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SALMONELLA INFECTION IN CHILDREN OF BUKOVINA REGION

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Bacteria from *Salmonella* genus remains one of the major causative agents of digestive tract infections in adults and especially in children. With a higher susceptibility to such infection and severe course of disease with development of water-electrolyte misbalance and intoxication, children became one of the most vulnerable target for this infectious agent. The elderly, infants, and those with impaired immune systems are more likely to develop severe disease. Some people afflicted with salmonellosis later experience reactive arthritis, which can have long-lasting, disabling effects. Thus, the study of taxonomic composition among *Salmonellae* serotypes may help not only in control of the development of digestive tract infections, but also in prognosis of future outbreaks.

The aim of the study was to define main epidemiological tendencies of salmonellosis in children of Bukovina region.

The investigation is based on the bacteriological investigation of feces of 527 children with isolated *Salmonellae* spp. during 2008-2015 years. All children were patients of Chernivtsi Municipal Children's Hospital, Chernivtsi, Ukraine. Most of the cases occurred in the departments of intestinal infections (88,80 %), infections of junior age (5,12 %) and intensive care units (4,55 %).

During 2008 – 2015 years there has been discovered a tendency to the reduction of the relative and absolute levels of *Salmonella* cultures isolated from sick children with gastroenterocolitis. Abrupt (5,47 times) reduction in the number of obtained strains of *S. typhimurium* can be connected with an improved control of nosocomial infections, but in 2015 the growth of accidents related with *S. typhimurium* to 19 cases was observed. At the same time, the number of obtained strains of *S. enteritidis* remains comparatively stable in the range within 20-40 cases per year (average rate: 22,5±2,38). The upper limit is accurately linked to cases of epidemic outbreaks, diseases in the places of children groups (kindergartens, schools). At the same time *S. enteritidis* was isolated in 41,66 % of cases in department of intensive care and in 38,46 % - in the department of intestinal infections only and was not found in other departments at all.

Diseases caused by *S. enteritidis* had quite stable seasonal peaks in February, May and September. That we can connect with the holidays and period after summer vacation. Any serious problem related to "foreign" bacteria were not observed, since there were almost absent detection of atypical *Salmonella* cultures for the conditions of Bukovina region. Among them some uncommon cases caused by *S. infantis* happened.

So, salmonellosis in Bukovina region in children has a tendency to reduction in general, but these changes occur mostly because of a decreased number of cases caused by *S. typhimurium* with comparatively stable rate of diseases caused by *S. enteritidis*, which is commonly found in departments of intestinal infections intensive care. This confirms that *S. enteritidis* is not generally related to nosocomial infections. Taxonomic composition of causative agents of salmonellosis remains stable through the years with accidental appearance of uncommon *Salmonellae*.

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MICROBIOTA OF THE COLON CAVITY AND ADAPTIVE-COMPENSATORY PROCESSES IN PATIENTS WITH RHEUMATOID ARTHRITIS

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Rheumatoid arthritis (RA) is a systemic chronic autoimmune disease, which is characterized by inflammation of synovial envelope and clinically onset primary with erosive injury of joints and later with development of visceropathy. Peak of morbidity accounts at the age of 35-45 years. The disease is related to hardly evaluated loss: pain, helplessness, acquired immune deficiency, social and psychological problems and disability.

The aim of this investigation was to define taxonomic content of colon cavity microflora and to study adaptive-compensatory process of the immune system in patients with rheumatoid arthritis.

There has been performed clinical-laboratory and instrumental examinations of men aged from 23 to 62 years. Microbiological investigations were performed according to classical methods of obtaining pure culture and its identification in RA patients. The control group consisted of healthy men of similar age. To establish the level of adaptive-compensatory processes in patients with RA there was used an automatic hematology analyzer of HB series with further calculation of lymphocyte-neutrophils correlation.

The results of microbiologic investigations of colon microflora of patients with RA and healthy people display dysbacteriosis/dysbiosis of I-IV stages with dependence of its stage on clinical manifestation, term of the disease and prior therapeutic tactics. Microbiocenosis of the colon cavity has been found to be characterized by decrease of colonization level of *Bifidobacteria*, *Lactobacteria*, *Peptostreptococci*, other autochthonous obligate and separate autochthonous facultative bacteria. Against this background contamination and colonization of the colon cavity by conditionally pathogenic bacteria of genera *Proteus*, *Klebsiella*, *Enterobacter*, *Citrobacter*, *Serratia*, *Hafnia*, *Pantotea*, also by *P.aeruginosa*, *S. aureus*, *E. coli* Hly⁺, *E. coli* Lac⁻ and yeast-like fungi of genus *Candida* occur.



