

Early childhood risk factors for rhinoconjunctivitis in adolescence; A prospective birth cohort study

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Background: Rhinoconjunctivitis is a global health problem and one of the most common chronic conditions in children. Development of rhinoconjunctivitis including allergic rhinoconjunctivitis depends on both genetic and environmental factors. Many studies have investigated rhinitis, but only a few have evaluated the risk factors for non-allergic rhinoconjunctivitis in children and found family history of atopic diseases and gender to be of importance.

Aim: To investigate possible risk factors in early life for rhinoconjunctivitis, allergic as well as non-allergic, in adolescence.

Methods: The children in the DARC birth cohort were examined at 0, 3, 6, 9, 12, 18 months and 3, 6 and 14 years. Visits included questionnaire-based interview, clinical examination, skin prick test and measurement of specific IgE. We used bivariate and univariate logistic regression to investigate the relationship between risk factors before the age of 3 and the development of rhinoconjunctivitis, allergic as well as non-allergic, in adolescence.

Results: Follow-up rate at 14-years was 66.2%. The one year period prevalence of rhinoconjunctivitis was 32.8%. Family history of atopic diseases (aOR 2.23, CI:1.26-3.96), atopic dermatitis (aOR 3.16, CI:1.68-5.93), food allergy (aOR 3.88, CI:1.08-14.05), early sensitization to inhalant - and food allergens with a cut-off value of s-IgE at 0.70 kU/l (aOR 2.93, CI:1.44-5.99 and aOR 3.14 CI:1.41-6.97 respectively) and male gender (aOR 1.92, CI:1.07-3.44) were associated with allergic rhinoconjunctivitis but not non-allergic rhinoconjunctivitis. Early environmental tobacco exposure was inversely associated with rhinoconjunctivitis (aOR 0.42 CI:0.26-0.69), allergic (aOR 0.47 CI:0.27-0.84) as well as non-allergic aOR 0.44 CI:0.21-0.93).

Conclusion: Different patterns of associations were revealed when stratifying rhinoconjunctivitis in allergic and non-allergic which suggest that allergic rhinoconjunctivitis and non-allergic rhinoconjunctivitis are different phenotypes.