Abstract

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[Dynamics of contamination and persistence of Clostridium difficile in intestinal microbiota in newborn infants during antibiotic therapy and use of probiotic strain enterococcus faecium L3].

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Abstract

Ninety four infants were observed as inpatients. Thirty nine of them were mature neonates and 55 were premature infants with a very low body weight. The majority of the patients were treated with antibiotics. The mature infants were treated with penicillins, aminoglycosides, cephalosporins and the premature neonates were treated in addition with carbapenems, fluoroquinolones, glycopeptides. The mature infants were randomized into 2 groups: the control group (n=18) received the standard therapy and the main group (n=21) in addition received 1 ml of liquid probiotic **Enterococcus faecium L3** (with a titer of 5x10(8) CFU/ml) 2 times a day for 10 days. The premature newborn infants were also randomized into 2 groups. The control group (n=26) received the standard therapy. The main group (n=29) additionally received 1 ml of liquid probiotic E.**faecium L3** 2 times a day for 10 days. The effectiveness of the therapy in the mature neonates was evaluated by the frequency of dyspeptic disorders and in the premature infants by the frequency of infectious complications and the episodes of food intolerance. The intestinal microbiota of the infants was investigated by the real-time PCR and bacteriological analyses of the feces: in the mature infants on admission to the hospital and 10 days after the treatment (periods 1-2), in the premature infants on admission to the hospital and then twice with an interval of 14 days (periods 1-2-3). It was shown that the use of the probiotic strain E.**faecium L3** during the antibiotic therapy in the premature infants promoted significant reduction in the frequency of infectious complications. In the mature neonates the probiotic therapy reduced the risk of dyspeptic disorder. The studies showed reduction in persistence of Clostridium difficile in the intestinal microbiota of the newborn infants receiving the antibiotic therapy in combination with probiotic E.**faecium L3**, that was accompanied by preserving and growth of bifidobacteria and **lactobacilli** and reduction of the number of opportunistic microorganisms.

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