Update on the Prevalence of Allergic Sensitization to Russian thistle in South-eastern Ontario; a Retrospective Chart Review

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Introduction

Allergic rhinitis and allergen-induced asthma often occur concomitantly and are thought to be a part of the same spectrum of disease. Allergens induced asthma and allergic rhinitis are caused by an immunoglobulin E (IgE)-mediated reaction to the protein and glycoprotein components of infested aeroallergens such as pollens, mounds and animal dander. The prevalence of allergic rhinitis and allergen induced asthma is increasing. It is believed that up to 40% of adults suffer from allergic rhinitis and 75% of adults with asthma have an allergic component.

Methods

A retrospective chart review was conducted at the Queen’s University Allergy and Immunology clinic representing patients residing in Kingston and the South-eastern Ontario catchment area. Patients age, gender, skin test reaction and the presence or absence of clinical features were recorded. Relevant clinical symptoms were documented as well as the rate of sensitization amongst tested individuals. Specific clinical parameters on history included nasal congestion, sneezing, rhinorrhea and pruritis of the nose, eyes, palate for allergic rhinitis. Wheezing, chest tightness and cough were clinical detection parameters for asthma.

A standardized extract to Russian thistle (Holliester-Steir) was used in all tested patients. Only patients with appropriate histamine responses were included in our data. We collected demographic data in addition to the presence/absence of relevant clinical symptoms.

Results

• 609 charts were reviewed in the Queen’s University Allergy and Immunology Clinic
• 304 of these patients were skin tested for Russian thistle using a standardized allergen reagent (n=304)
• Of these, 13.8% (43) were found to have a positive skin test to Russian thistle when compared to an appropriate histamine skin-test response

Discussion

• The data suggests that Russian thistle in this particular studied area yields a positive skin test result in ~14% of skin tested patients (in an unselected patient population)
• Almost all patients with a positive skin test were clinically symptomatic with either allergic rhinitis and/or asthma
• Among these, over 40% had symptoms that seasonally correlated with the predominant Russian thistle season between August-October
• More females had positive reactions than males amongst the skin-tested positive cohort
• There may be utility in testing patients with known ragweed and birch allergies to Russian thistle, given the rates of cross-reactivity

Conclusions

• Of the skin-test positive cohort, 86% were found to be symptomatic based on history, having clinical features consistent with allergic rhinitis or asthma
• 41% of the skin test positive individuals had symptoms that correlated seasonally with the predominant Russian thistle pollen season (August-October)
• 93% of individuals with positive skin tests to RT had concomitant positive skin test to ragweed
• The median age of skin-test positive individuals was 38 years and mean age was found to be 35 years

Figure 2: Rates of cross-reactivity and overlap

Cross reactivity: Birch, ragweed and kiwi are described antigens with known cross reactivity

• Of the skin-test positive cohort, 93% had concomitant positive skin tests to ragweed
• 58% of the skin test positive cohort also had positive tests to birch

Figure 2: Russian Thistle