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[Intervention Review]

Maternal dietary antigen avoidance during pregnancy and/or lactation for preventing or treating atopic disease in the child

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ABSTRACT

Background

Some breastfed infants with atopic eczema benefit from elimination of cow milk, egg, or other antigens from their mother's diet. Maternal dietary antigens are also known to cross the placenta.

Objectives

To assess the effects of prescribing an antigen avoidance diet during pregnancy and/or lactation on maternal and infant nutrition and on the prevention or treatment of atopic disease in the child.

Search methods

We searched the Cochrane Pregnancy and Childbirth Group trials register (October 2002) and contacted researchers in the field.

Selection criteria

All randomized or quasi-randomized comparisons of maternal dietary antigen avoidance prescribed to pregnant or lactating women. We excluded trials of multimodal interventions that included manipulation of the infant's diet other than breast milk or of nondietary aspects of the infant's environment.

Data collection and analysis

We extracted data from published reports, supplemented by additional information received from the trialists we contacted.

Main results

The evidence from 4 trials involving approximately 451 participants does not suggest a protective effect of maternal dietary antigen avoidance during pregnancy on the incidence of atopic eczema during the first 12 to 18 months of life. Data on allergic rhinitis/conjunctivitis and urticaria are limited to a single trial each and are insufficient to draw meaningful inferences. Longer-term atopic outcomes have not been reported. The restricted diet during pregnancy was associated with a slightly but statistically significantly lower mean gestational weight gain, a nonsignificantly higher risk of preterm birth, and a nonsignificant reduction in mean birthweight.

The evidence from 3 trials involving approximately 210 participants suggests a protective effect of maternal antigen avoidance during lactation on the incidence and severity of atopic eczema during the first 12 to 18 months, but methodologic shortcomings argue for caution in interpretation.

One crossover trial involving 17 lactating mothers of infants with established atopic eczema found that maternal dietary antigen avoidance was associated with a nonsignificant reduction in eczema severity.

Authors' conclusions

Prescription of an antigen avoidance diet to a high-risk woman during pregnancy is unlikely to reduce substantially her child's risk of atopic diseases, and such a diet may adversely affect maternal and/or fetal nutrition. Prescription of an antigen avoidance diet to a high-risk woman during lactation may reduce her child's risk of developing atopic eczema, but better trials are needed.

Dietary antigen avoidance by lactating mothers of infants with atopic eczema may reduce the severity of the eczema, but larger trials are needed.

PLAIN LANGUAGE SUMMARY**Evidence is inadequate to advise women to avoid specific foods during pregnancy or breastfeeding to protect their children from allergic diseases like eczema and asthma**

Trials of mothers' avoidance of milk, eggs, and other potentially "antigenic" foods during pregnancy and/or breastfeeding provide inadequate evidence about whether such avoidance helps prevent atopic eczema or asthma in the child. Women who avoided eating these foods gained significantly less weight during pregnancy in the one trial reporting on this outcome, raising the possibility of adverse nutritional effects on the mother or fetus. Finally, one small trial reported an inconclusive response of breastfed infants with atopic eczema when their mothers avoided consumption of cow milk and egg.