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CLINICAL EFFICACY OF A LIPID EXTRACT COLLAR IN FELINE ATOPIC SYNDROME: A CASE REPORT

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INTRODUCTION:

Feline atopic skin syndrome (FASS) is a common pruritic and inflammatory skin disease of cats associated with environmental allergies, which is included within the feline atopic syndrome (FAS), a group of allergic diseases of the skin, gastrointestinal tract and respiratory tract[1,2]. FASS is one of the most prevalent skin diseases among cats. As it also happens in canine atopic dermatitis, **managing FASS cases can often be frustrating** for both the veterinarian and the pet tutor, and treatment compliance is a challenge. In cats with FASS, there is good evidence for the efficacy of systemic glucocorticoids and ciclosporin, and limited evidence for topical glucocorticoids, oclacitinib and allergen specific immunotherapy. However, more randomized controlled trials are warranted[3], and there is also a need for novel treatment alternatives and new product presentations which might enhance adherence to treatment.

On the other hand, prior studies performed using a **lipid extract (LE)** with a high content in sphingomyelin (**Biosfeen®3**, Bioiberica SAU, Esplugues de Llobregat, Spain), alone or in combination with glycosaminoglycans, describe their **beneficial effects on skin health**. More specifically, *in vitro*, the application of this LE led to increased levels of ceramides and number of lamellar bodies[4], and enhanced expression of filaggrin and antimicrobial peptides[5]. And, when used *in vivo*, improvements in clinical signs were seen in a canine model of atopic dermatitis using a colony of high-IgE, experimentally sensitized atopic beagles[6]. In a recent pilot study in client-owned dogs with naturally occurring atopic dermatitis, **the application of a collar containing this LE for 8 weeks led to significant clinical benefits**[7]. Testing this collar in cats with allergic dermatitis would provide efficacy and safety data in order to consider it as part of the multimodal treatment approach to this condition.

CASE DESCRIPTION:

- A **2.5-year-old spayed male domestic shorthair cat** presented for consultation due to **itching and hair loss**. The cat lived exclusively indoors, and it had been properly vaccinated and dewormed. The tutor initially reported that the patient had shown the pruritus issue for more than half a year, although, up until the initial visit, it had not yet been treated for that.
- On physical examination, the cat appeared to be in good general health, with all vital signs normal. The dermatological examination revealed partial alopecia with erythema and follicular cylinders on the chin and right mandibular area, in addition to partial alopecia with erythema on both tarsi. A **pruritic pattern** was established as the predominant one, and, within the most probable differential diagnoses, FASS, adverse reaction to food (ARF) and dermatophytosis and feline demodicosis were considered.
- Superficial and deep skin scrapings were performed with negative results. There was also no fluorescence under Wood's lamp illumination, and the dermatophyte test medium (DTM) culture was also negative. Neither parasites nor fungi were observed in the microscopic study of the hair. Based on these results, FAS was diagnosed, and given the tutor's refusal to carry out an elimination diet, we could not specify whether it was a FASS or an ARF.
- **Topical treatment** with the abovementioned LE collar (**Atopivet® collar**, Bioiberica SAU, Esplugues de Llobregat, Spain) was started and, during the follow-up of this case, the SCORing Feline Allergic Dermatitis (**SCORFAD**) scale[8] was used by the veterinarian to assess disease severity and response to the tested collar every four weeks, while the cat tutor was asked to score weekly the Pruritus Visual Analog Scale (**PVAS**).
- In the next follow-ups, **clinical improvements were seen in the SCORFAD scale and PVAS**. More specifically, after the first four weeks, the cat no longer presented erythema or follicular cylinders in any of the lesions (Figure 1), and had recovered most of the lost hair, with alopecia being then barely perceptible. At that point, the SCORFAD had decreased from 5 (week 0) to 1, and the PVAS from 7 (week 0) down to 5 (week 1), and then to 0 after two weeks. **After eight weeks of treatment, the patient no longer presented any apparent lesion, except for a very slight alopecia in the right tarsus**, which was more subtle than in the previous visit. After 8 weeks of treatment, the SCORFAD had decreased down to 0 (Figure 2), while the PVAS had also been reduced to 0 from week 2 and until 8 weeks (Figure 3).

Figure 1. Photographies depicting the clinical evolution of the patient over 8 weeks.

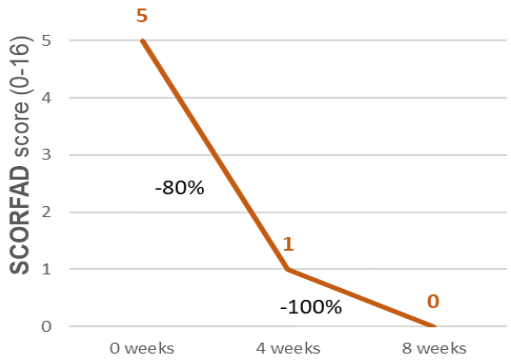

Figure 2. Changes in the SCORFAD scale.

