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EFFECT OF PROBIOTIC ADMINISTRATION ON THE LEVELS OF FECAL SECRETORY IMMUNOGLOBULIN A IN PREMATURE INFANTS

Abstrak :

Secretory immunoglobulin A (sIgA) plays an important role in the defence of the gastrointestinal tract. The level of fecal sIgA is associated with increased neutralization and clearance of viruses. Preterm infant whose delay of intestinal colonization may benefit from strategies to support maturation of humoral immunity and endogenous production of sIgA by early colonization with probiotic. The objective of this study was to evaluate the effect of probiotic on the fecal sIgA level in newborn preterm infants. A randomized double-blind placebo control study of newborn preterm infants (30-36 weeks of gestational age) who were spontaneous delivered and had no asphyxia was conducted in NICU Soetomo Hospital-Surabaya November-December 2006. Both groups were breast fed. Group probiotic was given multistrain probiotic containing 107 cfu of Lactobacillus acidophilus, Bifidobacterium longum, and Streptococcus faecium once daily for 14 days since 2nd day of age. The control group was given placebo. Fecal sIgA was determined by an enzyme-linked immunosorbent assay before and after intervention. Subject/s who got Respiratory Distress Syndrome or sepsis during study was dropped out. Statistical analysis used in this study were Chi-square, Paired t - test, Independent sample t - test, Mann-Whitney, Wilcoxon Signed Ranks test, and Multivariate analysis of variance (α = 0.05). Forty seven neonates were enrolled, 7 of them were drop out (2 with RDS, 5 with sepsis). Forty analyzed neonates were divided in probiotic (n=20) and placebo group (n=20). There was no significant difference about basic characteristics between the groups. At first examination, median of fecal sIgA level did not differ significantly between two groups (p=0.512), 0.164 and 0.174 mg/g feces in probiotic and placebo group respectively. There was higher increment of fecal sIgA level in probiotic than placebo group (1.735 vs 1.449 mg/g feces, p=0.003). In conclusion, preterm infants may benefit from probiotic because of the observed clear tendency to increase fecal sIgA secretion.

Keyword :

preterm infant, probiotic, fecal sIgA

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