

EFFICACY OF AN EXTENSIVELY HYDROLYZED PROTEIN-BASED FOOD FOR THE DIAGNOSIS OF FELINE CUTANEOUS ADVERSE FOOD REACTIONS



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INTRODUCTION & OBJECTIVES

Adverse food reactions (AFR) are a common problem that may cause severe cutaneous and/or gastrointestinal signs in dogs and cats [1,2]. The **diagnosis** of cutaneous Adverse Food Reactions (cAFR) in these species currently relies on nutrition, with a **2-step process**: performing an elimination trial with adapted nutritional solution and adequate duration [3,4], followed by a re-challenge with reintroduction of previous food. A nutritional solution formulated with extensively hydrolyzed protein has been proven to be a **complete and balanced diet for feline adult maintenance**, in accordance with the AAFCO* Minimum Feeding Protocol for proving an Adult Maintenance claim [5] and proven to be **tolerated well** in terms of palatability, digestibility and skin condition [6]. The same type of extensively hydrolyzed protein-based food has been demonstrated efficient in cAFR diagnostic for dogs [7]. The objective of this **prospective multicenter blinded study** was to assess the diagnostic efficacy of the extensively hydrolyzed protein-based food in cats.

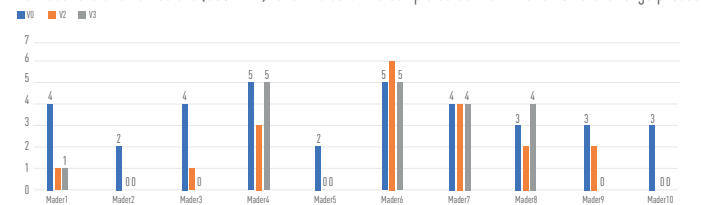
RESULTS

34 adult cats with suspected cAFR were enrolled into the study, and **ten cats completed both elimination and re-challenge phases**. They were mostly European or Domestic short-haired indoors cats of both sexes, with average age at inclusion of 5.1 years old +/- 3.7.

DERMATOLOGY

N=8 of these 10 cats had **lesions improved with the test diet** (Fig.2): SCORFAD decreasing from median 3.5 [2;5] at V0, to 1.5 [0;6] at V2. Cat owners mentioned visible skin improvement after 12 days in average. Two of these 10 cats (Mader4' (details in figure 3) and 'Mader8'), also experiencing clinical worsening during re-challenge phase, were **diagnosed as cAFR cases**.

FIGURE 2: Individual evolution of lesions (SCORFAD) for all 10 cats who completed both elimination & re-challenge phases



DISCUSSION

Overall, this extensively hydrolyzed protein-based diet was **well tolerated and accepted** in the included cat population. The number of dropouts is similar to previous feline studies regarding cAFR, as elimination trials in cats represent a challenge [11], due to poor owners' compliance or inconsistent acceptance by cats throughout dietary trials. Duration of elimination and re-challenge phases were based upon literature at the time of study initiation. More recent publications confirm that 8 weeks constitute a good duration for the elimination phase, with 90% sensitivity [3], and re-flare on oral challenge can actually be visible within 7 days in 90% of feline AFR cases [12]. The results of this study are **promising** and may also support the interest of performing **further studies in AFR cats**, e.g. to potentially confirm the benefits and reliability of shortened duration for the elimination phase. This was recently demonstrated in dogs, via parallel short-course steroid allowance [13] and may help enhance owners' compliance and cats' acceptance.

References
* AAFCO Official Publication of the Association of American Feed Control Officials, Atlanta, GA, USA
[1] Mueller R.S., Olvey T. Critically appraised topic on adverse food reactions of companion animals (6): prevalence of non-cutaneous manifestations of adverse food reactions in dogs and cats. BMC Vet. Res. 2018; 14:341. <https://www.biomedcentral.com/colloidsandinterfaceadversefoodreactions>
[2] Olvey T., Mueller R.S. Critically appraised topic on adverse food reactions of companion animals (7): signalement and cutaneous manifestations of dogs

and cats with adverse food reactions. BMC Vet Res 15, 140 (2019)
[3] Olvey T., Mueller R.S., Pridard P. Critically appraised topic on adverse food reactions of companion animals (1): duration of elimination diets. BMC Vet. Res. 2015; 11:275
[4] Olvey T., Mueller R.S. Critically appraised topic on adverse food reactions of companion animals (8): discrepancies between ingredients and labeling in commercial pet foods. BMC Vet. Res. 2018; 14:24
[5] Boutigny L., Lesponne I. Evaluation of the digestive tolerance and nutritional value assessment of a new extensively hydrolyzed poultry

