Atopic disease and its determinants -- a focus on the potential role of childhood infection.

BACKGROUND: Atopic diseases develop on a genetic background and are modulated by environmental factors among which some infectious diseases are thought to have a protective influence. OBJECTIVE: The aim of this study was to determine the influence of infectious diseases in younger ages, bacterial and viral, on atopic diseases and sensitization to aero- and food-allergens in adults. METHODS: A population-based sample of 4262 subjects aged 25-74 years were interviewed concerning their history of infectious disease within the first 18 years of life. Information about allergic disease, including atopic eczema, allergic rhinitis (AR), and asthma was obtained. A blood sample was drawn and analysed for allergen-specific IgE antibodies against food- and aero-allergens. RESULTS: Multiple logistic regression analyses identified viral infection to be associated with AR (adjusted odds ratio (OR) = 1.39; 95% confidence interval (95% CI): 1.13-1.72) and sensitization to aeroallergens (OR = 1.21; 95% CI: 1.05-1.41). Bacterial disease was a negative predictor for atopy development in the subgroup of patients sensitized to nutritional allergens with concomitant atopic eczema (OR = 0.34; 95% CI: 0.11-0.99), AR (OR = 0.67; 95% CI: 0.42-1.07), or asthma (OR = 0.41; 95% CI: 0.19-0.87). Influences of viral and bacterial infection on AR differed
with regard to family history of atopic disease. CONCLUSION: In our study population, history of viral
infection was consistently positively associated with AR. Our data suggests that bacterial infections
might be preventive for specific subgroups of atopy.

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