Allergic sensitization to cat in childhood as major predictor of incident respiratory allergy in young adults.

Abstract: BACKGROUND: Little is known on the predictive value of sensitization to specific aeroallergens in children with respect to asthma and hay fever incidence in young adulthood. We followed the incidence of asthma and hay fever in children (mean age 11 years) over 9 years, and analyzed the predictive value of sensitization to five common aeroallergens. METHODS: Three consecutive surveys were conducted in East German school children. Specific IgE antibodies to birch and timothy grass pollen, house dust mite, cat, and cladosporium were measured. In 1207 out of the 2453 children, the 9-year incidence of asthma and hay fever was assessed by reported doctors’ diagnoses. For sensitization, diagnostic parameters were determined and logistic regression analyses controlled for relevant confounders. RESULTS: A total of 176/78 incident hay fever/asthma cases occurred equaling a cumulative incidence of 1.93/0.86% per year. Incident asthma was associated with previous sensitization to cat [risk ratio (RR) 3.49, 1.57-7.74] and grass pollen (RR 1.79, 1.01-3.19), whereas incident hay fever was associated with each allergen, with grass pollen (RR 6.00, 4.04-8.90) and cat (RR 5.36, 2.87-9.99) exhibiting the strongest associations. When mutually adjusting for all allergens, sensitization to cat remained significantly associated with asthma and hay fever. The latter was also associated with sensitization to grass pollen.
highest positive predictive values for asthma and hay fever were obtained for cat sensitization (10/49 = 20.4% and 23/49 = 46.9%). CONCLUSIONS: Childhood sensitization to cat and grass pollen predicts the incidence of asthma and hay fever in young adulthood. The predictive capacity differs by allergen and manifestation of atopy.