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BACTERIAL LYSATE OF E.COLI STIMULATES PRODUCTION OF THE DEFENSINS BY PERIPHERAL BLOOD NEUTROPHILS.

Hypothesis / aims of study

The widespread use of antimicrobial medications leads to the appearance of antibiotic-resistant strains of infections of the lower urinary tract. Therefore, currently methods aimed at enhancing the defense mechanisms of the immune system have become very important.

Objective: To study the effect of lysate of E.coli (Uro-Vaxom) on the production of the defensins (HNP1-3, lactoferrin) and IgM/IgA level in patients with recurrent infection of the lower urinary tract (RILUT).

Study design, materials and methods

The study included 40 women with recurrent infections of the lower urinary tract in age from 18 to 68 years who received monotherapy with "Uro-Vaxom" (lyophilized bacterial lysate of 18 strains of E. coli).

The levels of defensins and immunoglobulins were determined using ELISA test (HNP1-3, LF, Elisa Kit, Hycult biotech, Netherlands; Serazym® Human IgA, IgM, Germany).

Results

Patients with RILUT demonstrated the reduced levels of defensins HNP 1-3 (32,23 pg/ml) and LF (75,8 pg/ml), indicating the presence of infection in the body. Application of lysate of E.coli led to the normalization of these parameters in the blood serum of women (55,8 pg/ml – HNP 1-3 and 208,57 pg/ml – LF). The levels of immunoglobulins IgM and IgA in patients with recurrent urinary tract infections remained in the normal range and the application of the bacterial lysates had no effect on these parameters.

Interpretation of results

Activation of neutrophils leads to a rapid release of defensins. Lactoferrin has a key role in maintaining intestinal microbalance, thereby positively affecting the gastrointestinal tract. Only one type of cells, neutrophils can be source of HNP1-3 of plasma or other body fluids during infection and inflammation. As is clear from our research, initially low levels of defensins may indicate the presence of a chronic inflammatory process in the body of women and are characterized by depleted resources neutrophils, thereby reflecting the failure of the innate immunity system. Bacterial lysate activated effectors of innate immunity and led to an increase in the concentration of the defensins tested.

Concluding message

The use of the preparation of microbial origin based on a lysate of E. coli has an immunocorrecting action in the treatment of patients with recurrent infection of the lower urinary tract.

Disclosures

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