

Day 1 Monday 29 Shawal 1427 (20 November 2006)

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Test profile for allergy & asthma: Role of aeroallergens

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ABSTRACT :

Since aeroallergens are considered to be extremely important cause in IgE mediated hypersensitivity reactions, particularly bronchial asthma and allergic rhinitis, diagnostic test profile of a region need to be based on the exposure possibility for accurate diagnosis and treatment. This can be achieved by studying the regional environment for multiple allergenic factors originating from both outdoor and indoor biological sources. Aeroallergens and their fragments having aerodynamic size, ranging from 3 μ m to 40 μ m in diameter, can be easily inhaled through nose and/or mouth during normal and fast breathing. These inhalants can show 10-100 folds increase in their airborne concentrations with increased human activities such lawn moving, dusting, bed making, vacuuming etc. causing a greater risk of exposure and sensitization. The quality and quantity of aeroallergens vary from place to place and region to region and fluctuate with geography, climate, temperature and humidity. There appear to be a threshold, possibly different for each allergen, in order to sensitize a susceptible individual. However, once the sensitization has taken place in a subject, even a lower concentration may provoke the symptoms. The common specific inhalants outdoor, normally with seasonal natures and manifestations, may include a variety of pollen grains from grasses, trees and weeds as well as spores from fungi including ascomycetes and basidiomycetes fungi. The volumetric concentration of grains and spores may show seasonal variations with concentrations ranging from Zero to hundreds or even thousand /m³. The potent specific inhalants indoors (domestic/insects and pets origin), generally with perennial nature and manifestations, may include Der p and Der f (house dust mite allergens), Fel d (cat allergen) Per a and Bla g (cockroach allergens), Can f (dog allergen), and Asp f (Aspergillus allergen) etc. and their contents can be considered in ng/g of dust. Some of the inhalant agents can cause occupational diseases as well.

