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UNC FOOD ALLERGY INITIATIVE NEWSLETTER

SUNBEAM

Systems Biology of Early Atopy

SCAN ME

We are recruiting for an exciting study called Systems Biology of Early Atopy (SUNBEAM). The study is sponsored and funded by the National Institute of Allergy and Infectious Disease (NIAID). SUNBEAM is looking to identify factors during the prenatal period and early childhood that may increase risk to develop food allergy and eczema. At 12 sites nationwide, the SUNBEAM study will enroll at least 2500 pregnant women, the biological father and their child, who will be followed from birth to 3 years old. We hope to enroll 250 families at UNC. Participating families provide biological samples and samples from their home environment, as well as complete questionnaires on health history, allergies, and diet. The children are periodically assessed for eczema and food allergy. We hope this study will help us understand what leads to the development of food allergy and other allergic conditions. If you or someone you know is interested in participating in the SUNBEAM study, please email sunbeam@unc.edu.

Congratulations!

Lauren Herlihy will be graduating with her Doctorate in Nursing Practice this December. Lauren's thesis: Early Peanut Introduction in Infants to Prevent Peanut Allergy. Lauren also won second place in the 3M Thesis competition at UNC!

Jada Suber, a PhD student in the Iweala and Burks labs, successfully defended her dissertation this past November 2022.

Please help us in welcoming **JENNY GARTRELL & JULIE SEUNG** *to our Food Allergy group!*

Jenny joined our group this month as a Clinical Research Coordinator.

Julie joined our group in July as a Research Assistant.

Could Xolair Be the First Biologic Treatment for Food Allergies?

Biologic medications that neutralize IgE antibodies have long been considered a promising food allergy treatment. Now, one such medication – omalizumab (or Xolair) – looks likely to become the first "anti-IgE" biologic drug contender to treat multiple food allergies.

Researchers from the Consortium of Food Allergy Research are studying omalizumab in two ways for child and adult patients. The first is as a standalone treatment to protect against reacting to accidental exposures in those with allergies to peanut plus two or more other foods: milk, egg, wheat, cashew, hazelnut or walnut. The second method is as an add-on treatment for oral immunotherapy (OIT) to reduce adverse reactions and improve safety.

"If this drug works, it's very likely to work for exposures to at least small amounts of any foods, where people could eat out without having to worry," says Dr. Robert Wood. He's the trial's principal investigator and director of pediatric allergy and immunology at Johns Hopkins Medicine in Baltimore.
It's quite possible omalizumab could help people safely eat more than small amounts of their allergens – perhaps even introducing these foods into their diets.

Read Full Article on Allergic Living website: https://www.allergicliving.com/2022/10/14/could-xolair-be-the-first-biologic-treatment-for-food-allergies/

Updates in the Iweala Lab

Two recent publications:

The Meat of the Matter: Understanding and Managing Alpha-Gal Syndrome, PMID: 36134173. Dr. Jess Macdougall (one of our current allergy fellows within FAI) is co-first author along with a recent UNC graduate, Kevin Thomas, UNC Class of 2022.

Novel peanut-specific human IgE monoclonal antibodies enable screens for inhibitors of the effector phase in food allergy, PMID 36248809, Jada Suber, a senior graduate student within my lab and Burks lab is first author of this paper.

PEANUT ORAL IMMUNOTHERAPY INCREASES "PROTECTIVE ANTIBODIES" IN SALIVA

Peanut oral immunotherapy (OIT) was recently approved by the FDA for peanut allergy, following a successful Phase 3 trial. Several immune markers have been quantified in the serum throughout therapy, including peanut-specific IgE, IgG4, and IgA. Typically, peanut-specific IgE increases initially and then decreases later in therapy, while peanut-specific IgG4 and IgA increase sharply and throughout therapy. While these changes are consistently observed with treatment, they have had little success when used as biomarkers to predict OIT outcomes. However, since OIT is administered at the oral and gastrointestinal mucosal surfaces, antigen-specific immunoglobulin responses at these sites may be more informative.

In a paper recently published in The Journal of Allergy and Clinical Immunology: In Practice, Dr. Johanna Smeekens (first author), along with Drs. Mike Kulis, Edwin Kim, and Wesley Burks from the UNC FAI quantified salivary peanut-specific and total IgG4 and IgA in participants from the Immune Tolerance Network's IMPACT study, a phase 2 randomized, placebo-controlled trial of peanut OIT in children aged 12-48 months. Participants who received OIT had increased peanut-specific IgG4 and IgA in saliva compared to participants who were on placebo. During OIT, desensitized participants had increased peanut-specific IgA that plateaued, whereas the participants that failed did not change over time. Here, although the sample size of groups stratified by clinical outcome was relatively small, we demonstrated that high levels of peanut-specific IgA in saliva at baseline may indicate decreased likelihood of desensitization, which would be an impactful predictor. Similarly, increases in peanut-specific IgA within 30 weeks of starting OIT may be utilized to monitor successful outcomes. These data provide insight into OIT-induced mucosal responses and suggest the utility of these easily obtained samples for biomarker development.

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POSEIDEN

Results of the phase 3 POSEIDEN study of peanut OIT in children ages 1-3 years were presented for the first time at the 2022 ACAAI meeting. Looking at 146 peanut-allergic children, POSEIDEN showed that 73.5% of the kids were safely able to eat 1043 mg of peanut, ~2 peanut kernels, after 12 months of treatment. Furthermore, 68% of kids were able to eat as high as 2043 mg without dose limiting symptoms. Allergic side effects were seen in most treated kids as is common with OIT treatments, however there seemed to be fewer severe side effects than seen with older 4-17 year old kids. Building on the known efficacy of the FDA-approved Palforzia drug, this study supports a further advantage in both efficacy and safety when treating earlier in childhood that could benefit children moving forward.

To read the full article, please visit: https://www.medscape.com/viewarticle/984053

RESULTS SHARED AT THE ANNUAL AMERICAN COLLEGE OF ALLERGY, ASTHMA, AND IMMUNOLOGY (ACAAI) SCIENTIFIC MEETING

LOUISVILLE, KY | NOV. 10-14, 2022

EPITOPE

Results of the phase 3 EPITOPE study of peanut Epicutaneous immunotherapy (EPIT) in children ages 1-3 years were presented for the first time at the 2022 ACAAI meeting. Looking at 362 peanut-allergic children, EPITOPE treated the kids with the "peanut patch" that administered 250 micrograms of peanut daily through the skin. 67% of the treated kids met responder criteria and 64.2% of kids ate at least 1000 mg of peanut before developing allergic symptoms after 12 months of treatment. Most kids experience side effects at the patch site but severe allergic reactions were uncommon. Considering these data combined with the advantages of a simple treatment application and infrequent allergy office visits, EPIT may be a good treatment option for young 1-3 year old peanut-allergic children.

To read the full article, please visit: https://www.medscape.com/viewarticle/984077