

Accuracy of a serum allergen specific IgE test for the diagnosis of RAO-affected horses

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OBJECTIVE

The aim of this study was to assess whether a serum specific IgE test against different equine inhalant antigens/allergens could be useful to detect those horses with recurrent airway obstruction (RAO) from other horses affected with other inflammatory non-allergic respiratory disorders.

MATERIAL AND METHODS

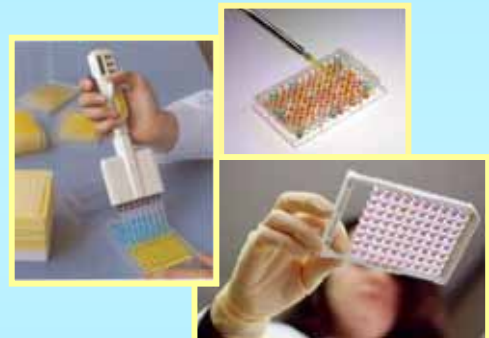
Animals:

- 11 horses diagnosed as RAO
- 17 horses diagnosed as non-allergic upper or lower airway inflammation
- 11 horses considered as controls

Classification criteria:

- For airway inflammatory disorders: based on clinical history, physical examination, endoscopy, thoracic ultrasonography and radiography, cultures, hematology or cytology of transtracheal aspiration and bronchoalveolar lavage.
- For controls: based on a normal clinical history, physical examination, hematology and cytology of bronchoalveolar lavage (<5% neutrophils)

Serum samples of all these horses were blindly submitted to perform an IgE test (Equine ELISA, Alergovet SL) against different respiratory allergens (molds, mites, grain mill dust, grasses, weeds and tree allergens). A positive horse was considered when IgE levels to any of the allergens tested were significantly increased.



RESULTS

The sensitivity of the test and the negative predictive value were very high (90.9 and 95%, respectively), while specificity was acceptable. Additionally, most of the RAO horses (63.6%) showed a positive result to grass pollen. These results pointed out that, based on the test, grass pollen could be more involved in RAO-affected horses than molds and other inhalant allergens.

Sensitivity	90.9 %
Specificity	82.6 %
Positive predictive value	71.4 %
Negative predictive value	95 %

	RAO	Non-allergic inflammatory problems	Control
Positive IgE test	10	3	1
Negative IgE test	1	14	10

Results of RAO, non-allergic and control horses to the serum IgE

ALLERGENS	RESULTS (%)
Grass pollen	63.6
Grain mill dust	37.5
Mites	18.2
Trees	18.2
Weeds	9.1
Molds	9.1

Percentage of RAO horses showing positive results to the different inhalant allergens

CONCLUSIONS

The serum IgE test has shown a very high sensitivity to confirm the diagnosis of RAO in horses with respiratory problems. However, the very high negative predictive value indicates that a negative result of the test can be more useful to rule out RAO in horses with respiratory clinical signs.

In addition, the serum test could be useful to know easily which inhalant allergens would be involved in RAO-affected horses in order to avoid their exposition.