

Allergy approach to a dog population from a veterinary dermatology consultation at the tropical inland city of Londrina, Paraná, Brazil

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Introduction

Living and medical care conditions are associated to an **increased prevalence of allergy** in humans and dogs (1). **Indoor life** is associated with an increased exposure to dust mites, the most sensitizing agents for dogs (2). Indoor life may also favor sensitization to molds, while an **outdoor environment** would favor pollen sensitization (3). **Skin barrier-related genetic frame** (4) as well as **environmental living conditions** (5) are key-role players in sensitization and allergy triggering. Living in a **persistently hot and wet tropical climate** may in turn favor environmental conditions related to the prevalence of airborne allergens and skin barrier disruption, with consequences on allergy.

Materials and Methods

Patient selection and characterization

- 111 allergic dogs (60 males and 51 females) selected by clinical evaluation (Favrot's criteria).
- Submitted to food allergy restriction measures.
- Period of evaluation: 2015 to 2018.
- 35 patients (33.3%) from predisposed breeds.
- 74.8% indoor and 25.2% outdoor.

Results

- **Age at first signs:** 55% at 1-3 years; 45% at >3 y
- **Atopic dermatitis (AD):** 90.9% (starting 1-3 y = 42.6%; >3 y = 58%)
- **AD + FA:** 12.6%; **Flea allergy dermatitis:** 14.4%
- **Dermatitis due to *Malassezia* overgrowth (MO):** 49.6% (mostly in the AD group) • **Non otitis MO:** 29% (Figs)
- **Skin barrier disruption (mainly with seborrhea):** 59%
- **CADESI-4:** **Light** = 13.5%; **moderate** = 33.3% ; **severe** = 53.2% (Rather similar in the predisposed breeds group)
- **Positive correlation (Pearson): CADESI-4 and FA** ($r=0.2$; $p=0.03$)
 - **Seborrhea** ($r=0.41$; $p<0.00001$)
 - **MO** ($r=0.38$; $p=0.00003$)
 - **Otitis** ($r=0.23$; $p=0.01$).
- **MO and Indoor living** ($r=0.22$; $p=0.02$)
- **Otitis** ($r=0.64$; $p<0.00001$)
- **Negative correlation (Pearson): Flea allergy and MO** ($r=-0.25$; $p=0.0079$)
 - **Otitis** ($r=-0.3$; $p=0.001$)
 - **Conjunctivitis** ($r=-0.2$; $p=0.03$)
- **Comorbidities:** 47.5% (1-3 y); 60% (>3 y) starting groups
- **Food allergy (FA):** 23.7% (88.9% starting 1-3 y; 11.1% >3 y)
- **Otitis:** 36%; **Conjunctivitis:** 18.9%

Conflict of interest: In relation to this presentation I declare the no conflict of interest.

Aim

To characterize the allergy frame of a tropical dog population attending the State University of Londrina and Veterinary Clinics Life Space dermatology outpatient consultation.



**Figs:
Dermatitis
due to MO**



Conclusions

In this **tropical dog population:**

A **relevant amount of dogs started with AD even >3 years old**, which may be associated with a **rather predisposing environment**. **Starting of FA signs much sooner than AD** was in accordance with most reports and should be independent of environmental predisposition.

AD + FA prevalence was found within the general reported range (7-25%) (6).

Clear **clinical worsening trend has been associated with seborrhea, FA, indoor living** (as well as in Portuguese temperate continental climate) (7), **otitis and MO**.

MO is probably more common without the correspondent otitis and also **more severe**, even in the outdoor group, despite the positive correlation with indoor living.

The kind of allergen sources involved in environmental allergy/AD would help equating a possible specific immunotherapy approach (1,8).

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