

Editorial

Breast is best: is research for the next best ethically acceptable?

Paediatricians have had an intermittently stormy relationship with infant formula milk companies. This has predominantly arisen because it is quite clear that the use of an infant formula, instead of human breast milk, has been one of the most important causes of preventable mortality in infancy worldwide (1). Furthermore, it has been shown that infant feeding practices influence morbidity and indeed even mortality in developed countries (2, 3). There are even suggestions that infant formula feeding may reduce later intelligence quotient (4). We, of course, also have published many papers on the beneficial effects of breast feeding in reducing the subsequent incidence of atopic eczema particularly in high-risk infants born into allergic families (5). However, not all studies suggest that breast feeding is protective as was the case in a very large Swedish cohort (6). There was a similar outcome from a Turkish ISAAC phase II study (7). Perhaps it is the duration of breast feeding which is important as suggested from a recent publication demonstrating that it was only protective if continued for at least 1 month (8). However, in the end, it is only enormously large cohort studies that will really identify the key influences of infant feeding on allergic outcomes in relation to the many other confounding factors and perhaps the KOALA birth cohort study will finally give us some definitive answers from the Netherlands (9). Indeed we have published a systematic review on this topic in a sequence of articles (10). Our final recommendations based on the systematic review was that feeding exclusively human milk for at least 4 months was associated with a lower cumulative incidence of cow's milk allergy to 18 months; eczema to 3 yr and possibly some effect on asthma though this is less clear. There was no convincing evidence for a preventive effect of maternal diet during pregnancy and lactation. Thus, dietary recommendations based on current knowledge was exclusive breast feeding preferably for 6 months but at least

4 months. This is in line with other recommendations for exclusive breast feeding in the maintenance of good health and normal development.

The key issue, however, is whether we, as allergists, and indeed paediatricians in other specialities, should conduct investigations to establish whether there is a second best recommendation in situations where breast feeding is not possible. Such studies inevitably involve interaction with infant formula milk companies. The purists would say that this is unacceptable. Indeed a very recent controversy paper has appeared which, if followed, would preclude any trials of second best infant feeding strategies (11). This article suggests that paediatricians should definitely avoid contact with any of the main breast milk substitute producers because this will undermine the drive to ensure that all babies are breastfed. I suspect that the authors of this paper have a rather inflated view of the omnipotence of paediatricians who actually have rather less impact on the choices that mothers make in relation to breast feeding in developed countries than perhaps they believe. Indeed, in the UK, breast feeding rates have remained stagnant in recent decades despite the aggressive assertions, not only of paediatricians but also UNICEF and WHO. The country that is always identified as having the most outstanding breast feeding rates is Norway. It is very apparent in understanding the differences that the major impact is likely to be the length of fully paid maternity leave rather than any impact of paediatricians. Thus if we do anything it must be to lobby our politicians to focus on this issue.

Our systematic review of prevention studies for allergy has suggested that extensively hydrolysed formulae may reduce the cumulative prevalence of cow's milk allergy and eczema, that partially hydrolysed formulae may have some effect but less than for the extensively hydrolysed formulae but that there is no evidence of a preventive effect of dietary modifications beyond 4–6 months of

age and the preventive effect has only really been effectively demonstrated in high-risk infants (10). The conclusions were that data in this area were incomplete; that quite frequently methodology employed was inappropriate; or end points were inadequately defined. This, therefore, suggested that there was a need for more prospective prevention studies in order to facilitate any recommendation of what is second best particularly for high-risk allergy families with a newborn baby. The only way in which such studies are to be conducted is by an interaction with infant formula milk companies. However, Wright and Waterston would assert that we should not be involved (11). This will stifle further research and therefore, impede any sensible recommendation of alternative infant feeding strategies. I can only agree with Weaver (12) who wrote the rejoinder to the Wright and Waterston controversy paper (11). He states that 'milk formulas are not poison any more than breast feeding is a panacea. Both have a place in infant feeding'. Like Weaver, I feel that it is entirely possible to enter into a collaboration with infant formula milk companies to set up appropriate trials conducted to the highest possible ethical standards which will contribute positively to the evidence base which we require to make appropriate recommendations on infant feeding in all circumstances including those where for various reasons breast feeding is not possible.

