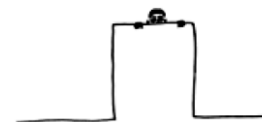


HEADS UP

edited by Craig Mellis (craig.mellis@sydney.edu.au)

**Antibody responses in infants after antenatal maternal pertussis vaccination**

A study in the United Kingdom¹ reports on antibody responses in infants born to 141 women who received tetanus, diphtheria, acellular-pertussis/inactivated polio vaccine (Tdap/IPV) during pregnancy at 28–38 weeks gestation. Antibody responses pre-vaccination (2 months) and post-vaccination (5 months) were compared against a historical cohort of infants born to mothers not vaccinated during pregnancy. Infants of Tdap/IPV-vaccinated mothers had high pertussis antibody levels at 2 months. Pertussis toxin (PT) antibodies increased post-vaccination by a ratio of 2.64 (95% CI 2.12–3.30), but filamentous haemagglutinin (FHA) antibody levels were lower (fold change 0.56; 95% CI 0.48–0.65) and fimbriae (FIM) antibodies appeared lower (non-significant). Compared with historical controls, PT (fold change 0.67; 95% CI 0.58–0.77), FHA (fold change 0.62; 95% CI 0.54–0.71) and FIM antibodies (fold change 0.51; 95% CI 0.42–0.62) were all lower post-vaccination. Antibody concentrations to Hib and tetanus were higher, while concentrations to diphtheria and some CRM (diphtheria toxin variant)-conjugated antigens were lower. The authors conclude that antenatal pertussis immunisation impaired responses to routine pertussis vaccinations and some CRM-conjugated vaccines. Despite this, the majority of infants achieved protective thresholds for conjugate vaccines. Monitoring disease rates in infants born to mothers who were vaccinated antenatally is important as there are currently no clinical correlates of protection against pertussis.

Reference

- 1 Ladhani SN *et al.* *Clin. Infect. Dis.* 2015; **61**: 1637–44.

Reviewers: Julie Huynh, julie.huynh@health.nsw.gov.au; Brendan McMullan, brendan.mcmullan@health.nsw.gov.au, Sydney Children's Hospital, Sydney

Does early introduction of allergenic foods decrease the risk of food allergies?

Rates of food allergy are increasing in children worldwide. This UK study¹ randomised 1303 exclusively breastfed infants to either early introduction to allergenic food (EIG) (introducing foods at 3 months age) or standard introduction (SIG) (introducing at 6 months age, according to parental discretion). Included foods were all six of peanut, cooked egg, cow's milk, sesame, whitefish and wheat.

Early introduction of allergenic foods did not significantly reduce the rate of challenge proven food allergy at 1–3 years of age on intention-to-treat analysis (5.6% EIG vs. 7.1% SIG, $P = 0.32$). There was a difference on *per-protocol analysis* however (2.4% EIG vs. 7.3% SIG, $P = 0.01$), and specifically for peanut and egg. This

difference was proportional to the duration and quantity of ingestion. Non-adherence to protocol was high in the EIG group (57.2%), potentially due to a very rigorous food introduction protocol, immature oromotor skills or reverse causality. Importantly, there were no serious adverse events in the EIG infants, suggesting home introduction of allergenic foods is relatively safe.

The recent LEAP study demonstrated that early introduction of peanut reduced the risk of developing peanut allergy.² While this study suggests a reduction in allergy rates with early introduction, it does not provide additional evidence beyond the current ASCIA guidelines of the introduction of solids between 4 and 6 months according to the child's development.

References

- 1 Perkin MR *et al.* *N. Engl. J. Med.* 2016; **374**: 1733–43.
- 2 Du Toit G *et al.* *N. Engl. J. Med.* 2015; **372**: 803–13.

Reviewers: Patricia Khoo, patricia.khoo@rch.org.au; Suzanne Boyce, suzanne.boyce@rch.org.au, Royal Children's Hospital, Melbourne

Hydrolysed formula not shown to prevent allergy

Allergy is big business and increasingly so. That means allergy avoidance is big business too. It is controversial whether or not early exposure to intact cow's milk protein increases allergy. Current infant feeding guidelines in Australasia, Europe and North America recommend using hydrolysed formula instead of standard cow's milk formula in the first 4–6 months after birth for primary prevention of allergy, particularly eczema. However, the evidence on which these recommendations are based, including a Cochrane review, is suspect and possibly based on fraudulent studies.¹ A systematic review commissioned by the UK Food Standards Agency identified 37 trials comparing a hydrolysed formula with breast milk, standard cow's milk formula or another hydrolysed formula.

¹ Compared with standard cow's milk, none of the partially hydrolysed formula (odds ratio (OR) 0.84, 95%CI 0.67–1.07), extensively hydrolysed casein-based formula (OR 0.55, 95%CI 0.28 to 1.09) or extensively hydrolysed whey-based formula (OR 1.12, 95%CI 0.88–1.42) reduced the risk of eczema at age 0–4 years. Hydrolysed formula could not be shown, either, to reduce the risk of allergy to cow's milk or other foods, recurrent wheeze or allergic rhinitis and is no longer recommended to prevent allergy. The Food Standards Agency has also commissioned a review of the use of amino acid-based formulas.

References

- 1 Boyle RJ *et al.* *BMJ* 2016; **352**: i974 Link: <http://www.bmj.com/content/352/bmj.i974>.