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**NEW APPROACHES TO LABORATORY AND PHONOENTEROGRAPHIC MONITORING OF THE  
INTESTINAL MOTILITY IN PATIENTS WITH POSTOPERATIVE ILEUS**

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Postoperative intestinal paresis remains unresolved problem of abdominal surgery. Its complication causes significant disturbances of homeostasis, metabolic disorders, and as a result can cause postoperative peritonitis. Unfortunately, nowadays methods of predicting of postoperative intestine motility disorders are not entirely developed, which stops the development of preventive methods.

The study involved 57 patients, the hollow organs of the digestive system of whom were operated on in planned and urgent order. The patients were divided into 2 groups. The first group consisted of 25 patients, who had no postoperative intestine dysmotility. The second group consisted of 32 patients, who had signs of postoperative parietic intestinal ileus. All the patients were examined in the pre- and postoperative periods by conducting clinical, laboratory and instrumental examination, including phonoenterography. Indicators of fibrinolytic and proteolytic activity were identified in all patients. Statistical analysis of the obtained indices was conducted by Student and Fisher criteria.

The diagnosis of postoperative intestinal paresis was confirmed on the basis of the absence of peristalsis, stool and gas on the third day after the operation. The results of modified phonoenterography were also used in the second or third day after operation to reveal signs of normalization of contractile intestine ability or predict the development of dynamic ileus. It was found, than results of phonoenterography of the first group patients had low magnitude and frequency of peristaltic waves on the second day after the operation, however, the dynamics showed the increase of the number and amplitude of peristaltic waves, decrease of interval between waves.

In the second group of patients after 2-4 days after surgery peristaltic waves were not identified, and the fonoenterogramm showed only some contractions of intestine. This indicates, that phonoenterography is an informative method of early diagnostics of early postoperative ileus.

We studied serotonin level in blood plasma to identify possible causes of disturbances in bowel contractile ability of the patients. It is known, that serotonin acts on serotonin receptors in the postsynaptic membrane, causing contraction of the muscular layer of the bowel wall, which in its turn causes peristalsis. It was found that in the patients without dysfunction of the contractile intestine ability in the postoperative period the level of serotonin was significantly higher compared to the group of patients with postoperative intestinal paresis ( $p < 0.01$ ).

This shows that one of the reasons of intestine dysmotility in the postoperative period is insufficient blood plasma concentration of serotonin. Using certain treatment strategy the results of treatment have been greatly improved, the incidence of postoperative intestinal paresis has been reduced, and in case of its development the intestine motility has been restored.

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**GLAUCOMA. CONSERVATIVE TREATMENT: SIDE EFFECTS**

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Beta-blockers are effective local agents, the average peak of intraocular pressure (IOP) is reduced by 25%, and the average deflection is reduced by 20% using non-selective agents. Unfortunately, no studies classify side effects of beta-blockers. The objective of the study was to identify and classify the side effects of beta-blockers in the treatment of primary open-angle glaucoma.

Ocular side effects at several levels of morbidity are being analyzed in the research: 1. Very common (10% or more); 2. Common (1% to 10%); 3. The frequency is not reported. Contraindications for beta-blocker usage include asthma, severe chronic obstructive pulmonary disease, bradycardia, a cardiac block of the second or the third-degree, and congestive heart failure.

Clinically, it is not reasonable to use this class of drugs for any patient with asthma, a heart rate less than 55 beats per minute, who has or had heart failure or used antidepressant medications. A positive history of cardiac problems or symptoms is usually present in patients with heart failure and is greater than the first degree of heart block.

Although cardiac and pulmonary side-effects are the most obvious, in a large review, the problems of the central nervous system were the most frequent; they were ranging from hallucinations to depression and general feeling of malaise.

These side-effects may be much more difficult to identify. In the majority of patients, the usage of this drug may cause or lead to exacerbate various problems. In this case, it is necessary to stop the usage of the drug until the symptoms improve. The elderly appear to be at the greatest risk for beta-blocker side effects. A conscious effort is required to identify susceptible patients (in line with the overall philosophy of individualization of therapy and specific assessment of drug effects). Other systemic side effects of topical beta-blockers are rare, including the dermatological problem of alopecia. Locally, beta-blockers are well tolerated, although it has been reported about corneal hypesthesia and epithelial changes.

In addition, some researchers believe that the usage of these drugs should be avoided by patients with diabetes, because the symptoms of hypoglycemia may be masked and those of myasthenia gravis may be exacerbated.



