META-ANALYSIS ON THE EFFECT OF PROBIOTICS ON REDUCING DIARRHEA EPISODE IN CHILDREN UNDER FIVE

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ABSTRACT

Background: Probiotics are sources of “good” bacteria that work in the intestinal tract to create a healthy gut environment. It plays an important role in protecting intestines against infection. Many strains of probiotic microorganisms have been shown to inhibit growth and metabolic activity as well as the adhesion to intestinal cells of enteropathogenic bacteria. The purpose of this study was to examine the effect of probiotics on reducing diarrhea episode in children under five.

Subjects and Method: This was a meta-analysis study conducted by selecting published articles years 2000-2019, from PubMed, Science Direct, and Springer Link databases. The inclusion criteria were randomized controlled trial (RCT) conducted in developed countries. A sample of 525 children was selected and divided into two groups (266 children receiving probiotics and 259 children receiving placebo). The data were analyzed by PRISMA systematic guideline. Mean difference and heterogeneity were pooled and summarized by RevMan 5.3 program.

Results: There was high heterogeneity between experiment groups ($I^2 = 94\%$; $p < 0.001$), therefore this study used random effects model (REM). Probiotic administration reduced diarrhea episode 0.99 days shorter than placebo (Mean = -0.99; 95% CI = -1.98 to -0.01; $p = 0.005$).

Conclusion: Probiotics are effective to reduce diarrhea episode.

Keywords: diarrhea, probiotics, children under five, meta-analysis

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