

STUDY OF INFLUENCE COLLOIDAL SILVER ON PROFILE OF CYTOKINES AT ACUTE INTESTINAL INFECTIONS

Onyekaba Emmanuel, Larri Samuel, 5th-year students

Scientific supervisor – assistant K. S. Polovyan

Sumy State University, department of infectious diseases and epidemiology

Actuality. On the modern stage in Ukraine, as well as in the whole world, morbidity grows on the acute intestinal infections (AII) caused by conditionally pathogenic microorganisms (CPM). As a result, widely used antibacterial drugs are forming resistance in microorganisms that needs to be reviewed etiotropic priority treatment at AII.

The Aim of research is to study levels of cytokines at AII caused by CPM by using colloidal silver.

Materials and Methods. 50 patients hospitalized in Sumy regional infectious clinical hospital named by Z.Y. Krasovytskyi were examined, average age of (38,14±2,78) years. Men and women were under 25. Patients were hospitalized at (1,48±0,08) day of onset. Patients were divided into two groups of 25 persons each depending on the medical purpose. 1st group of patients received basic therapy – gastric and/or intestine lavage, diet, rehydration, enzymes and sorbents. The 2nd – colloidal silver, which is a solution consisting of silver's particles over 25 nm, 10 mg/L 100 ml three times a day for 5 days on the background of basic therapy. IL 1β, IL 6, IL 4, IL 10 at hospitalization and on (5,54±0,14) day of disease were examined. A control group was laid down 20 clinically healthy donors.

Results. At the beginning of treatment group of patients were comparable ($p>0,05$) for the increasing of levels of all cytokines comparatively with control ($p<0,001$). Thus, the levels of IL 1β arrived at values (accordingly 1st, 2nd and control groups (4,45±0,48), (5,07±0,55) and (1,81±0,03) pg/L), IL 6 – (accordingly (26,22±1,58), (25,39±1,48) and (1,21±0,16) pg/L), IL 4 – (accordingly (8,26±0,52), (9,83±0,37) and (0,97±0,13) pg/L) and IL 10 – (accordingly (17,83±0,28), (18,05±0,41) and (0,62±0,13) pg/L).

In the early recovery period in two groups IL 1β declined to normal (1,88±0,09) and (1,97±0,10) pg/L, $p<0,001$; other cytokines were less in dynamics ($p<0,001$), but higher then normal ($p<0,001$). In this period levels of IL 6, IL 4 and IL 10 were higher in 1st group than in 2nd. The results of levels of cytokines in the early recovery period are: IL 6 – 1st group – (8,43±0,20), 2nd – (5,49±0,28), $p<0,001$; IL 4 – 1st group – (5,36±0,43), 2nd – (3,95±0,32), $p<0,001$; IL 10 – 1st group – (3,72±0,22), 2nd – (2,02±0,16), $p<0,001$. Lower concentrations of IL 6, IL 10 and IL 4 in 2nd group in the early recovery period points to reduce the risk of inflammatory response to normal flora and possible chronization of pathological process in the colon compared to the patients of 1st group.

Conclusions. Thus, setting of colloidal silver at AII, caused by CPM assists more rapid reparation in digestive tract, reduces pathological potential of CPM and as a result, risk of chronization of local inflammatory process.