Also, it has been suggested that patients who undergo allergy tests or desensitization should not use beta-blockers of any kind, even local agents, because beta-blockade may make resuscitation more difficult if anaphylaxis occurs. The usage of beta-blockers in neonates is excluded because of the apnea development. The less clear is the fact that beta-blockers can have an undesirable effect on plasma lipids.

Among analyzed ocular side effects were: 1. Very common (10% or more): Burning/stinging sensation (up to 38%), blurred/abnormal vision (up to 25%). 2. Common (1% to 10%): Conjunctival hyperemia, foreign body sensation, keratitis, conjunctivitis, cataract, decreased visual acuity. 3. Frequency that is not reported: Itching, tearing, redness, blepharitis, dry eyes, decreased corneal sensitivity, corneal erosion, refractive changes (due to withdrawal of miotic therapy in some cases), diplopia, ptosis and choroidal detachment following filtration surgery, discharge (e.g., crusting), foreign body sensation, cystoid macular edema, pseudopemphigoid.

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### **IMPROVEMENT OF ANTIOXIDANT STATUS IN SMALL INTESTINE DURING ACUTE NECROTIZING PANCREATITIS**

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Septic complications are leading causes of unfavorable outcome during acute necrotizing pancreatitis (ANP). Disorders of mucosal metabolism proposed as main mechanism of intestinal hyperpermeability and subsequent bacterial translocation phenomena. Therefore, aim of our research was to study the disorders of antioxidant status during of ANP and evaluate possible positive influence of N-acetylcysteine (NAC) on such events.

In 120 Wistar rats acute necrotizing pancreatitis was induced by intraperitoneal injection of 250 mg/100 g of 20% L-arginine solution twice during 1 hour period. NAC was infused 70mg/kg per day in N group, similar amounts of normal saline – in controls (C). Changes of pro- and antioxydative status, connective tissue markers, proteolytic activity in small intestinal mucosal layer have been investigated during first 72 hours of AP.

In C group ANP was accompanied by activation of oxidant stress. Concentration of diene conjugates and malonedialdehyde increased since 12 hours after AP initiation and reached maximum in 24 hours: levels exceeded values of intact rats on 22% and 10% accordingly ( $p < 0,05$ ). Their neutralization occurred after 72 hours as a result of activation of antioxidant defense: superoxide dismutase and the catalase concentrations has been raised in 1,6 and 1,7 times ( $p < 0,05$ ). Administration of N-acetylcysteine increased amount of reduced glutathione in mucosal layer of small intestine, decreased level of its injury by free oxygen radicals as well as ameliorated inflammation process in pancreas during 24-48 h.

Deficiency of reduced glutathione during early terms of ANP is followed by toxic action of oxidants on pancreas and small bowel mucosae. Administration of NAC in dose of 70 mg/kg improves oxidant stress in small intestinal mucosae within 24-48 h.

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### **DYNAMICS OF SPECIES COMPOSITION CHANGES OF LEADING PATHOGENS AND THEIR ASSOCIATES OF CHRONIC WOUND BIOFILMS**

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Infection can lead not only to chronic wounds but also to gangrene, loss of the infected limb, and death of the patient. More recently interrelations between bacterial colonization and increases in reactive oxygen species leading to formation and production of biofilms have been shown to generate chronic wounds. Similar to ischemic bacterial colonization infection damages tissue by causing a greater number of neutrophils to enter the wound site. In patients with chronic wounds, bacteria with resistances to antibiotics may have time to develop. In addition, patients that carry drug resistant bacterial strains such as methicillin-resistant *Staphylococcus aureus* (MRSA) have more chronic wounds.

The dynamics of changes in the leading pathogens and their associates of soft tissues purulent necrotic processes biofilm in 52 patients was investigated. Diabetic foot syndrome was observed in 65.39%, chronic arterial failure – 7.69% and chronic venous insufficiency – 26.92%. The material was collected in accordance with the existing recommendations in admission after 7 and 14-21 days of treatment. It is found that the main pathogens are gram positive aerobic and facultative anaerobic microorganisms (*S.aureus*, *S.epidermidis*, *S.pyogenes*, *S.hemolyticus*, *Enterobacteriaceae*, including *E.coli*).

The contamination of the biotope in the process of treatment significantly varies within 14-21 days that must be taken into account in the treatment of such patients.