Metabolism in small intestine tissue after enterotomy

Oxana Mazur
Danylo Halytsky Lviv National Medical University, Ukraine

The energy supply for the reparative processes in small intestine in early postoperative period is mainly realized via the abrupt rise of the activity of enzymes of tricarboxylic acids cycle (TAC) – cytoplasmic malate dehydrogenase and succinate dehydrogenase. Simultaneously the quantity of pyruvate almost 8-fold diminishes as well as lactate. The lactate dehydrogenase activity slightly increases. The dynamics of glucose-6-phosphate dehydrogenase activity merits special attention as it abruptly diminishes during the first 7 days following enterotomy, and significantly rises on the 14th day. Thereby, the activity of TAC enzymes rises significantly in the small intestine in early postoperative period. The growth of activity of malate dehydrogenase boat-mechanism is provided with corresponding accrual of glycolysis, which substrates are used in TAC. Beginning with the 7th day after operation the activity of malate dehydrogenase diminishes approaching basic values and gets stabilized, whereas succinate dehydrogenase activity in 2 weeks rises again: the activity of lactate dehydrogenase also increases, pyruvate slightly increases and according to that the level of lactate diminishes, what in general could be considered as a development of adaptation compress reactions controlled to the gradual reconstruction of the cell metabolism. Thereby, the grand metabolic problem, what arises against the organism in early postoperative period, is solved via the boundary effort of anaerobe bioenergetic mechanisms. Because of that the energy-consuming of the processes, which are going on in the small intestine wall, is very high, the activity of biosynthesis diminishes to the critical level.

Biography

Oxana Mazur completed her PhD degree in Biochemistry in 2008. Currently she investigates the processes of energetic exchange and lipid peroxidation in the diseases of the gastrointestinal tract.