

## Selected Summaries

### Breastfeeding and Atopy

[Saarinen UM, Kajosaari M. Breastfeeding as prophylaxis against atopic disease: Prospective follow-up study until 17 years old. *Lancet* 1995, 346: 1065-1069],

Atopic disease constitute a common health problem. For infants at hereditary risk, prophylaxis of atopy has been sought in elimination diets and other preventive measures. The authors followed up healthy infants during their first year, and then at age 1,3,4,10 and 17 years of determine the effect on atopic disease of breastfeeding. Of the initial 236 infants, 150 completed the follow-up which included history taking, physical examination, and laboratory tests for allergy. The subjects were divided into three groups: prolonged (>6 months), intermediate (1-6 months), and short or no (<1 month) breastfeeding.

In the whole cohort, the prevalence of manifest atopy was 20% at 1 year of age and increased to 47% at 17 years. The cumulative incidence of atopy, including all individuals with either manifest or latent atopy increased from 20% at 1 year to 67% at 17 years. The prevalence of manifest atopy throughout follow-up was highest in the group who had little or no breastfeeding ( $p < 0.05$ , analysis of variance and covariance with repeated measures [ANOVA]). Prevalence of eczema at ages 1 and 3 years was lowest ( $p = 0.03$ , ANOVA) in the prolonged breastfeeding group, while the prevalence of food allergy was highest in the little or no breastfeeding group ( $p = 0.02$ , ANOVA) at 1-3 years, and respiratory allergy was also most prevalent in the latter group ( $p = 0.01$ , ANOVA). Prevalence of manifest atopic disease was also influenced by atopic heredity ( $p = 0.005$ ). At the age of 17 years, significant differences were seen

between the study groups for prevalence of both atopy ( $p = 0.02$ , trend test) as well as substantial atopy ( $p < 0.0001$ , trend test). The differences in substantial atopy persisted when the groups were divided according to positive or negative atopic heredity.

It was concluded breastfeeding is prophylactic against atopic disease including atopic eczema, food allergy, and respiratory allergy, throughout childhood and adolescence and seems to have a beneficial effect even in children with atopic heredity.

#### Comments

The role of breastfeeding and/or avoidance of cow's milk-based formulas in atopic disease in early infancy has been controversial. Genetic factors are known to be responsible for the predisposition and expression of allergic disorders, particularly if atopic heredity is from both parents; however, up to 10% of the offsprings of healthy non-atopic parents also develop atopic disease(1). Hence environmental exposure during early infancy may be particularly important for sensitization and later development of atopy. A clear association has been found between the diversity of the infant's diet during the first few months of life and subsequent development of eczema(2). Prolonged breastfeeding has been shown to be prophylactic against atopic disease up to 3 years of age by the same group(3) who conducted this prospective follow up study. Their results clearly indicate that breastfeeding can protect against atopic disease even till adolescence. The difference in substantial atopy was significant irrespective of positive or negative atopic heredity.

The study has particularly considered various well known and expected age

dependent manifestations of atopic disease in the whole cohort for comparing the results in different feeding groups. The differences were observed to be most pronounced at the age appropriate prevalence peaks of atopic eczema, food allergy and respiratory allergy. Atopic eczema was least prevalent at the age of 1-3 years in the group given prolonged breastfeeding, while there was demonstrable prevalence peak for food allergy at 3 years of age and respiratory allergy had prevalence as high as 64% up to 17 years of age in the group with short or no breastfeeding. The authors conclude that breastfeeding for 6 months or longer are required for prophylaxis of atopic eczema for the first 3 years of life. On the other hand exclusive breastfeeding for longer than 1 month without other milk supplements is beneficial in preventing food allergy with its prevalence peak at 3 years and respiratory allergy with the prevalence peak at 17 years. Since the proportion of subjects with positive atopic heredity at 17 years of age was comparable in both the groups, the authors suggest that even at the age of 17 years the differences due to infant feeding were more pronounced, suggesting an influence of early milk feeding that may exceed the heredity burden.

Breastfeeding seems to confer long term protection against allergic sensitization by inducing and promoting the natural maturation of the intestinal mucosal system. Moreover, human milk may passively reduce exposure to food antigens by inhibiting their absorption, and protect against these antigens by virtue

of local protection of the immature mucosa by secretory IgA and other immunoglobulins present in human milk, and the influence on the microbial flora of the intestine(4). In addition IgE suppressor factors have also been found in human colostrum. Even though the exact mechanism of long term protection conferred by prolonged breastfeeding is poorly understood, particularly in those with positive family history of atopy, this cohort study has further strengthened the importance of exclusive breastfeeding during early infancy.

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