

Session/Poster#

Presenter

A01

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Adult food allergy association with obesity in the NHANES 2005-2006 database

Introduction: As food allergy and obesity are increasingly prevalent, investigation of their relationship is warranted. This study investigated obesity in relation to adult sensitizations to shrimp, peanut, egg, and milk.

Methods: The NHANES 2005-2006 database, (n=10,348, age >20 years), was used to determine the association between BMI ≥ 30 kg/m² and sensitization to shrimp, egg, peanut, and milk, with food specific IgE ≥ 0.35 kU/L. Covariates included age, sex, race/ethnicity, education and household income. Statistical analyses were conducted with logistic regression, chi-square and Mann-Whitney U tests. Sensitivity analysis excluded DM sensitization.

Results: In fully adjusted models, obesity increased odds of milk sensitization, IgE >0.35 kU/L, (OR=1.396, 95% CI 1.021-1.910, p=0.037). Obesity didn't predict shrimp (OR=1.215, 95% CI 0.962-1.533, p=0.102), peanut (OR=1.136, 95% CI 0.911-1.416, p=0.258) and egg (OR=1.393, 95% CI 0.978-1.985, p=0.066) sensitization. A gender interaction effect was found. For women only, obesity increased odds of shrimp (OR=1.555, 95% CI 1.063-2.276, p=0.023), peanut (OR=1.563, 95% CI 1.102-2.217, p=0.012), and milk allergy (OR=1.724, 95% CI 1.063-2.793, p=0.027). Not having D. farinae or D. pteronyssinus sensitization increased odds (OR: 2.322, 95%CI 1.086-4.963, p<0.030; 2.009, 95% CI 1.105-3.363, p<0.02, respectively) of obesity leading to shrimp sensitization.

Conclusion: Using nationally representative data, sex modified the obesity - food allergy relationship. Obese women had higher odds of adult sensitizations to shrimp, peanut, and milk. Independent of pre-existing DM cross-reactivity, removing DM sensitization increases odds of shrimp sensitization in both genders, reinforcing a direct effect of obesity on shrimp allergy presence.