The effects of selected probiotic strains on the development of eczema (the PandA study) [1]

Abstract

Background: Modification of the intestinal microbiota by administration of probiotic bacteria may be a potential approach to prevent allergic disease. We aimed to study primary prevention of allergic disease in high-risk children by pre- and postnatal supplementation of selected probiotic bacteria.

Methods: In a double-blind, randomized, placebo-controlled trial, a mixture of probiotic bacteria selected by in-vitro experiments (Bifidobacterium bifidum, Bifidobacterium lactis, and Lactococcus lactis; Ecologic Panda) was prenatally administered to mothers of high-risk children (i.e. positive family history of allergic disease) and to their offspring for the first 12 months of life.

Results: Parental-reported eczema during the first 3 months of life was significantly lower in the intervention group compared with placebo, 6/50 vs 15/52 (P = 0.035). After 3 months, the incidence of eczema was similar in both groups. Cumulative incidence of parental-reported eczema at 1 and 2 years was 23/50 (intervention) vs 31/48 (placebo) and 27 (intervention) vs 34 (placebo), respectively. The number needed to treat was 5.9 at age 3 and 12 months and 6.7 at age 2 years. The intervention group was significantly more frequently colonized with higher numbers of Lc. lactis. Furthermore, at age 3 months, in vitro production of IL-5 (146 pg/ml vs 72 pg/ml; P = 0.04) was decreased in the probiotic-group compared with the placebo-group.

Conclusions: This particular combination of probiotic bacteria shows a preventive effect on the incidence of eczema in high-risk children, which seems to be sustained during the first 2 years of life. In addition to previous studies, the preventive effect appears to be established within the first 3 months of life.

Journal: Allergy

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Year: 2009

Ecologic ® PANDA [2]