Differential rates of oral food challenge response in children with equivocal history of milk and egg allergy

Aziza Saidova\textsuperscript{1,2}, Eleonora Dehlink\textsuperscript{3}, Saskia Gruber\textsuperscript{1}, Thomas Eiwegger\textsuperscript{1,3}, Zsolt Szépfalusy\textsuperscript{1}

\textsuperscript{1}Department of Pediatrics and Adolescent Medicine, Medical University of Vienna, Austria; \textsuperscript{2}First Department of Hospital Pediatrics, Tashkent Pediatric Medical Institute, Uzbekistan; \textsuperscript{3}Division of Immunology and Allergy, Food Allergy and Anaphylaxis Program, Department of Pediatrics, Hospital for Sick Children, University of Toronto, Canada

**Background:** Oral food challenge (OFC) is the diagnostic 'gold standard' of food allergies, but it is labor and time intensive. Attempts to predict a positive OFC through specific IgE assays or conventional skin tests are helpful in certain cases but only suboptimal tools for the prediction of allergic reactions in particular for milk and egg in the light of natural tolerance development.

**Aim:** We aim to look for differences regarding reactivity based on a retrospective analysis of reactivity and specific IgE levels in patients that meet the criteria for an oral food challenge to cow's milk and hen’s egg based on current consensus criteria.

**Methods:** A retrospective analysis of patient charts of forty-two children who either had an oral food challenge with cow's milk (CM, mean age 32.5 months) and on forty-seven children who had an OFC with hen’s egg (HE, mean age 41.3 months) at the Department of Pediatrics and Adolescent Medicine, Medical University of Vienna were analysed.

**Results:** OFC was positive for CM in 15/43 (35%, mean age 32.1 months) for HE in 29/47 (62%, mean age 45.5 months) children. The area under the ROC curve for CM and HE was 0.78 and 0.8 respectively. Mean specific IgE levels were almost identical in both groups (16.1 vs. 16.2kUa/l) but specific IgE was more predictive for reactivity in the egg allergic group in children with equivocal history.

**Conclusion:** Food challenges prove very important in the context of milk allergy to appropriately un-label children with equivocal history. However, specific IgE levels are more predictive for hen’s egg than for cow’s milk in this subgroup.