

Publication

Interaction between asthma and smoking increases the risk of adult airway obstruction

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The aim of the present study was to analyse the interaction between asthma and smoking in the risk of adult airway obstruction, accounting for atopy. In the European Community Respiratory Health Survey, 15 668 persons aged 20-56 years underwent spirometry in 1991-1993 and 9 years later (n=8916). Risk of airway obstruction and lung function decline associated with smoking and early-onset (>10 years of age) and late-onset (<10 years of age) asthma were analysed with generalised estimating equation models and random-effect linear models, adjusting for covariates. Interaction of asthma with smoking was expressed as relative excess risk due to interaction (RERI). A 20-fold increase in adult airway obstruction was found among those with early-onset asthma independently of smoking status (never-smokers: OR 21.0, 95% CI 12.7-35; current smokers: OR 23.7, 95% CI 13.9-40.6). Late-onset asthma was associated with airway obstruction, with a stronger association among current smokers (OR 25.6, 95% CI 15.6-41.9) than among never-smokers (OR 11.2, 95% CI 6.8-18.6) (RERI 12.02, 95% CI 1.96-22.07). Stratifying by atopy, the association between smoking and asthma was most pronounced among nonatopics. Early- and late-onset asthma were associated with 10-20-fold increased risk of adult airway obstruction. Smoking increased the risk of adult airway obstruction in subjects with asthma onset after age 10 years. Investigation of measures potentially preventive of chronic obstructive pulmonary disease development following asthma is urgently needed.

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