORDERS

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It is known, that the proteolytic activity of blood plasma is important not only for protein metabolism, but also in maintaining of the local mechanisms of tissue protection providing protein structures fragmentation of own tissues during their life and extraneous proteins which are components of infectious agents. However, in conditions of pathological process increasing of proteolytic activity can lead to resource exhaustion, which could provide an adequate immune protection. In addition, activity changes of proteolytic systems have a huge influence on the course of the majority of biochemical processes and can affect significantly the neurohumoral regulation of the digestive system.

Proteolytic activity plays an important role not only in the mechanisms of different disorders of intestinal functions after surgical intervention, but is an essential for the regulation of regeneration processes. The growth of this index is the reflection of the proteolysis processes and it correlates with the level of the middle mass molecules which is indicative of the endotoxemia presence.

Thus, the complex assessment of proteolytic activity can be performed by means proteolysis determination using azocasein, azoalbumin and azokol.

These parameters are important not only before surgical intervention but during the postoperative period. The dynamics of these parameters may be indicative of endotoxemia severity and disorder of neurohumoral regulation of different organs and regeneration processes.

In this connection, we have studied the proteolytic activity parameters of blood plasma in 123 surgical patients who formed two groups according to the presence or absence of postoperative disorders of intestinal contractile ability.

It was established that proteolytic activity parameters differed significantly in both groups of patients before surgical treatment. The proteolytic activity by azoalbumin in the patients of the first group who had not intestinal contractility disorders after surgery was significantly lower than in the second group of patients who had postoperative intestinal paresis and postoperative ileus (1.48±0.231 vs. 1.88±0.171 E440/ml/h; $p<0.05$). This was indicative of a significant fragmentation of low molecular weight peptides in patients of the second group that manifested by expressed signs of endotoxemia as a result of excessive proteolytic activity of low molecular structures.

Postoperatively, the dynamics of this parameter was diametrically opposed to preoperative period. Proteolytic activity by azoalbumin in first group of patients had statistically improbable growth trend, while the second group of patients had a significant decrease of this parameter (from 1.88±0.171 to 1.64±0.172 E440/ml/ h; $p<0.05$). This decrease of proteolytic activity to low molecular weight structures shows effectiveness of prescribed anti-enzymatic therapy and reduces the manifestations of endotoxemia in patients of the second group which was confirmed by laboratory and other biochemical parameters.

The proteolytic activity by azocasein before surgical treatment in the second group of patients was also significantly higher than in the first group of patients (1.74±0.242 vs. 1.08 ± 0.113 E440/ml/h; $p<0.05$).

It is important that after surgical intervention in patients of the first group, this parameter was changing statistically unreliably and in patients of the second group it decreased reliably (from 1.74±0.242 to 1.22±0.151 E440/mL/h; $p<0.05$).

Reduction of high proteolytic activity to the middle molecular weight peptides in these patients can restore balance in the regulatory systems, first of all in the humoral ones, which positively affects on the recovery of motor-evacuational function of the intestine.

Proteolytic activity by azokol in both groups of patients also was differed before surgery. In the first group this parameter was significantly higher than in the second one (0.68±0.071 vs. 0.40±0.053 E440/mL/h; $p<0.05$). The decrease of proteolytic activity to collagen's structures in the second group of patients shows these pathogenic mechanisms which may be implemented in disorder of the motor-evacuational function of intestine in the postoperative period due to changes of regenerative processes in the intestinal wall.

Postoperatively, this parameter in the first group of patients was practically unchanged, while in the second group of patients it increased significantly (from 0.40±0.053 to 0.58±0.114 E440/mL/h; $p<0.05$). In our opinion, the excessive activation of proteolysis to high molecular weight peptides is one of the basic mechanisms of the neurohumoral regulation disorder of intestinal contractility. The progression of these processes in the postoperative period may lead to the development of enteroplegia.

Therefore, the studies testify the important role of proteolytic activity of blood plasma in the pathogenesis of postoperative bowel dysfunction. Excessive activation of proteolysis to low molecular weight structures can serve as a factor of endotoxemia in these patients and can provide morphofunctional disorders in the wall of the intestine. The lack of proteolytic activity is indicative of depletion of enzymatic systems caused by cascading growth of fragmentation products.