

STUDY OF CLINICAL EFFECT OF COLLOIDAL SILVER ON MODEL OF ACUTE INTESTINAL INFECTION IN RATS

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Actuality. The role of conditionally pathogenic microflora (CPM) with resistance to antibiotics is growing. In Ukraine, like in the world increases the incidence of acute intestinal infections (AII), caused by CPM. As an alternative antibacterial drugs nanotechnology offer colloidal silver, which is a solution consisting of silver's particles over 25 nm.

The Aim of work is study of clinical effect of colloidal silver on model of acute intestinal infection in rats.

Materials and Methods. The experiment was conducted in accordance with the provisions of the "European Convention for the Protection of Vertebrate Animals used for experimental and other scientific purposes" (Strasbourg, France, 1985). In 16 mature man rats weighing 200-250 g. AII caused by the oral administration of 1,0 ml mixture of cultures CPM every 4 hours per 5 days (*E. coli* 10^{10} CFU/ml, *K. pneumoniae* 10^{10} CFU/ml, *St. aureus* 10^{10} CFU/ml, *Ps. aeruginosae* 10^{10} CFU/ml, *Enterobacter cloacae* 10^{10} CFU/ml, *Str. fecalis* 10^{10} CFU/ml). Animals were divided into groups as follows: 1st – control (8 rats) received baseline treatment orally: rehydron (2,5 ml/day), smecta (0,15 g/day), pancreatin (12 mg/day); 2nd – research (8 rats) on the background of baseline therapy orally received 2 ml colloidal silver (0,02 mg/day) with a concentration of 10 mg/L every (24±2) hours for 7 days. The treatment was conducted every 24 (±2) hours for 7 days. The total duration of observation of rats was 14 days.

Results. In the experiment in the studied animals on (2,88±0,18) day introduction of mixture CPM cultures observed inhibition of cognitive and motor activity, loss of appetite. By (4,63±0,13) day joined thirst, loose stools greenish-brown without any mixture of mucus and blood. Was observed weight loss of (9,81±0,3) %.

During the treatment of rats of both groups normalization of behavioral and motor responses, appetite advancing in the same time – on (2,13±0,53) days from start of treatment. The use of different treatment regimens more influenced duration of diarrhea syndrome. Thus, in rats of the 2nd group rather than with the 1st, there was normalization of defecation, the (3,88±0,13) and (5,38±0,18) day of treatment, respectively, $p < 0,001$. Over the entire period of observation of animals there were no death cases.

Conclusions. The use of colloidal silver has clinical effect in diminishing of duration of diarrhea syndrome at AII, caused by CPM.