

OTR 05 - Detection of antibodies anti horse albumin and anti horse IgG3 in a population of Rondonia state

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Introduction:

Allergy to hoSA is exceptional, in individuals who received therapeutics preparations of horse. However to our knowledge, there is little information about this antigen in reactions produced and evolutive studies in patients sensitized with therapeutic preparation of horse. In Brazil, hoSA is considered a minor allergen in therapeutic preparations produced in horses, but fragments of hoSA were detected by mass spectrometry in these preparations. Since allergic sensitization to antivenom has been reported, anaphylactic reactions to therapeutic horse sera might be an underestimated factor contributing to fatal cases of anaphylaxis. However, little information is available on the determinants of such reaction. Hence, we studied a group of individuals living in the Rondônia State of Brazil exposed to therapeutic horse antivenom (hoAV) preparation, in order to clarify the factors related with antivenom allergy.

Objective:

The aim of this work was to investigate the prevalence and predictors of antivenom allergy among individuals exposed to hoAV and to confirm the involvement of IgE anti-hoIgG3-mediated mechanisms in this condition.

Methodology:

Individuals exposed to hoAV were assessed for antivenom allergy using questionnaires and immunological tests. The presence of horse sera sensitization was determined through quantification simultaneous of specific anti-horse IgE (anti-hoIgE), anti-horse IgG (anti-hoIgG) and anti-horse serum albumin (anti-hoSA). Allergens were studied using enzyme linked immunoenzymatic assays (ELISA).

Results:

Of the 45 individuals evaluated, 7 (10.4%) presented specific IgE antibodies to horse IgG3 (hoIgG3). Of those, 6 presented typical symptoms of an IgE-mediated allergic reaction when exposed to hoAV. hoIgG3 sensitization was associated with length of employment ($P=0.042$) and high levels of total IgE ($P=0.034$), atopy ($P=0.051$).

Conclusion:

Our observations suggest that the level of exposure to hoAV can result in allergic sensitization in snake handlers through IgE-mediated mechanisms. The prevalence rate of this condition appears to be high among these individuals which living near the forest. Increase in exposure to equine therapeutic preparations, and history of atopy was predictors of its occurrence.

Keywords: Anaphylatic reaction; Therapeutic immunoglobulins; Immunological assay