I have personally recently committed myself to a trial of a partially hydrolysed milk formula associated with a prebiotic in the prevention of allergy. The design of the study, rather like that of the German Infant Nutritional Intervention (GINI) programme (5), involves, in the first instance, promoting breast feeding as the best strategy for protection against allergy. However, this study also then goes on to investigate the relative values of different milk formulae where mothers have elected to bottle feed. All infants have been followed up in an identical way to establish the prevalence of atopic eczema and evidence of allergic sensitization. The ethics of the study have been submitted to extensive scrutiny and gone through an appropriate approval process. Despite this, a host of objections have been raised by a number of groups though notably in the end not UNICEF. The objections raised very much fall in line with the assertions of Wright and Waterston that any association with infant formula milk companies is unacceptable however careful the ethical scrutiny. However, it is mine and my colleague's view that studies such as this must be performed in order to identify a second best strategy for allergy prevention,

provided that optimal efforts have been made to promote the best strategy, namely breast feeding. Failure to do such studies and to address the shortcomings of previous publications, as highlighted by our systematic review, would be neglecting our duty to improve understanding and therefore, the health of our patients.

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References

1. WHO. Effect of breast feeding on infant and child mortality due to infectious disease in less developed countries: a pooled analysis. WHO Collaborative Study Team on the role of breast feeding in the prevention of infant mortality. *Lancet* 2000; 355: 451–5.
2. WILSON A, et al. Relation of infant diet to child health: 7 year follow up of cohort of children in Dundee infant feeding study. *Br Med J* 1998; 316: 21–5.
3. CHEN A, ROGAN WJ. Breast feeding and the risk of post neonatal death in the United States. *Pediatrics* 2004; 113: E435–9.
4. LUCAS A, et al. Breast milk and subsequent intelligence quotient in children born pre term. *Lancet* 1992; 339: 261–4.
5. SCHOETZAU A, et al. Effect of exclusive breast feeding and early solid food avoidance on the incidence of atopic dermatitis in high risk infants at 1 year of age. *Pediatr Allergy Immunol* 2002; 13: 234–42.
6. LUDVIGSSON JF, et al. Exclusive breast feeding and risk of atopic dermatitis in some 8300 infants. *Pediatr Allergy Immunol* 2005; 16: 201–8.
7. KUYUCU S, et al. Determinants of atopic sensitisation in Turkish school children: Effect of pre and post natal events and maternal atopy. *Pediatr Allergy Immunol* 2004; 15: 62–71.
8. SILVA JM, et al. A prospective study of wheezing in young children: the independent effects of cockroach exposure, breast feeding and allergic sensitisation. *Pediatr Allergy Immunol* 2005; 16: 393–401.
9. KUMMELING I. Etiology of atopy in infancy: the KOALA birth cohort study. *Pediatr Allergy Immunol* 2005; 16: 679–84.
10. MURARO A, et al. Dietary prevention of allergic diseases in infants and small children part I: immunologic background and criteria for hypo-allergenicity. *Pediatr Allergy Immunol* 2004; 15: 103–11. Part II: Evaluation of methods in allergy prevention studies and sensitisation markers. Definitions and diagnostic criteria of allergic diseases. *Pediatr Allergy Immunol* 2004; 15: 196–205. Part III: Critical review of published peer reviewed observational and interventional studies and final recommendations. *Pediatr Allergy Immunol* 2004; 15: 291–308.
11. WRIGHT CM, WATERSTON AJR. Relationships between paediatricians and infant formula milk companies. *Arch Dis Child* 2006; 91: 383–5.
12. WEAVER LT. Relationship between paediatricians and infant milk formula companies. *Arch Dis Child* 2006; 91: 386–7.