

Міністерство освіти та науки України
Сумський державний університет
Медичний інститут



АКТУАЛЬНІ ПИТАННЯ ТЕОРЕТИЧНОЇ ТА ПРАКТИЧНОЇ МЕДИЦИНИ

Topical Issues of Clinical and Theoretical
Medicine

Збірник тез доповідей
IV Міжнародної науково-практичної конференції
Студентів та молодих вчених
(Суми, 21-22 квітня 2016 року)

ТОМ 1

Суми
Сумський державний університет
2016

month taking of probiotic preparations. It contained such microorganisms as *Lactobacillus spp.*, *Streptococcus thermophilus*, *Bifidobacterium spp.*, *Escherichia coli*, *Saccharomyces boulardii*. Six weeks later the follow-up study was conducted to investigate gut microflora of 20 HIV-infected patients.

Results: Changes of intestinal microflora were found in all of the patients. The decrease in the obligatory microorganisms quantity, especially in bifidobacteria (lower than reference ranges in 90% of patients) was the most frequent finding. Bacterial overgrowth of opportunistic pathogenic biota (mainly *S. aureus* and *Candida spp.*) was registered in only a minority of patients. The probiotic interventions resulted in significantly elevated levels of beneficial bacteria load (such as *Bifidobacterium spp.*, *Lactobacillus spp.*) and a decrease in pathogenic bacteria load (such as *Clostridium*, *Candida spp.*).

Conclusions: Probiotic preparations can successfully augment the levels of probiotic species in the gut during chronic HIV-1 infection. These findings may help inform future studies aimed at testing pre- and probiotic approaches to improve gut function and mucosal immunity in chronic HIV-1 infection.

EFFECT OF SYNBiotic THERAPY ON CYTOKINES CONCENTRATIONS IN PRE-PRESCHOOL CHILDREN WITH COMMUNITY-ACQUIRED PNEUMONIA

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The diseases of the respiratory system occupy the first position which constitutes nearly 62-65 % in the structure of child morbidity. Community-acquired pneumonia (CAP) is one of the most common diseases of modern society. Cytokines play a central role in inflammatory response that is a basis for further immune response.

Our **aim** was to study the effect of synbiotics on pro- and anti-inflammatory serum cytokines (IL-8 and IL-4) concentrations in pre-preschool children with CAP.

Materials and Methods

We examined 27 children (aged 1–3 years), who were hospitalized with CAP in the infectious unit No. 1 of St. Zinaida Sumy City Children's Hospital between 2011 and 2013. The patients were divided into two groups. 14 children with CAP, who received standard therapy, composed group 1. 13 patients, who received therapy combined with synbiotic therapy, entered group 2. 18 apparently healthy children of appropriate age and gender composed the control group.

Serum cytokines (IL-4 and IL-8) concentrations were measured by the ELISA using the test-systems. The evaluations were conducted during acute period (on 1st–2nd day after hospitalization) and etiotropic treatment interruption (on 10–14th days).

Results and Discussion

At onset of disease IL-8 concentration increased significantly ($p < 0.001$); IL-4 concentration also increased ($p < 0.001$) in groups 1 and 2 in comparison with the control group.

During the early recovery period IL-4 concentration increased significantly in group 1 comparing with the acute period ($p < 0.05$). However, IL-8 concentration was unchangeable ($p > 0.05$) due to the received therapy. At the same time, the indices were not standardized ($p < 0.001$).

Combination of complex therapy and symbiotic therapy for CAP treatment reduced concentrations of pro- and anti-inflammatory cytokines. For example, the significant decrease in IL-4 ($p < 0.01$) and IL-8 ($p < 0.01$) concentrations occurred in group 2. Unfortunately, the indices were still higher than in the apparently healthy patients ($p < 0.001$, $p < 0.05$).

Thus, combination of standard therapy with symbiotic therapy for CAP can potentiate the therapeutic effect by inhibiting inflammation for patients.