Materials of Conferences

BLOOD CIRCULATION LEVEL IN GASTRIC WALL IN EXPERIMENT

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The state of gastric wall and vagus nerve blood circulation was investigated rheographically and by the method of hydrogen clearance according to Smith D.R. (1977) in 17 animals (dogs). The main group consisted of 12 dogs, the control one – of 5 dogs. The animals' average age was 3,4 years, their weight – 6,8±0,5 kg. The methodology is based on the polarographic registration of the tissue hydrogen clearance. The registration was carried out through platinous and silver-chloride electrodes introduced into the gastric wall in the course of operation, then – once a day. The main group consisted of experimental animals, which submaximal doses of substrate antihypoxant "reamberin" in combination with prostaglandin were applied to. The given preparations were not used in the control group. The investigation purpose was to define the role of the substrate antihypoxant and prostaglandin in the gastric blood circulation disorders prophylaxis. It was found out that the gastric wall blood flow value (B) in both groups for the moment of the operation performance were high enough and were registered as 185±15,3 and 175±16,3 ml/min /100. Thereat, these values were a bit higher in the main group. In the postoperative period a significant blood flow index decrease was registered in both groups in the space of an hour after suturing. The highest decrease was registered in the control group – up to 59,5 ml/min /100 (2,9-fold), in the main group - 79,8 ml/min/100 (2,3-fold). The analysis of gastric wall blood circulation establishment dynamics in the following seven days testified that the process intensity in the groups differed in the degree of approximation to the norm. In the main animal group the values changed with a greater intensity – on the first day after the operation already B = 126,2±42,1 ml/min /100 (or 46,5% of the original one). Later a relatively uniform blood flow level increase was found out in both groups and with the same value increase. However, these values' increase rate downtrend in both groups was registered since the 4th day. It was found out that a higher blood circulation in the gastric wall in the early postoperative period was one of the conditions for the gastro-intestinal tract motor function recovery. The application of substrate antihypoxant and prostaglandin increasing the level of tissues' oxygenation and microcirculation improves the gastric blood flow indexes both during the operation and in the postoperative period.

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BLOOD CIRCULATIONS LEVEL IN VAGUS NERVE AFTER GASTRIC OPERATION

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The state of blood flow in the vagus nerve gastric branches was studied in 17 animals (dogs). The main group consisted of 12 dogs, the control one – of 5 dogs. The animals' age was from 2 to 5 years, they weighing 6,8±0,5 kg. The blood flow was defined in the nerve stem of the nervus Vagus by the hydrogen clearance method according to Smith (1977). Active electrodes were introduced through an epineurium puncture hole subepineurially. The introduction and fixation were performed in the enlargement of a surgery microscope. The blood flow was calculated according to Aukland (1964). The main group consisted of the animals, which submaximal doses of substrate antihypoxant "reamberin" in combination with prostaglandin were applied to. The specified preparations were not used in the control group. The n. Vagus blood flow level comparison in the experimental animals testified that an analogous picture was traced in the gastric wall. In the main group the blood flow values were higher during the operation, than in the control one (66,2 and 46,2 ml/min /100 accordingly). This value fall was significant enough after the operation. Especially in the control group – up to 22±3,1 ml/min /100 (that is 2,1 times less, than the original one). Such a decrease of the blood flow level was registered in the main group as well, but the given parameter value didn't fall lower, than the average mark of 32,1±3,1 ml/min/100. The dynamics of blood flow establishment in the n.Vagus testified that the given process took course most intensively in the nerve tissue on the first day after the operation. Then a relative retardation of the establishment rate was registered. On the average, during a day the value increases by 1,5 ml/min /100. By the end of the investigation the average values of the blood flow volume were at the level of 41,1±6,1 in the main group, and 34,1±6,0 ml/min /100 – in the control one. The findings' analysis testifies that the blood flow values are not constant in the course of the experiment; they are subjected to significant fluctuations. These fluctuations are unidirectional both in the animals with the prophylactic application of the substrate antihypoxant and prostaglandin and without it. The blood flow decreases considerably in nerve stems after the operation irrespective of the original level (twice). The most low blood flow values are registered in the group of the animals, which didn't receive the substrate antihypoxant in combination with prostaglandin.

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