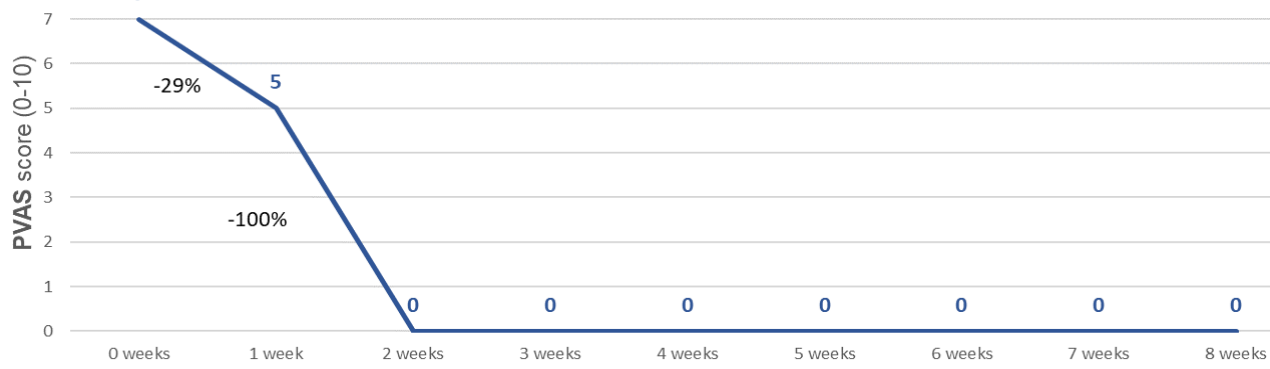

Figure 3. Changes in the PVAS score.

DISCUSSION AND CONCLUSIONS:

In veterinary clinical practice, and especially in FAS cases, one of the most important challenges is determining and following an appropriate posology. Provided that FAS is a chronic disease and that following a treatment in the feline species is a challenge for the tutor and, therefore, also for the veterinarian, **therapeutic success depends to a large extent on compliance**. In this regard, **the application of this collar poses many advantages, especially given its ease of application and also because of the low frequency of application**, as the duration of its effects can be up to two months. In this clinical case, the topical administration of **the LE collar managed to reduce the SCORFAD by 80% in 4 weeks, and the PVAS by 28.6% in just 1 week**. Moreover, a rapid resolution of all the skin lesions was noted. Based on our observations, this collar might become potentially a useful tool for controlling the disease, **either as a single treatment**, like in this particular case, **or as a complimentary therapy** in more severe cases. On top of this, as it is also a priority to maintain a comfortable management of the feline patient overtime, with this collar the negative effects of stress can also be minimized and thus better control the feeling of itching, and eventually improve both the experience of the tutor and the relationship with their cat.

In conclusion, provided the clinical benefits of this LE collar observed in this case, combining it with other FASS therapies could potentially allow for drug sparing, reduction of adverse effects, and lead to enhanced adherence to treatment and reduced treatment costs. However, an adequate evaluation of the efficacy of this product in cats would be needed by performing the necessary clinical trials.

BIBLIOGRAPHY
1. Halliwell, R. et al. Feline allergic diseases: introduction and proposed nomenclature. *Vet. Dermatol*. 32, 8-e2 (2021).
2. Vargo, C. et al. Feline Atopic Skin Syndrome. *Today's Vet. Pract.* 78–83 (2022).
3. Mueller, R. S. et al. Treatment of the feline atopic syndrome – a systematic review. *Vet. Dermatol.* 32, 43-e8 (2021).
4. Cerrato, S. et al. Effects of sphingolipid extracts on the morphological structure and lipid profile in an in vitro model of canine skin. *Vet. J.* 212, 58–64 (2016).
5. Segarra, S. et al. Enhanced In Vitro Expression of Filaggrin and Antimicrobial Peptides Following Application of Glycosaminoglycans and a Sphingomyelin-Rich Lipid Extract. *Veterinary Sciences* 9.7 (2022): 323.
6. Marsella, R. et al. Topical treatment with sphingolipids and glycosaminoglycans for canine atopic dermatitis. *BMC Vet. Res.* 16, 1–10 (2020).
7. Segarra, S. et al. Clinical effects of a sphingolipid collar in client-owned dogs with naturally occurring atopic dermatitis: a pilot study. in *Proceedings of the North American Veterinary Dermatology Forum*: April 27-30, 2022, New Orleans, Lousiana, USA 156 (2022).
8. Steffan, J. et al. Responsiveness and validity of the SCORFAD, an extent and severity scale for feline hypersensitivity dermatitis. *Vet. Dermatol.* 23, (2012).