Asthma Control and Cold-Related Respiratory Symptoms

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Background

In the northern hemisphere people are exposed recurrently to cold air and previous studies have shown that asthmatics experience respiratory symptoms in cold more than people without asthma (Harju et al. 2010, Hyrkäs et al. 2014). The association between asthma control and the occurrence of cold-related respiratory symptoms has not been studied previously. We hypothesized that subjects with poor asthma control are more prone to experience cold-related symptoms than those with good asthma control.

Methods

The Northern Finnish Asthma Study (NoFAS) was initiated in 2012 as a population-based cross-sectional study of 1995 17-73 year old adults with asthma living in the Northern Finland. Cold-related respiratory symptoms (shortness of breath, cough, wheezing, phlegm production and chest pain) as well as questions related to asthma control were assessed by a questionnaire. The Asthma Control Test (ACT) was defined based on five questions (disadvantage and occurrence of asthma symptoms, waking up for asthma symptoms, use of rescue medication and self-assessment of asthma control during the past 4 weeks), and was divided into quartiles where the highest represented complete control of asthma.

Results

Reporting of cold-related respiratory symptoms was higher among asthmatics with poorly controlled asthma (ACT Q1 vs. ACT Q4); adjusted prevalence ratio (PR) for shortness of breath (men 1.47, 95% confidence interval 1.21-1.77; women 1.18, 1.07-1.30), cough (men 1.10, 0.91-1.34; women 1.18, 1.08-1.30), wheezing (men 1.91, 1.31-2.78; women 1.48, 1.17-1.87), phlegm production (men 1.51, 1.06-2.14; women 1.62, 1.27-2.08) and chest pain (men 4.47, 1.89-10.56; women 2.60, 1.64-4.12). The occurrence of symptoms increased with worsening asthma control.

Conclusions

Our study indicates that subjects whose asthma is poorly controlled are more prone to cold-weather related respiratory symptoms and even a slight worsening of asthma control increases symptom prevalence.

References


Hyrkas H, Jaakkola MS, Ikaheimo TM, Hugg TT, Jaakkola JJ. Asthma and allergic rhinitis increase respiratory symptoms in cold weather among young adults. Respir Med 2014; 108:63-70