

**МІНІСТЕРСТВО ОХОРОНИ ЗДОРОВ'Я УКРАЇНИ  
БУКОВИНСЬКИЙ ДЕРЖАВНИЙ МЕДИЧНИЙ УНІВЕРСИТЕТ»**



## **МАТЕРІАЛИ**

**104-ї підсумкової науково-практичної конференції  
з міжнародною участю  
професорсько-викладацького персоналу  
БУКОВИНСЬКОГО ДЕРЖАВНОГО МЕДИЧНОГО УНІВЕРСИТЕТУ  
06, 08, 13 лютого 2023 року**

Конференція внесена до Реєстру заходів безперервного професійного розвитку,  
які проводитимуться у 2023 році №5500074

**Чернівці – 2023**

**Conclusions.** In women with primary infertility in vulvovaginal content there is a decreasing population level of most important by representation in content of vulvovaginal microbiome of fertile age women and by the multifunctional role in support of microecological homeostasis of woman bacteria of the genus *Lactobacillus* (by three grades), *Bifidobacterium* – by one grade, *Propionibacterium* - almost by one grade. Against this background, the population level, the coefficient of dominance and significance of *E. coli* and yeast-like fungi of the genus *Candida* is increasing. Pathogenic and opportunistic bacteria *S. aureus*, *N. gonorrhoeae*, which contaminate the biotope, reach a high population level ( $5.01 \pm 0.38$  lg CFO/mg, -  $7.03 \pm 0.41$  lg CFO/mg).

**Sydorchuk L.I.**

## **COLON MICROBIOME IN NEWBORNS DURING THE FIRST THREE MONTHS OF LIFE**

*Department of Microbiology and Virology  
Bukovinian State Medical University.*

**Introduction.** The current level of knowledge attests to a phenomenal role of symbiotic microbiota in maintaining homeostasis of the human body at all stages of its life. From the sterile conditions of intrauterine existence, the child makes the transfer to an environment where, from the first seconds of extrauterine life, it is attacked by numerous microbes of a bacterial, viral or fungal nature. This period is characterized by a weak resistance to opportunistic, purulent, gram-negative microbiota, a tendency to generalize the infectious process and the occurrence of septic conditions, high sensitivity to viruses. Determination of the colon microbiome during the first three months of life allows establishing the adaptation processes that take place in the child's body.

**The aim of the study** was to investigate the taxonomic composition, population level of the colon microbiome of newborns under 3 months of age and to establish its individual microecological indicators.

**Materials and methods.** Bacteriological and mycological examination of the contents of the large intestine was carried out in 126 full-term infants under the age of 90 days on natural feeding. Children aged from 2 to 30 days constituted 29.37%, from 31 to 60 days - 38.89%, from 61 to 90 days - 31.75%. Among the children, 61 (48.41%) were boys and 65 (51.59%) were girls. Ten-fold dilutions of the material were sown on appropriate solid nutrient media with subsequent identification of pure cultures of microorganisms.

**Results.** The large intestine is the main reservoir of symbiotic microflora in a child. The microbiome of the colon in children under 3 months of age was found to be represented by a spectrum of symbiotically associated microbiota from 12 taxons. The main microbiota includes obligate anaerobic bacteria of the genus *Bacteroides*. *P. niger*, facultatively anaerobic *E. coli* and bacteria of the genus *Staphylococcus*. Additional microbiota in the colon microbiome is represented by obligate anaerobic bacteria of the genus *Propionibacterium* and *P. mirabilis*, which inhibit the growth and reproduction of bacterial populations of opportunistic and pathogenic bacteria, and significantly stimulate the growth and reproduction of bifidobacteria and lactobacilli. Isolated and identified enterobacteria (*H. alvei*, *C. diversus*) and yeast-like fungi of the genus *Candida* made up the accidental microbiota. The highest population level was reached by *E. coli* ( $9.85 \pm 0.39$  lg CFU/g). At the same time, a relatively low population level of bifidobacteria was observed, which was  $8.22 \pm 0.37$  lg CFU/g.

**Conclusions.** Dysbiosis of 1-2 degrees was formed in most children by the age of 3 months, which is explained by weak reactivity to opportunistic, purulent, gram-negative microbes, and only 20.64% of children had normal microflora. Thus, the need to correct the microbiota of the large intestine in children in the first 3 months of life, the use of probiotics and prebiotics should be considered.