

THE AFFECTION OF SILVER NANOPARTICLES ON THE CYTOKINE'S LEVELS IN ACUTE INTESTINAL INFECTIONS

K. Polov'yan

Scientific advisor: MD, PhD Mykola Chemych

Sumy State University

Department of infectious diseases with epidemiology

Sumy, Ukraine

Relevance. At this stage, due to the expansion of the spectrum of bacterial resistance, in treatment of acute intestinal infections is used colloidal silver as an alternative to the traditional etiotropic drugs.

The purpose of the study. To study the affection of silver nanoparticles on the cytokine's levels in acute intestinal infections.

Materials and methods. Were involved 50 patients with acute intestinal infections, hospitalized at $(1,34 \pm 0,08)$ days from the onset of the disease, mean age $(37,48 \pm 2,76)$ years. Persons in group 1-st (25 people) received basic treatment – gastric and/or bowel lavage, diet, rehydration, enzymes and sorbents, 2-nd – in addition to the basic therapy – colloidal silver 10 mg/L to 100 ml three times daily – 5 days. Were examined serum levels of IL-1 β , IL-6, IL-4 and IL-10 at admission and $(5,73 \pm 0,16)$ day from the onset of the disease.

Results. At admission the level of IL-1 β was (1-st, 2-nd and control groups) $(4,45 \pm 0,48)$, $(5,07 \pm 0,55)$ and $(1,81 \pm 0,03)$ pg/mL; IL-6 – $(26,22 \pm 1,58)$, $(25,39 \pm 1,48)$ and $(1,21 \pm 0,16)$ pg/mL; IL-4 – $(8,26 \pm 0,52)$, $(9,83 \pm 0,37)$ and $(0,97 \pm 0,13)$ pg/mL; IL-10 – $(17,83 \pm 0,28)$, $(18,05 \pm 0,41)$ and $(0,62 \pm 0,13)$ pg/mL ($p > 0,01$). In the dynamics of all convalescents IL-1 β decreased to normal and did not differ between the groups ($p > 0,05$). The patients in 1-st group IL-6 levels $(8,43 \pm 0,20)$, IL-4 $(5,36 \pm 0,43)$ and IL-10 $(3,72 \pm 0,22)$ pg/mL did not reach rates ($p < 0,001$), but decreased in comparison with the acute period of the disease ($p < 0,001$). In patients treated with colloidal silver, IL-6 $(5,49 \pm 0,28)$, IL-4 $(3,95 \pm 0,32)$ and IL-10 $(2,02 \pm 0,16)$ pg/mL and rapidly decreased ($p < 0,001$), but were higher than normal ($p < 0,001$). With coverage in 2-nd

group was significantly lower than in the 1-st corresponding period of the study ($p < 0,05-0,001$).

Conclusion. When using colloidal silver in the treatment of acute intestinal infections, compared with basic therapy decreases the severity of inflammatory and destructive changes in gastro-intestinal tract.

Summary: based on the results of changes in IL-1 β , IL-6, IL-4 and IL-10 levels, grounded appointment colloidal silver for treatment of patients with acute intestinal infections caused by opportunistic microorganisms reduce inflammatory changes in gastro-intestinal tract.

Polov'yan K. The affection of silver nanoparticles on the cytokine's levels in acute intestinal infections / K. Polov'yan // Український науково-медичний молодіжний журнал. - 2013. - № 4 (74). - С. 115-116.