



obtained from the vivarium of Bukovinian State Medical University. The experiment included 50 white rats weighing 200-250 g without obvious signs of the disease and with normal rates of laboratory tests (complete blood and urine). The clinical material included 45 patients who were treated at the Emergency Clinical Hospital of Chernivtsi with various forms of acute destructive cholecystitis. Among the surveyed patients there were 11 men (24.44%) and 34 women (75.56%). The mean age of patients was for men – 56.69 years, for women – 53.84 years.

Obtained results were indicative of the fact that intraoperative bile duct sanitation for three times by introduction of antibiotics prevented the development of septic complications like suppurative cholangitis in the early postoperative period. In addition, development of local septic complications, which are sources of generalized sepsis, can be prevented by early surgery in the period of 48 hours after hospitalization of patients.

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COMPARATIVE DYNAMICS OF CHANGES OF INTESTINAL SUTURES'S MICROBIOTA UNDER THE CONDITIONS OF THEIR LEAK DEVELOPMENT

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Intestinal sutures leak (ISL) is an urgent problem in abdominal surgery related with the increase of duration of inpatient treatment and rehabilitation, frequent disability and mortality, the rate of the last one is up to 50% in the case of postoperative peritonitis development. A microbial contamination of the sutures line is one of the initiative factors of ISL occurrence. However, the patterns of local changes of the intestinal anastomosis microbiota and its impact on healing of junction zone remain obscure.

Objectives: to investigate the peculiarities of dynamics of quantitative and qualitative changes of microflora composition in the region of rats' intestinal sutures on the experimental model of their leakage.

The research was carried out on 80 albino nonlinear male rats, weighing 180 ± 20 g, they were undergone the resection of caecum with suturing the defect of intestinal wall by means of interrupted sutures (polyamide 5-0). ISL was modeled by the way of excessive mobilization of the junction area and twice as much rare application of sutures. Bacteriological tests of smears from line of the sutures were performed aseptically during chronological periods (12, 24, 48, 72 hours and 5 days following surgical interference). Indices of microbial count (MC) and numbers of the most significant types of intestinal microflora were determined: *E. coli*, *Enterococcus* spp., *Bacteroides* spp., *Clostridium* spp. were determined in concentrations equal to Lg CFU/ml. The relevance of changes in the compared groups was determined by Mann-Whitney t-test and Pearson's correlation coefficient (r).

It has been established that the MC index was statistically higher ($p < 0,001$) in the animals of experimental group in comparison with the control data during the entire period of observation. Etiologically significant concentrations of microorganisms (> 5 Lg CFU/ml) were detected in the sutured tissues of the intestine in the animals with AL beginning with 24 h. after surgery to the end of the fifth day their total number increased up to $7,10 \pm 0,038$ Lg CFU/ml. An exponential increasing of MC index was observed in case of unfavourable postoperative period, but the decrease of microbial contamination of the sutures line was proved in the animals of control group at the end of observation ($p < 0,001$).

While analysing the dynamics of changes of the population structure of microbiota in the region of applies sutures it has been established that in 12 h. the increase of MC was mainly due to the growing number of *E. coli* ($r = +0,98$). The macroscopic signs of biological leakage of junction zone were friable adhesions involving infiltrated flushed omentum, loops of small intestine and adjacent parts of the colon. In 24 h. powerful positive relation was detected between the increasing MC and the number of *E. coli* ($r = +0,97$) and the moderate negative one – between the index MC and the number of *Enterococcus* spp. ($r = -0,37$). In 48 h. increasing MC was correlated with increasing numbers of *E. coli* ($r = +0,97$) and *Bacteroides* spp. ($r = +0,37$). In 72 h. a moderate positive relationship was detected between the index MC and the number of *E. coli* ($r = +0,32$) and a negative one – to the number of *Bacteroides* spp. ($r = -0,38$). In 5 days the increase of index MC was in a moderate positive relationship with the numbers *Bacteroides* spp. ($r = +0,39$) and *Clostridium* spp. ($r = +0,41$) and in a negative one with the numbers of *E. coli* ($r = -0,49$) and *Enterococcus* spp. ($r = -0,53$). The mechanical disruption of junction zone was registered in all animals of the experimental group during this period in the form of necrosis of the bowel wall in the area of applied sutures on the background of separated or general accumulation of fibrinous-purulent fluid in the abdominal cavity.

An exponential increase of the total quantity of microorganisms with the changes of the population structure of intestinal microflora occurs in the sutured tissues of intestine under the conditions of anastomotic leakage. In the early terms (12-24 h. after the sutures application) the increase of the microbial number is mainly caused by the number of an autochthonous microflora (*E. coli*) and later (after 3-5 days of the anastomotic leakage initiation) – by the increased number of obligate anaerobes (*Bacteroides* spp. and *Clostridium* spp.) along with the decreasing of concentration of facultative anaerobic microorganisms (*E. coli* and *Enterococcus* spp.). Such dynamics of changes in quantity and species composition of microbiota in the area of the line of sutures affirms that the disorder of colonization resistance of the intestinal tissues due to synergy and antagonistic effects of some representatives of intestinal microflora under conditions of anastomotic leak development.