

Asthma comorbidities and making progress with food allergy

Asthma is a challenging long-term condition for patients, even more so when they have coexisting conditions. In this month's issue of the Journal, Weatherburn et al aim to assess the prevalence of coexisting physical and mental health problems in adults with asthma. They used a United Kingdom primary care records data set.¹ Records for over a million adults were analysed with adjustments being made for age, sex, social deprivation and smoking status. Almost all the 39 coexisting conditions assessed were more common in adults with asthma. The majority had at least one coexisting problem. Hypertension, pain, chronic obstructive pulmonary disease, depression and dyspepsia were the commonest, all seen significantly more frequently in adults with asthma. Given that most of these will directly impact on a patient's quality of life, we need to be aware of these co-existing issues and ensure that patients have a holistic management plan that deals with the breadth of their illnesses.

We can now really dissect both the humoral and cellular immune responses allowing research groups to look at the similarities and differences between the various compartments. Seppo et al² have found different epitope specificity between specific IgE to cow's milk in mothers' breastmilk and sera (Figure 1). Epitope-specific IgA was seen in their infants' sera at less than 3 months of age. Mothers with cow's milk allergy had sera with higher binding of epitope-specific IgA to cow's milk proteins than those with a non-allergic infant. So it seems that maternal milk has a different antibody repertoire to cow's milk compared to peripheral blood IgA, and difference repertoires may also be associated with the development of cow's milk allergy in offspring.

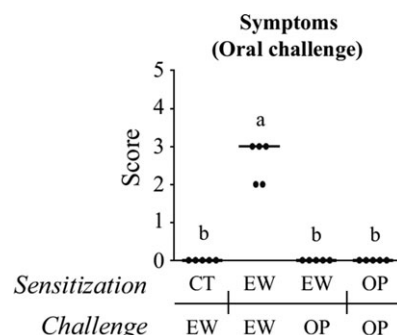


FIGURE 2 Symptom scores after challenge in mouse egg allergy model with cholera toxin (CT), egg white (EW) or hydrolysate of OVA with pepsin (OP) [see Figure 2 in Lozano-Ojalvo et al (pp. 1342-1354)]

Continuing with food allergy, Lozano-Ojalvo et al³ have looked at an ovalbumin hydrolysate selected for its low IgE reactivity but Th-2 stimulating activity. The hydrolysate failed to induce sensitisation in a BALB/c mouse model. In an egg allergy mouse model, the hydrolysate induced Treg cells and upregulated TGF- β , IL-10, IL-17, Foxp3 and ROR γ t in the intestine resulting in more effective desensitisation than with intact ovalbumin (Figure 2). This is a promising as a novel potential approach for food allergy oral immunotherapy.

Finally, I hope that you are enjoying the British Society of Allergy and Clinical Immunology (BSACI) annual meeting in Telford, UK.

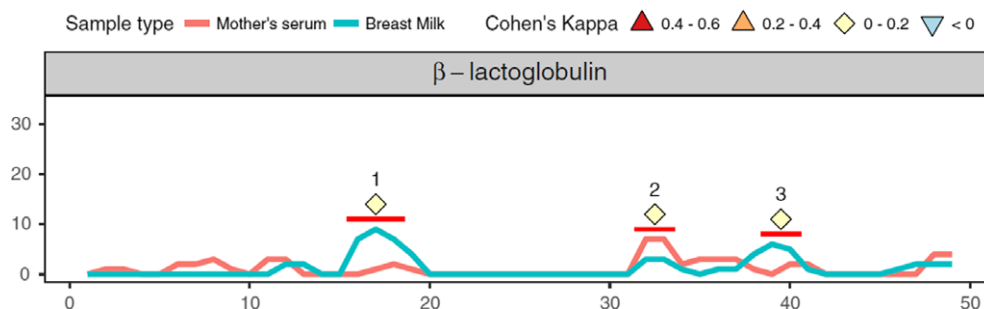


FIGURE 1 Concordance between milk protein epitope recognition by IgA in paired mother's serum and breastmilk samples [see Figure 2 in Seppo et al (pp. 1275-1284)]

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3. Lozano-Ojalvo D, Pérez-Rodríguez L, Pablos-Tanarro A, Molina E, López-Fandiño R. Hydrolysed ovalbumin offers more effective preventive and therapeutic protection against egg allergy than the intact protein. *Clin Exp Allergy*. 2017;47:1342-1354.