

Prevalence and Sensitization to weeds Pollen in Saudi Arabia

Abstract Text

Background: In an aerobiological study, airborne pollen grains from weeds emerged to be the most dominant and prevalent pollen type in Saudi Arabia. Therefore, we conducted Skin Prick Test (SPT) on 500 allergenic individuals to examine IgE mediated sensitization level to a number of weeds allergens.

Method: SPT on 500 individuals having asthma and other allergic manifestations attending allergy clinics in six different regions was conducted using commercial extracts. The selection of allergens was made after an extensive nation wide aerobiological survey using Burkard Volumetric Spore Traps. The major pollen components of the Kingdom's environment were identified as *Amaranthus viridis.*, *Atriplex polycarpa*, *Chenopodium album*, *Cyperus rotundus*, *Rumex crispus* and *Plantago spp.*

Results: The SPT data revealed a comparatively higher degree of sensitization to weeds pollen. In the south, mountainous region (Abha), 21.8%, while in an agricultural setting (Gassim) 75.5% patients reacted to weeds pollen. In an another location in the Eastern region (Hofuf) 16.7% of the patients while close to Red Sea region (Gizan) 9% of the patients reacted positively to various weeds pollen, which included *Atriplex polycarpa*, *Chenopodium album*, *Salsola tennifolia* and *Rumex crispus*. Individual pollen revealed *Chenopodium album* with maximum reactivity (81.8%) in agriculture setting (Gassim) followed by *Salsola tennifolia* (75.5%), (25% Al-Hofuf), *Rumex crispus* 27.3% (Gassim) and 18.1% (Gizan). Apart from *Cynodon dactylon*, a grass pollen and *Prosopis juliflora*, a tree pollen, highest skin reactivities were recorded by members of the *chenopodiace* weeds in all regions.

Conclusions: The study indicates that sensitization and exacerbation of symptoms in patients during pollination season may be caused by desert weeds growing in the Kingdom, and may possibly be a major contributor of respiratory allergy in Saudi Arabia.

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