Assessment of serum levels of allergen-specific immunoglobulin E in different seasons and breeds in healthy horses

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Abstract

The present study was designed to assess specific IgE towards environment allergens in 42 healthy horses. Determination of this immunoglobulin in serum serve as diagnostic tools in allergic diseases to improve efficacy of the treatment and proper allergen selection to specific immunotherapy. Serum levels of allergen specific IgE were measured with equine monoclonal antibody, using 15 individual and 5 mix allergens in North European Panel. The study revealed season dependent increased levels of allergen specific IgE in normal horses. It is noteworthy that healthy horses show high percentage of positive reactions, most commonly towards to domestic mites *D. farinae* (80%), *D. pteronyssinus* (35.71%) and storage mites *T. putrescentiae* (42.86%), *Acarus siro* (40.48%). These allergens play an important role in equine, canine and feline atopic dermatitis. We also demonstrated high IgE levels in the group of horse specific insect allergens. *Tabanus* sp. (35.71%), *Culicoides* sp. (28.57%) and *Simulium* sp. (26.19%) were the most frequent insect positive reaction allergens. No positive reactions in all groups of allergens were found in winter season, low and merely detectable levels of antibodies have been found relating to *D. farinae* and *T. putrescentiae* allergen. We observed elevated mould-IgE levels in horses that live in stables, while outdoor living horses showed very low levels. Amongst all positive reactions we observed only weak and moderate reactions but no strong positive reactions were found. No significant differences were observed between three breeds of horses with the exception of moulds and *D. pteronyssinus* allergens.

Key words: allergen specific IgE, healthy horse, seasons, immunology, allergens