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NEW METHOD OF TREATMENT OF PURE-HEALING CHRONIC WOUNDS

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The problem of treatment patients with pure-healing chronic wound of different localization remains one of the major one in modern surgery. To improve the treatment of chronic wounds we investigated the effect of microbial biofilms of different density on the main pathogenic links of wounds, since the ability to form the film is an additional factor of pathogenicity of various kinds of microorganisms.

Objective – to study the ability of bacteria excreted from pure-healing chronic wounds to form the biofilm of different density; to determine current density possessing an optimal bactericidal effect on bacteria and able to destruct microbial biofilms.

Qualitative and quantitative microflora content of 148 pure-healing chronic wounds was determined, and inoculation was made no later than 1-2 hours after taking the material. The ability of microorganisms to form pathologic biofilm a on the surface of chronic wounds and biofilm density were examined. Electronic-microscopic examinations of biofilms were performed by means of electrons canning microscope with the energy-dispersing microanalysis system with voltage of 20 000 V and from 20 000 to 30 000 times magnification.

The bacteria isolated from chronic wounds in monoculture were Escherichia coli and Pseudomonas aeruginosa, in100% of cases they formed thick microbial biofilms. Bacteria in a mixed composition formed high density biofilms – from 50% to 83,3%, moderate density – from 16,7% to 50,0%, low density – from 10,0% to 13,3%. Bacteria colonizing chronic wounds and excreting from the min monoculture manifest stronger adhesive properties and their exopolysaccharide matrix biofilmis denser, that obviously better protects microbial cells against environmental factors and antimicrobial medicines. The action of direct current electric field with the density of 0,025 mA/cm^2 did not produce bactericidal effect on cells in the biofilm, although itruined the biofilm matrix which density became in an average 1,5 times lower. With increase of density to 0,05-0,1 mA/cm^2 the biofilm matrix was ruined more intensively, its density decreased from high to middle and low. It caused bacterial death due to which their number decreased in a ruined biofilm from 10,7 to 56,4 times ($p<0,05$).

Ability of microorganisms to form biofilm complicates antimicrobial therapy and determines chronic character of wound process duration. Therefore, treatment of chronic wounds non-healing for a long time should include not only antibacterial therapy directed against infection directly found in the wound defect, but new methods of etiopathogenic influence on the biofilm of an appropriate density formed by microorganisms in the wound. In a comprehensive treatment of chronic wounds intra-tissue electrophoresis with the current density of 0,05-0,1 mA/cm^2 with antiseptic is recommended to be performed, and antibacterial therapy should be indicated with preliminary detected sensitivity of microorganisms isolated from the wound biofilm to antibiotics and antiseptics.

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PREDICTION AND PRECONDITIONS OF COMPLICATED COURSE OF TRAUMATIC INJURY OF THE LIVER

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Liver injury remains an important and urgent problem of surgery, because it remains a large percentage of cases in the structure of the injury and the development of complications in the postoperative period. Damage of the liver in abdominal trauma is 13,7-25,9% of cases and mortality can reach 28%. Complications after liver injury can reach 14,8-42%.

The study included 40 victims with dominant liver injury (ISS> 16 points), including 29 men (72.5%) and 11 women (27.5%). The average age was 37 ± 8 years. All patients operated.

Special places in the structure of social problems are traumatic injury, especially polytrauma. This is explained by many factors, among which a special place takes age and gender features. Also note the steady increase in mortality, which is 26% depending on the severity of the injury and mainly 80% are men. A particularly adverse course of traumatic liver injury occupied among the elderly. Also, according to research Major Trauma Outcome Study, found that mortality due to injury among older people three times higher than in people under the age of 55 years, which is associated with plenty complications of abdominal trauma.

Nonspecific immune defense were determined not only to confirm the effectiveness of the proposed algorithm, but also for the analysis of complications depending on the amount and character of damage. So for the damaged of liver the indicators of phagocytosis and CIC had the following character (tabl.).

In complicated traumatic liver injury observed increase in long (more then 72 hours) of middle mass molecules and had multiorgan failure in the postoperative period. Unfavorable factor was the increase in the average molecular weight of more than 210 conventional units over 3 days in patients with liver injury and the development of multiple organ failure was complicated course in 60.5% of cases. Also with prolonged duration of multiple organ failure syndrome (more then 48 hours) were observed changes in nonspecific level of immune defense: index of phagocytic index decreased by (17.9%) and was in the control group (51,88 ± 2,42), the second main group (46,51 ± 3,68).