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THE IMPORTANCE OF NUTRITION AND THE USE OF ANTI-INFLAMMATORY DRUGS IN THE TREATMENT OF DERMATITIS IN CARNIVORES

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Abstract

Dermatitis of various causes is one of the most common pathologies encountered in carnivores, especially from May to September. Our study focused on 19 cases of carnivores (11 dogs and 8 cats) which presented to a veterinary clinic with dermatitis of different aetiologies, with both auricular and skin localization. During the anamnesis, we noted the hyperproteic diet, as one of the most important factors favouring these conditions. The highest incidence was food allergic otitis in dogs (36.84%), followed by parasitic otitis in cats (31.57%), parasitic dermatitis in dogs (21.05%), and allergic dermatitis in cats (10.52%). Treatment included a hypoallergenic diet for 8-12 weeks. Dexamethasone or Prednisolone was associated, with therapy, ensuring the success of the therapeutic approach. The success of the treatment was decisively favoured by the hypoallergenic diet and the combination of anti-inflammatory drugs.

Key words*: food, anti-inflammatory drugs, dermatitis, therapy.*

INTRODUCTION

In veterinary clinics, around 20% of case reports present dermatological conditions, where the diagnosis is based on recognizing the type of lesion and etiological agent. It is essential to differentiate primary lesions from secondary ones for the correct diagnosis of dermatitis. Primary lesions are the result of the action of the pathological/etiological agent, while secondary lesions are complications that arise against the background of the pre-existing primary lesion that are caused either by the patient's action or by environment (Grant, 2005; Goth, 2022).

Among these, alopecia is an inflammation expressed by damaging the hair follicle, with a chronic evolution that leads to hair loss in the case of parasitic, fungal, endocrine, and nutritional diseases, as well as organopathies (hepatic and/or renal failure) (Coyer, 2020; Rhodes, 2011). Demodicosis, located in the hair follicle and sebaceous glands, is found mostly in dogs, less frequently in cats, and proliferates in immunosuppressed animals. Sarcoptic mange, most often found in dogs, is expressed by intensely itchy lesions prone to hyperkeratinization and secondary infection of the skin (Bourguignon, 2013).

Our study aimed to monitor the incidence of these conditions in parallel with the effectiveness of the treatment, improved by combining anti-inflammatory drugs and a hypoallergenic diet (Dobre, 2019; Goran, 2016).

MATERIALS AND METHODS

The study was carried out on 19 clinical cases, 11 dogs and 8 cats (Tables 1 and 2), which were presented to a veterinary clinic with dermatitis of different ethology and location.

After diagnosis, the same therapeutic protocol was applied to all cases.

The diagnosis was made by microscopic examination of secretions, crusts, and/or hairs. The collected material was displayed on a microscope slide, the staining was performed after drying. Microscopic examination is a simple and effective method that guides the diagnosis and helps in selecting the appropriate treatment. We also used the otoscope, and the skin scraper on the affected areas (Figures 1 and 2).

Figure 1. Haema rapid staining solutions /Quick-Diff

Figure 2. Riester otoscope

Table 1. Cases of dogs studied

ID	Breed	Sexe	Age (y.o.)	Weight (kg)
1	Mixed	♀	9	15
2	Bulldog	♂	3	21
3	Bichon	♀	2	6
4	Bichon	♂	4	7
5	French bulldog	♂	3	10
6	Mixed	♀	1	9
7	Pug	♂	0.66	6.5
8	Bichon	♂	9	7.5
9	Cocker	♀	2	11
10	German Shepherd	♂	1	33
11	Chihuahua	♀	3	2

Table 2. Cases of cats studied

ID	Breed	Sexe	Age (y.o)	Weight (kg)
1	European	♀	0.16	3
2	British short hair	♀	0.33	3
3	European	♀	1	2.5
4	Persian	♂	1	5
5	Sfinx	♂	0.66	3.5
6	Main Coon	♀	2	4
7	European	♂	1	2
8	British	♂	0.58	3

After a thorough clinical, microbiological and otoscopic examination, the patients were classified into one of four types of dermatitis, based on the ethology and the affected anatomical area: food allergic otitis in dogs - 7 cases, parasitic otitis in cats - 6 cases, parasitic dermatitis in dogs - 4 cases and allergic dermatitis in cats - 2 cases, as shown in Figure 3.

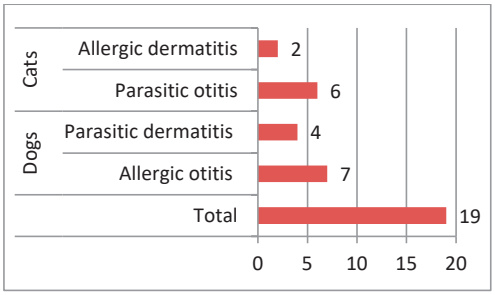

Figure 3. Distribution of different types of dermatitis in dogs and cats

After diagnosing and classifying each patient in a specific dermatitis category, individualized treatment was established. As previously noted, local hygiene of the affected area is essential. For this, we used Specialist® Shampoo for dogs (bathing every 2-3 days) and/or Epiotic® for ear cleaning.

