Allergic Disease and Atopic Sensitization in Children in Relation to Measles Vaccination and Measles Infection

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ABSTRACT

OBJECTIVE. Our aim was to investigate the role of measles vaccination and measles infection in the development of allergic disease and atopic sensitization.

METHODS. A total of 14,893 children were included from the cross-sectional, multicenter Prevention of Allergy–Risk Factors for Sensitization in Children Related to Farming and Anthroposophic Lifestyle study, conducted in 5 European countries (Austria, Germany, the Netherlands, Sweden, and Switzerland). The children were between 5 and 13 years of age and represented farm children, Steiner-school children, and 2 reference groups. Children attending Steiner schools often have an anthroposophic (holistic) lifestyle in which some immunizations are avoided or postponed. Parental questionnaires provided information on exposure and lifestyle factors as well as symptoms and diagnoses in the children. A sample of the children was invited for additional tests, and 4,049 children provided a blood sample for immunoglobulin E analyses. Only children with complete information on measles vaccination and infection were included in the analyses (84%).

RESULTS. In the whole group of children, atopic sensitization was inversely associated with measles infection, and a similar tendency was seen for measles vaccination. To reduce risks of disease-related modification of exposure, children who reported symptoms of wheezing and/or eczema debuting during first year of life were excluded from some analyses. After this exclusion, inverse associations were observed between measles infection and “any allergic symptom” and “any diagnosis of allergy by a physician.” However, no associations were found between measles vaccination and allergic disease.

CONCLUSION. Our data suggest that measles infection may protect against allergic disease in children. Pediatrics 2009;123:771–778

THE PREVALENCE OF immunoglobulin E (IgE)-mediated allergic disease in children has increased during the past decades, although recent reports suggest that the occurrence has stabilized. Because allergic diseases mostly debut in childhood, it is of great interest to study exposures that occur early in life and could have an effect on the maturation of the immune system. The occurrence of many types of childhood infections has decreased markedly during past decades because of...