The safety and efficacy of a strictly structured gradual exposure protocol to baked and heated milk in the treatment of milk allergic children

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Introduction
A significant proportion of milk allergic children can tolerate extensively heated and baked milk (EHBMs). Exposure to these food products may promote tolerance to unheated milk, however, no consensus exists as to the appropriate treatment protocols utilizing EHBMs for children with milk allergy. We retrospectively evaluated a well-controlled and structured gradual exposure protocol (SGEP) with EHBMs for the treatment of children with CMA.

Methods
In a case control study, milk allergic children aged 1-4 years of age who were treated with a SGEP-EHBMs were compared to children treated with strict avoidance at least until 4 years of age. Data was collected from medical records of children in community and hospital based allergy clinics and from validated telephone questionnaires. Data analysis was performed using nominal logistic regression, the Cox proportional hazard model and generalized regression after an evaluation of the matched case control criteria with propensity scores.

Results
42 milk allergic children, 26(62%) males, mean age at intervention 21 months (12-47), were treated with SGEP-EHBMs and followed to a mean age of 48 months (24-88). The mean age at resolution of CMA in this intervention group, was compared to a group of 68 milk allergic children following strict avoidance at least until 4 years of age and followed to a mean age of 71 months. We matched for baseline characteristics such as tolerance to heated milk, presence of Atopic Dermatitis (36% vs 29% controls), asthma (36% vs 28% controls) and initial anaphylaxis to milk (40% treated vs 40% controls.) The mean age of resolution of allergy in treated children was 34 months vs 57 months in control group (p< 0.05). At last follow up, 86% of treated children were tolerant to unheated milk vs 52% in controls. In the intervention group, there were no adverse events requiring self-administration of epinephrine during or after completion of SGEP.

Conclusion
A structured protocol with EHBMs appears to be safe and to promote faster resolution of CMA.