

ETHNICITY AND ATOPY: THE PREVALENCE OF RHINITIS AND OTHER ALLERGY AMONGST PATIENTS WITH EPIDEMIC THUNDERSTORM ASTHMA

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Introduction: In November 2016, Melbourne experienced the world's most devastating episode of epidemic thunderstorm asthma (ETSA). Allergic rhinitis and grass pollen allergy have been associated with ETSA. The aim of our study was to characterise the prevalence of rhinitis, asthma, undiagnosed asthma and previous allergy in ETSA patients who presented to emergency departments (ED) and whether this relates to their ethnicity.

Methods: ED respiratory presentations at Eastern and Monash Health (east and southeast Melbourne) were reviewed. Those with ED records indicating acute asthma were included. A standardised questionnaire was developed to assess ethnicity; prevalence of asthma; prevalence of undiagnosed asthma; prevalence of rhinitis; and history of previous allergy. Variation in characteristics between ethnicity was evaluated.

Results: 599 of 779 patients (76.9%) with ETSA completed the questionnaire; 55% ($n = 330$) were male with mean age of 30.6 ± 18.8 years. 86% ($n = 513$) had a history of rhinitis, while only 42% ($n = 250$) had a history of asthma. 26% ($n = 158$) had symptoms to suggest undiagnosed asthma. 50% ($n = 298$) had a history of grass pollen allergy. 40% ($n = 237$) identified themselves as Caucasian, 22% ($n = 129$) Asian, 25% ($n = 150$) Indian and 14% ($n = 83$) other. Patients of Asian and Indian ethnicity were older (mean age 34.74 ± 18.9 and 36.74 ± 15.6 respectively, $P < 0.0001$). They also had higher rates of rhinitis (91% and 91%, $P = 0.019$) and lower rates of asthma (37% and 29%, $P = 0.0004$). Those of Indian ethnicity reported higher rates of grass pollen allergy (61%, $P = 0.01$).

Conclusion: Rhinitis appears to be a risk factor for ED presentation with ETSA. Individuals with Asian and Indian ethnicity had higher rates of rhinitis and were more likely to be affected by ETSA. Asthma prevalence was low amongst ETSA patients, however a large proportion had undiagnosed asthma. Better asthma detection and rhinitis control, especially in those of Indian and Asian ethnicity may reduce the burden of ETSA.