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**ANALYSIS OF EFFICACY OF PROBIOTIC USE IN ACUTE VIRAL
DIARRHEA IN CHILDREN (REVIEW OF TRIALS)**

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Pneumonia and diarrhea together account for 29% of all child deaths globally, resulting in the deaths of more than two million children each year. The Integrated Global Action Plan for the Prevention and Control of Pneumonia and Diarrhoea (GAPPD), by WHO/UNICEF, goes to the heart of the challenge by recognizing that the only way to combat these two preventable diseases is to not address them separately, but fight them together in an integrated approach. Acute diarrhea from viral (mostly rotaviruses) infection is still a major health problem worldwide and a frequent cause of death, especially in hospitalized children and in developing countries. But infectious diarrhea is not only a problem of developing countries. Up to 30% of the population in developed countries is affected by diarrheas each year. Recently, probiotic therapy has been investigated in several studies in which the therapeutic effect on virus-associated diarrhea in children was distinguished, so they have been included in the recent guidelines for the management of acute diarrhea in children of the European Society for Pediatric Infectious Diseases (ESPID). World Gastroenterology Organization gives next definition: “probiotics” - are live microbes that can be formulated into many different types of products, including foods, drugs, and dietary supplements. Species of *Lactobacillus* and *Bifidobacterium* are most commonly used as probiotics, but the yeast *Saccharomyces cerevisiae* and some *E. coli* and *Bacillus* species are also used as probiotics in international medicinal pediatric practice.

Thus, the aim of our investigation was the analyses of domestic market of probiotics and review of the randomized trials of founded medicines with future indicating of their efficiency for viral diarrhea in children.

Following methods were used in the study: analytical, statistical, historical, method of comparative analyses etc.

Analyses of State Formulary (8th edition, 2016) specifies a presence on domestic market of three medicines in two international non-patent names: *Saccharomyces boulardii* and bifidobacteria. In numerous studies probiotics were administered as nonfood preparations, e.g., as a powder or suspended in oral rehydration solutions. The PubMed, Cochrane Controlled Trial Register (CCTR) and Ovid (Wolters Kluwer Health) were searched between 1980 to June, 2013. Randomized controlled trials including the administration of probiotics for treatment of rotavirus diarrhea in infants and children were reviewed. 12 studies located in 11 countries have been seen for review: Iran (Abbaskhaniyan et al. 2012), India (Dutta et al. 2011) Turkey (Dalgic et al. 2011), Bolivia (Grandy et al. 2010), Australia (Ritchie et al. 2010) India (Narayanappa D, 2008), Poland (Szymanski et al. 2006), Bangladesh (Sarker et al. 2005), Denmark (Rosenfeldt et al. 2002), Thailand (Simakachorn et al. 2000), Russia (Shornikova et al. 1997), Finland (Kaila et al. 1992). Probiotic therapies with different strains demonstrated some beneficial effects, although some studies did not show any significant effects. This study assessed systematically the current knowledge on the effect of probiotic bacteria on duration of acute rotavirus diarrhea in children compared with control.

Finally, it's established: the outcomes from each study were considered in the duration of diarrhea. The pooled estimate of efficacy of probiotics in prevention or treatment of disease yielded in all studies a mean difference of 0.41 (CI 95%: -0.56 to -0.25; $p < 0.001$). In line with the recent finding, it was noted that the use of probiotics can reduce the period of diarrhea, especially rotavirus diarrhea between 20 to 24 hours.

Obtained data will be used in future pharmacoeconomic investigations with purpose of finding of costs of unit of effectiveness/utility of each analyzed medicine to formulating of propositions for most cost-effective and/or cost-utility probiotic for viral diarrhea treatment in children.