

ANTENATAL PROBIOTICS REDUCES MATERNAL BUT NOT CHILDHOOD ATOPIC DISEASES: A RANDOMIZED, DOUBLE-BLIND, PLACEBO-CONTROLLED TRIAL

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Background: The prevalence of atopic diseases has increased rapidly in recent decades globally. The administration of probiotics to reduce gastrointestinal inflammation has been popular but it is controversy to reduce atopic diseases. This study evaluated the effectiveness of antenatal probiotics on childhood and maternal atopic diseases.

Method: In a prospective, double-blind, placebo-controlled clinical trial, pregnant women with atopic diseases determined by history, total immunoglobulin (Ig)E > 100 kU/L, and/or positive specific IgE were assigned to receive either probiotics (LGG; ATCC 53103) or placebo from the second trimester of pregnancy. Atopy, physical examination, IgE, and specific IgE were obtained in parents and infants at 0, 6, 18, and 36 months of age.

Result: In total, 191 pregnant women (LGG group N = 95; control group N = 96) were enrolled. Demographic data, including maternal age, delivery week, parity, maternal IgE, and paternal IgE levels, showed no significant difference between the two groups. Symptoms of maternal atopy improved were significantly in the LGG group ($p = 0.005$). Maternal atopy improvement was more prominent in pregnant women with IgE > 100 kU/L ($p = 0.01$) and significantly associated with higher interleukin-12p70 levels ($p = 0.013$). The incidence of allergy sensitization and atopic disease at 6 months, 18 months, and 36 months showed no significant difference ($p > 0.1$).

Conclusion: LGG administration beginning at the second trimester of pregnancy reduced the severity of maternal allergic disease thru increment of Th1 response, but not the incidence of childhood allergic sensitization or allergic diseases.