

Cohort study

Longer duration of exclusive breastfeeding associated with reduced risk of childhood asthma up to age six

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Commentary on: **Silvers KM**, Frampton CM, Wickens K, *et al.* New Zealand Asthma and Allergy Cohort Study Group. Breastfeeding protects against current asthma up to 6 years of age. *J Pediatr* 2012;**160**:991–6.

Implications for practice and research

- Breastfeeding is protective against asthma throughout the early years of childhood.
- Exclusive breastfeeding for 3 months or longer was associated with reduced asthma up to 6 years, particularly in atopic children.
- Future studies should collect prospective breastfeeding data as continuous variables in months or weeks that will allow for exploratory analysis in the relationship with asthma and atopy later in childhood.

Context

Breastfeeding is recommended for all infants irrespective of atopic heredity, although epidemiological studies provide conflicting results in this debate. The protective effects of breastfeeding on asthma have been reported for young children,^{1 2} but other studies of children at high risk,³ at low risk⁴ or for adults⁵ have shown no such effects. The assumption that breastfeeding protects against asthma has been cast into doubt from these studies.

Methods

The study population consisted of children (n=1105) born in Christchurch and Wellington between 1997 and 2001 who participated in the New Zealand Asthma and Allergy Cohort Study. Data about breastfeeding was collected at birth and at 3, 6 and 15 months, assessed as duration of exclusive and any breastfeeding and modelled as continuous variables. Current asthma was defined as ever having had a doctor's diagnosis of asthma and wheeze or having used an inhaler in the last 12 months. Current wheezing was defined as any wheezing in the last 12 months. Confounding variables included gender, gestational age, study site, smoking during pregnancy, household smoking, respiratory infections and parental history of allergy. Multivariate models incorporating these variables were used to generate adjusted ORs and 95% CIs, and interaction tests were conducted for modification by atopy.

Findings

Silvers and colleagues found that after adjustment, each additional month of exclusive breastfeeding was associated with significant reductions in current wheeze at 2 and 3 years and current asthma from 2 to 6 years (all $p < 0.03$). In children who were atopic, exclusive

breastfeeding for 3 months or longer was associated with reduced asthma at ages 4, 5 and 6 years (62%, 55% and 59%, respectively).

Commentary

Strengths of the study included prospective data collection, comprehensive and precise breastfeeding data, a large study population and good retention rate with sufficient statistical power. The results of the study correspond with others on breastfeeding and asthma.^{1 6} As the results of a prospective birth cohort study design are applied to this ongoing debate, authors were able to show that breastfeeding is protective against asthma throughout the early childhood years particularly in children who were atopic.

Biologically plausible mechanisms through which breastfeeding may impact on the aetiology of asthma and atopy have been postulated with the composition of breast milk changing according to the newborns need for passive immunological protection. Indeed, several components in breast milk reduce the inflammatory response to stimuli in the newborn intestine. These components include transforming growth factor β , interleukin-10, erythropoietin and lactoferrin that act individually or pleiotropically to contain the immature anti-inflammatory response.⁷ More broadly, protection may be provided through a myriad of factors in maternal milk including bioactive enzymes, hormones, growth factors, cytokines and immunological agents that augment and stimulate host defence. Early milk has an abundance of cytokines at a time when neonatal organ systems are immature, suggesting that these bioactive components of milk may be important in neonatal development.

Competing interests None.

References

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