In cases involving bacterial and/or fungal agents, Alfaderm Plus® spray was applied twice a day to the affected area for 7 days. Surolan® otic solution was used in the ear for the same purpose, to combat the etiological agent and reduce inflammation. In both cases, the anti-inflammatory effect is achieved due to the prednisolone content in these medications.

Given the major contributing factor of a hyperprotein diet, a crucial step was implementing a hypoallergenic diet for a continuous period of at least 8-12 weeks

To control ringworm, we used Iver-mite otic® (2-5 drops) and Bravecto® chewable tablets were administered to control ticks and fleas.

RESULTS AND DISCUSSIONS

The treatment was administered for 7-10 days, with follow-up check at 7 days. The anti-allergic medication (e.g. Histamine Control®) was given for 21 days, in parallel with the hypoallergenic diet.

All the cases included in the study showed favourable progress starting from the 7th day, confirming the effectiveness of the treatment. The incidence of the types of dermatitis was as follows: 37% for allergic otitis in dogs, 21% for parasitic dermatitis in dogs, 31.6% for parasitic

otitis in cats, and respective 10.5% for allergic dermatitis in cats, as shown in Figure 3.
Regarding the incidence based on the sex of the animals, we observed a slightly higher incidence in males (52.6%), compared to in females (47.4%), as shown in Figure 4.

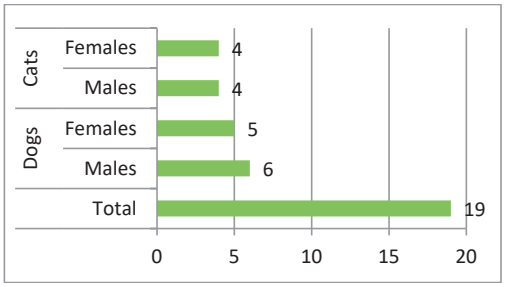

Figure 4. Incidence of Dermatitis in dogs and cats by sex

The optimization of nutrient intake, intestinal microbiota and its immune function could represent an excellent strategy to promote the beneficial effects on health in general, including the decrease of clinical signs of allergic skin diseases (Guidi et al., 2021).
Previous studies in human medicine have shown that the gut microbiota in early childhood is associated with age of onset, severity, remission, exacerbation and even phenotypes of atopic dermatitis (Lee S.-Y. et al., 2018).
In many patients' environmental allergens absorbed epicutaneously function as important triggers. According to this opinion, the removal of allergens on a routine basis in association with hypoallergenic products - oral and topical glucocorticoids - improve the skin barrier (Olivry et al., 2015).

CONCLUSIONS

The incidence of dermatitis was higher in dogs than in cats, with allergic otitis being the most common condition.
The highest incidence was recorded by allergic otitis, at approximately 37%, while allergic dermatitis had the lowest incidence, at only 10.5%.
The main clinical signs in patients were alopecia, pruritus, erythema, and unpleasant odour in the ear.
Combining topical treatments with systemic drugs resulted faster improvement and resolution of symptoms.
The association of anti-inflammatory drugs (prednisolone) and a hypoallergenic diet significantly promoted healing and contributed to the overall therapeutic success.

REFERENCES

Bourguignon, E., Guimaraes,L.D., Fereira, T.S., Favarato, E.S. (2013). *Dermatology in Dogs and Cats,* https://www.intechopen.com/chapters/43169, DOI: 10.5772/53660.

Coyer, K.S. (2020). *Clinical Atlas of Canine and Feline Dermatology*, Willey Blackwell.

Crivineanu, M, Palamaru, F., Nicorescu, V. (2017). Clinical and therapeutic aspects in some skin diseases in dogs and cats. *Scientific Works. Series C. Veterinary Medicine*. Vol. LXIII(1), pg. 67-70

Dobre, I.R. (2019). *Toxicologie veterinară*, Printech Publishing House

Dobre, I.R., Alexandru, D.M., Crivineanu, M. (2019). Study on changes in haematological parameters following administration of NSAIDs in dogs, *Scientific Works. Series C. Veterinary Medicine*. Vol. LXV(1), pg.37-41.

Goran, G.V., Crivineanu, V. (2016). *Toxicologie*. Printech Publishing House.

Goth, G.M. (2022). *Canine and Feline Dermatology*. Atlas, 2nd Edition, Servet.

Grant, D.I. (2005). *Skin diseases of dogs and cats*, 2nd Edition, Blackwells Scientific Publications.

Guidi, E. E.A, Gramenzi, A,, Persico, P., Di Prinzio, R., Di Simone, D., Cornegliani, L. (2021). Effects of feeding a hypoallergenic diet with a nutraceutical on fecal dysbiosis index and clinical manifestations of canine atopic dermatitis - Animals (Basel), doi: 10.3390/ani11102985.

Lee S.-Y., Lee E., Park Y.M., Hong S.-J. (2018). Microbiome in the gut-skin axis in atopic dermatitis doi: 10.4168/aair.2018.10.4.354

Olivry, T., De Boer, D.J,, Favrot, C., Jackson, H.A., Mueller, R.S., Nuttall, P., Prelaud, P. (2015). Treatment of canine atopic dermatitis 2015 updated guidelines from the International Committee on Allergic Diseases of Animals, *BMC Vet Res*, 11, 210.

Rhodes, K.H., Werner, A.H. (2011). *Blackwell's five minutes consult - Small animal dermatology*, 2nd Edition, Willey Blackwell.