Exposure and sensitization to dust mites in Peruvian cities

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Background: Knowledge of the prevalence of different species of dust mites according geographical areas is important to support the diagnostic and specific treatment of allergic diseases that dust mites trigger.

Methods: Dust samples were collected from mattresses in Peruvian cities grouped by regions; coast (Chiclayo, Trujillo, Chimbote, Lima, Tacna), sierra (Cajamarca, Cusco, Arequipa), jungle (Puerto Maldonado), using an adapted vacuum cleaner. After collection samples were frozen for 48 hours. Mites were extracted from 10 mg of each sample, under stereo microscope, by suspension method with saline solution. Mites were identified by optical microscope. We performed skin prick test (SPT) with standardized mites extracts (ALK-Abelló, Laboratorios Leti and Inmunotek, Spain) to subjects who lived in the homes where dust samples were taken.

Results: Presence of dust mites was confirmed in almost 90% of samples collected. The predominant species was Dermatophagoides pteronyssinus in cities of Peruvian coast, followed by Dermatophagoides farinae, Euroglyphus maynei and Blomia tropicalis. In the jungle, we identified two not previously cited species as Malayoglyphus intermedius and Tarsonemus sp, being this last the predominant specie. Regarding SPT, most of the participants were positive to Dermatophagoides pteronyssinus, followed by Dermatophagoides farinae, Blomia tropicalis, Euroglyphus maynei and Tyrophagus putrescentiae, with different percentages by geographic areas.

Conclusions: To our knowledge this is the first study on mite count in dust and pattern of sensitization performed in Peru. The acarological fauna and sensitization profile show different percentages depending on geographic areas. Dermatophagoides pteronyssinus is the dominant species in the coast, and Tarsonemus sp. in the jungle, though other species can be considered important. Further studies about mite species and sensitization profile (SPT, specific IgE) will elucidate the clinical importance of these findings.

Keyword: Dust mites; Acarological fauna; Allergic diseases