Supporting Original Studies

**New diagnostic approaches**

**Diagnostic accuracy of serum assays for mite sensitivity in dogs with atopic dermatitis sensu stricto**

M. LIMA, V. CUNHA, M. FARIAS

1School of Agraries Sciences and Veterinary Medicine, Pontifical Catholic University of Paraná, Brazil, Curitiba - Paraná, Brazil

2FDA Allergenic, Rio de Janeiro - RJ

3Clinical Practice of Companion Animals, Pontifical Catholic University of Paraná - Brazil, Curitiba - Paraná, Brazil

In case your abstract is not accepted for SOS presentation, would you like your abstract to be reconsidered for an oral communication or a poster?: Yes

Please select the type of presentation: Indifferent

If yes, please indicate the new topic in which your abstract must be reconsidered: Allergic diseases: pathobiology (pathogenesis and diagnosis)

Please insert your abstract: Clinical signs of canine atopic dermatitis (AD) are usually associated with immunoglobulin-E (IgE) reactions against environmental allergens, especially house dust and storage mites. Serological and intradermal testing are indicated for the diagnosis of canine AD sensu stricto to guide allergen control and identify relevant allergens for inclusion in allergen-specific immunotherapy protocols. This study aimed to evaluate accuracy parameters, predictive values and correlation of a FceR1-alfa serological test and a polyclonal serological test, for the identification of sensitivity to the mites Dermatophagoides pteronyssinus (DP), Dermatophagoides farinae (DF) and Blomia tropicalis (BT), compared to intradermal test (IDT) in dogs with AD sensu stricto. This study enrolled 19 healthy dogs with negative IDT results and 20 atopic dogs with positive IDT for at least one of the mites tested, that had other pruritic dermatoses ruled out, and also fulfilled six of eight clinical features of canine AD, as described by Favrot et al, after exclusively feeding a novel protein diet for four to eight weeks. Serological testing was performed in all 39 dogs. The following accuracy parameters were calculated: sensitivity (S), specificity (E), positive and negative predictive values (PPV, NPV). Kappa value determined correlation between the tests. When considered positive result to at least one of the tested mites (overall rating), polyclonal serological test showed accuracy=0,49, S=74%, E=26%, PPV=50% and NPV=45%. When considering the results of each mite tested, individually, this test showed for DP: accuracy=0,58, S=36%, E=74%, PPV=50% and NPV=61%; for DF: accuracy=0,46, S=78%, E=32%, PPV=35% and NPV=75%; and for BT: accuracy=0,53; S=55%; E=53%; PPV=40%, and NPV=67%. The FceR1-alpha test showed, in overall rating, accuracy=0,46, S=65%, E=26%, PPV=48% and NPV=42%; and in mite rating, it showed for DP: accuracy=0,58, S=57%, E=58%, PPV=50% and NPV=65%; for DF: accuracy=0,50, S=44%, E=53%, PPV=31% and NPV=67%; and for BT: accuracy=0,67, S=45%, E=79%, PPV=56% and NPV=71%. Agreement between IDT and polyclonal serum test was poor (0,05), while among IDT and FceR1-alpha test it was non-existing (-0,09). Overall agreement between both serum tests was moderate (0,52), and mite rating showed a poor to weak (0-0.32) agreement between serum tests. In conclusion, both polyclonal and FceR1-alpha serological testings should be evaluated individually for each mite tested. Due to their low specificity found herein, these serological testings can be used to supplement IDT results in the selection of mite allergens for immunotherapy protocols. Due to their high sensitivity, they can be useful to indicate environmental exposure and guide environmental control measures.

Please insert the short abstract: Clinical signs of canine atopic dermatitis (AD) are usually associated with domestic mites. Serological and intradermal (IDT) testing are indicated to guide allergen control and inclusion in immunotherapy
protocols. This study aimed to evaluate accuracy parameters of a polyclonal and a FceR1-alfa serological test, compared to IDT, for identification of sensitivity to *Dermatophagoides pteronyssinus* (DP), *Dermatophagoides farinae* (DF) and *Blomia tropicalis* (BT). This study enrolled 19 healthy dogs with negative IDT and 20 atopic dogs with positive IDT and no other pruritic dermatoses, that fulfilled six of eight clinical features of canine AD, as described by Favrot et al, after exclusively feeding a novel protein diet for eight weeks. Serological testing was performed in all 39 dogs. When considered positive result to at least one of the tested mites (overall rating), polyclonal serological test showed accuracy=0,49, sensitivity (S)=74%, specificity (E)=26%. When considering results of each mite tested individually, this test showed for DP: accuracy=0,58, S=36%, E=74%; for DF: accuracy=0,46, S=78%, E=32% and for BT: accuracy=0,53, S=55%, E=53%. FceR1-alpha test showed in overall rating: accuracy=0,46, S=65%, E=26%; in mite rating, for DP: accuracy=0,58, S=57%, E=58%; for DF: accuracy=0,50, S=44%, E=53% and for BT: accuracy=0,67, S=45%, E=79%. Both serological tests should be evaluated individually for each mite tested, and due to their low specificity, can be used to supplement IDT in the selection of mite allergens for immunotherapy protocols. Due to their high sensitivity, they can be useful to indicate environmental exposure and guide environmental control measures.

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