Population levels of autochthonous obligate and major representatives of intestinal microbiocenosis and multifunctional according to bacterial significance of genera *Bifidobacterium* and *Lactobacillus* are considerably decreased, and in 38,70 % of patients these bacteria are totally eliminated. On the other hand, population levels of *Proteus*, *Klebsiella*, *Enterobacteria*, *Citrobacter*, *Serratia*, *Hafnia*, *Pseudomonas*, hemolytic and lactase-negative *Escherichia*, *Staphylococci* and yeast-like fungi of genus *Candida* are significantly increased. The majority of strains of *Klebsiella*, *Enterobacter*, *Pseudomonas*, *E. coli Hly+*, *E. coli Lac-*, *S. aureus* has high adhesive property and shows anti-lysozyme activity.

In 17,02 % patients with RA and accompanied dysbiosis of IV stage adaptive-compensatory processes were in stress zone. In most of the patients adaptive index was in training zone, and nobody was in higher activity zone.

So, rheumatoid arthritis is often accompanied with deep changes of intestinal microflora, which are represented by elimination of some part of autochthonous bacteria and contamination with opportunistic microbes. Investigated population levels of intestinal microbiota confirm the presence of developed dysbacteriosis/dysbiosis of I-IV stages.

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SYSTEMIC PERSISTENCE OF OBLIGATE INTRACELLULAR MICROORGANISMS AND INFERTILITY OF II TYPE

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Today every tenth couple in Ukraine is sterile [G.M. Drannyk, 2010]. Family fertility of equally depends on the reproductive potential of a man and a woman. The reason of secondary infertility in a couple is often recurrent or lasting chronic inflammation processes of the reproductive organs. A special value in infertility belongs to continuous persistence of obligate intracellular pathogenic and opportunistic microorganisms: viruses, mycoplasma, ureoplasma, chlamidia, toxoplasma etc. Persistence of intracellular infection in the human organism forms immunodeficiency status that assists in higher colonization of the reproductive organs with opportunistic microorganisms (bacteria, fungi etc.) that finally may result in infertility.

The aim of the investigation was to define the level of persistence of obligate intracellular microorganisms in women suffering from secondary infertility by retrospective diagnostics.

By means of enzyme-linked immunoassay the investigation of blood sera of 67 women (19-34 years old) with infertility of II type it has been conducted. Retrospective diagnostics of persistence infection was made by detection of the titer of specific immunoglobulins (IgM and IgG). Antigens of obligate intracellular microorganisms were detected by solid-phase enzyme-linked immunoassay.

In 35 (52,24 %) women with infertility of II type there is persistence of *Herpes simplex viruses* type 1 and 2, *Cytomegalovirus* in 39 (58,21 %) of patients. These viruses are dominant and persist in all women with infertility of II type. *T. gondii* and *C. trachomatis* occurs frequently. *Rubella virus* and mycoplasma rarely persist in women with infertility of II type.

In the peripheral blood of 67 women with infertility of II type it any high (diagnostic) level of IgM was not detected that testifies the absence of acute inflammation process caused by persistent viruses, chlamidia, toxoplasma etc. Diagnostic titers of IgG in the peripheral blood to viral antigens of herpes group, chlamidia and toxoplasma give the evidence chronic of character of the persistence infection.

In 50 women with infertility of II type it has been found the persistent of one, two or three intracellular microorganisms that are referred to 6 different taxonomic groups. That testifies possible persistence of several taxons in one organism. By quantitative characteristics single causative agent was isolated in 15 women with infertility of II type. In other 35 cases there was persistence of associations of intracellular microorganisms: in 12 cases associations were composed of 2 taxons, in 8 of 3 taxons and in 15 women there was simultaneous persistence of 4 taxons of intracellular microorganisms.

Among the qualitative composition of associations more often (in 19,40 %) associations of different taxons of *Herpesviruses* (*Cytomegalovirus* with *Herpes simplex viruses* type 1 and 2) occurred. Among 4-component associations in 10 women there was the association composed of *Cytomegalovirus*, *Herpes simplex virus*, *Rubella virus* and *Toxoplasma* and in 8 (11,94 %) association composed of *Cytomegalovirus*, *Herpes simplex* and *Chlamidia*.

So, infertility of II type may be accompanied with persistence of obligate intracellular microorganisms, which form associations of 2-4 taxons.

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AUTOCHTHONOUS OBLIGATE AND FACULTATIVE MICROFLORA OF VULVOVAGINAL CONTENT IN WOMEN WITH II TYPE OF INFERTILITY

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Infertility is a dramatic problem of not only a single family but also a social challenge. In the majority of women, infertility is based on the tube-peritoneal form that testifies prior inflammation process of the uterus or uterine