Volume 359, Issue 9309, 9 March 2002, Pages 831-834

Articles

Frequency, severity, and duration of rhinovirus infections in asthmatic and non-asthmatic individuals: a longitudinal cohort study

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https://doi.org/10.1016/S0140-6736(02)07953-9

Summary

Background

Rhinovirus infections cause exacerbations of asthma. We postulated that people with asthma are more susceptible to rhinovirus infection than people without the disease and compared the susceptibility of these groups.

Methods

We recruited 76 cohabiting couples. One person in every couple had atopic asthma and

one was healthy. Participants completed daily diary cards of upper-respiratory-tract (URT) and lower-respiratory-tract (LRT) symptoms and measured peak expiratory flow twice daily. Every 2 weeks nasal aspirates were taken and examined for rhinovirus. Mixed models were used to compare risks of infection between groups. We also compared the severity and duration of infections.

Findings

We analysed 753 samples. Rhinovirus was detected in 10Â·1% (38/378) of samples from participants with asthma and 8Â·5% (32/375) of samples from healthy participants. After adjustment for confounding factors, asthma did not sinificantly increase risk of infection (odds ratio 1Â·15, 95% CI 0Â·71â€“1Â·87). Groups did not differ in frequency, severity, or duration of URT infections or symptoms associated with rhinovirus infection. First rhinovirus infection was associated more frequently with LRT infection in participants with asthma than in healthy individuals (12 of 28 infections vs four of 23, respectively, p=0Â·051). Symptoms of LRT associated with rhinovirus infection were sinificantly more severe (p=0Â·001) and longer-lasting in participants with asthma than in healthy participants (p=0Â·005).

Interpretation

People with atopic asthma are not at greater risk of rhinovirus infection than healthy individuals but suffer from more frequent LRT infections and have more severe and longer-lasting LRT symptoms.

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