

Міністерство охорони здоров'я України
Вищий державний навчальний заклад України
«Буковинський державний медичний університет»

МАТЕРІАЛИ



98-ї підсумкової наукової конференції
професорсько-викладацького персоналу
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13, 15, 20 лютого 2017 р.



Чернівці 2017

Матеріали 98-ї підсумкової наукової конференції
професорсько-викладацького персоналу ВДНЗУ «БДМУ»



**МІНІСТЕРСТВО ОХОРОНИ ЗДОРОВ'Я УКРАЇНИ
ВИЩИЙ ДЕРЖАВНИЙ НАВЧАЛЬНИЙ ЗАКЛАД УКРАЇНИ
«БУКОВИНСЬКИЙ ДЕРЖАВНИЙ МЕДИЧНИЙ УНІВЕРСИТЕТ»**



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98 – ї

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13, 15, 20 лютого 2017 року

Чернівці – 2017



УДК 001:378.12(477.85)
ББК 72:74.58
М 34

Матеріали 98 – ї підсумкової наукової конференції професорсько-викладацького персоналу вищого державного навчального закладу України «Буковинський державний медичний університет» (м. Чернівці, 13, 15, 20 лютого 2017 р.) – Чернівці: Медуніверситет, 2017. – 408 с. іл.

ББК 72:74.58

У збірнику представлені матеріали 98 – ї підсумкової наукової конференції професорсько-викладацького персоналу вищого державного навчального закладу України «Буковинський державний медичний університет» (м. Чернівці, 13, 15, 20 лютого 2017 р.) із стилістикою та орфографією у авторській редакції. Публікації присвячені актуальним проблемам фундаментальної, теоретичної та клінічної медицини.

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ISBN 978-966-697-607-6

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університет, 2017



content in the position 1 without lipophilic groups, absence of chlorine in the position 2 in case of methylcarbonyl group available in the position 5.

Sydorchuk I.Y., Sydorchuk L.I., Rotar D.V.

STATE OF CAVITARY MICROBIOTA OF COLON IN ONE TO SIX MONTHS OLD CHILDREN WITH ACUTE COLIENTERITIS BREASTFED WITH INFECTION OF BREAST MILK

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Despite the significant progress made in the field of acute colienteritis in children, many questions of etiology, pathogenesis, microecological relations, formation of intestinal dysbacteriosis/dysbiosis and taxonomic composition and population-level of major, additional and accidental microbiota of intestinal microbiocenosis and other issues of colienteritis require study, taking into account bacteriological and immunological researches of today. This is especially related to children one to six months of age (that are breastfed), sick with colienteritis. Normally, breast milk is sterile, but in inflammation process in breast, it can be infected, so the disease poses a threat to a child that uses this milk, and there is a threat to the life of the mother. The first reaction to such feeding will be from a side of cavitary microbiota of a colon that characterizes the relevance of study of the colon microbiota in infants suffering from colienteritis.

Contents of colon cavity of 53 children one to six months of age with colienteritis (control - 35 children) who were breastfed and, in fact, breast milk, which breastfed children, underwent bacteriological and mycological examination.

For disclosure mechanisms of contamination of colon of children one to six months of age, in patients with acute colienteritis there has been used ecological method that allowed to carry out the specific characteristics of coexistence of taxons of ecosystem "host - microbiota" and identify the direction of disorders of colon microecology on the background of acute colienteritis in children who were breastfed with breast milk infected with bacteria of the genus *Staphylococcus*. The results of bacteriological studies have shown that in 49 (92.45 %) samples *Staphylococcus aureus* (was isolated and identified), and in 4 (7.55 %) women - *Staphylococcus epidermidis*. Population level of the selected strains was 3,0 - 7,0 lg CFU/ml ($M \pm m = 4,37 \pm 0,38$ lg CFU/ml).

Breastfeeding with milk infected by *Staphylococcus* leads to a decrease of population of *Bifidobacterium* by 43.03 % (3 orders), *Lactobacillus* - by 32.24 %, (2 orders). With the decline of population of *Bifidobacteria* and *Lactobacilli* in the intestinal microbiocenosis the colonization resistance of intestinal mucosa becomes disturbed, which promotes colonization of the intestine, especially the colon, with opportunistic *Enterobacteria* - hemolytic *Escherichia* (*E. coli* Hly+) in 16.48 % of children with acute colienteritis, *Proteus* - in 22.53 %, *Citrobacter* - in 3.77 %, *Peptococci* - in 15.09 %, *Peptostreptococci* - in 55.42 % and *Staphylococcus* - in 91.43 % of cases. In addition, in the colon of children with acute colirnteritis breastfed with the infected milk there is an increase of population levels of *Bacteroides* by 32.59 % (2 orders). Furthermore, there is increasing population levels by 61.50 % (3 orders) of *Peptostreptococci* in the colon and contamination with *Peptococci* ($9,13 \pm 0,37$ lg CFU/g) occurs.

Reduction of the concentration of *Bifidobacteria* and *Lactobacilli* also, among other components of ecosystem, leads to an increase of the population level of *E. coli* by 19.07 % (2 orders) in the colon of children with colienteritis. In the experimental group of children *Staphylococci* were isolated from all sick children in concentration $6,16 \pm 0,12$ lg CFU/g, that is 2.92 times higher than in healthy children fed naturally with uninfected milk. Thus, the growth of the population level of *Staphylococci* in the colon of infants suffering from colienteritis may be linked, according to our point of view, on the one hand, with the constant contamination of the gastrointestinal tract due to breastfeeding with milk containing ($4,37 \pm 0,38$ lg CFU/g) *Staphylococci*, and on the other hand, with changes of colonization resistance of the mucous membrane of the colon as a result of decline of population level of the major part of the large intestine microbiota - bacteria of genera *Bifidobacterium* and *Lactobacillus*.

The obtained data shows that the acute colienteritis in infants who were breastfed with *Staphylococci*-positive milk develops on the background of the prevailing dysbiosis in all children. Most affected children formed the second degree dysbiosis and 2 patients developed children the third degree.

Breastfeeding with milk infected by *Staphylococcus* in children aged from one to six months leads to the formation of *Staphylococcal* dysbacteriosis of the first (up to 43.40 %), second (up to 52.83 %) and third (3.77 % of cases) stages, and on its background colienteritis due to association of pathogenic (*E. coli* Hly+) and opportunistic *Enterobacteriaceae* (*E. coli*, *Proteus*, *Citrobacter*), *Staphylococci* (in population level $6,16 \pm 0,12$ lg CFU/g), *Bacteroides*, *Peptococci*, *Peptostreptococci* and other bacteria develops. Colienteritis in infants breastfed with milk infected by *Staphylococci* (*S. aureus*, *S. epidermidis*) is an infectious processes of mixed etiology, provocative factor of which is the association of opportunistic gram-negative *Enterobacteria*, *Bacteroides* and gram-positive *Staphylococci*, *Peptostreptococci* and *Peptococci*.

Dysbacteriosis formed in infants suffering from acute colienteritis is characterized by a reduction of a part of *Bifidobacteria* and *Lactobacilli* in intestinal microbiota and increasing number and value in microbiocenosis (by a rate of quantitative dominance and significance) of gram-negative opportunistic *Enterobacteriaceae*, *Bacteroides* and gram-positive opportunistic bacteria of the genera *Staphylococcus*, *Peptostreptococcus* and *Peptococcus*.