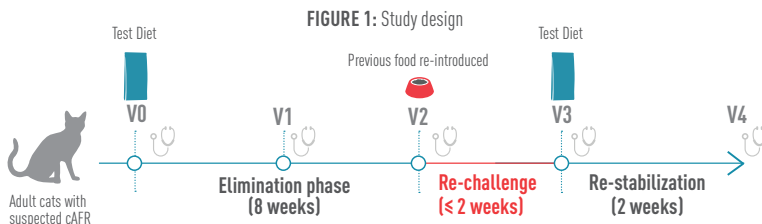
MATERIALS & METHODS

ANIMALS

Adult cats with suspected cAFR were enrolled into the study by dermatologist veterinarians, from **5 European veterinary practices**. They were included if also meeting defined criteria on pruritus (PVAS [8] ≥1) and/or lesions (SCORFAD [9] ≥4). Cats were not enrolled if presenting secondary infections or untreated ectoparasitic infestation, in gestation or lactating, in case of suffering from pre-existing systemic disease or if flavored medications or dietary supplements could not be discontinued.

DIETARY SOLUTION & STUDY DESIGN

The test diet was formulated with extensively hydrolyzed protein, and corn starch (Anallergenic™ Feline, Royal Canin®, France). After 8 weeks on the test diet (V2), if improvement of at least 50% of the signs was noted, cats were re-challenged with their previous food (until flare was noted, or an increase of at least 25% of symptoms, otherwise for 14 days) and a recheck was planned (V3) (Fig.1). Thereafter, the test diet was dispensed for another two weeks until the final visit at day 90 (V4).

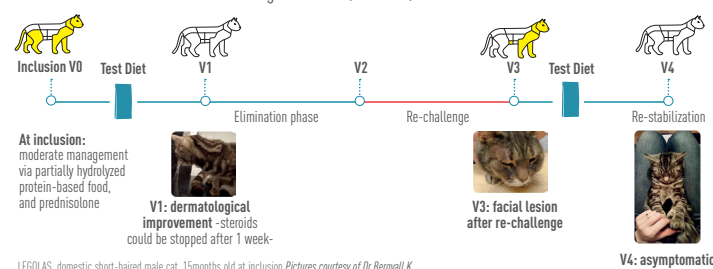


RECORDED PARAMETERS

The SCORFAD and pruritus scores were evaluated by the investigators at inclusion visit (V0, at D0), and after 4 weeks (V1, D30 +/- 3 days) and 8 weeks (V2, D60 +/- 3 days) then after re-challenge phase (V3 [D63-75, maximum 14 days after V2] and at study completion (V4, D90). Owners fulfilled questionnaires at inclusion and then for each visit, on their evaluation of food acceptance, digestive tolerance, skin and coat quality (scale ranging from 1 ('very bad skin & coat condition') to 10 ('very good'), 5 being 'correct skin & coat condition') and to report any potential adverse event. Digestive tolerance was evaluated via a fecal scoring [10], the scale ranging from 1 (diarrhea) to 5 (very hard stools, constipation), 4 being considered 'ideal score' on this scale.

FIGURE 1: Study design

FIGURE 3: Clinical evolution of one of the cAFR-diagnosed cats ('Mader4')



LEGOLAS, domestic short-haired male cat, 15months old at inclusion Pictures courtesy of Dr. Bergvall K

Clinical evolution in LEGOLAS, cat who experienced improvement on test diet and flare on re-challenge



OTHER OUTCOMES

Owner-assessed fecal score showed good digestive tolerance of the food. The median fecal score for the 10 cats was 4 at inclusion, still 'ideal score' 4 at V2; and there was no diarrhea and no vomiting. In the 10 cats who completed both phases of cAFR diagnostic, owners assessed that 90% liked the test diet, 2/3 of these cats appreciating this new food 'as much or more than their usual diet'.

CONCLUSION

The results show that **this novel and extensively hydrolyzed protein-based diet may constitute a valuable tool for feline cAFR diagnosis**. Further studies, on bigger population, are warranted to confirm it.

[8] Pylynick J., Liu G., Gillard P., Harvey R. et al. Further validation of a pruritus severity scale for use in dogs. Vet Dermatol 2009; 20: 115-122
[9] Sharfan J., Olvey T., Foster S. et al. Responsiveness and validity of the SCORFAD, an ordinal and severity scale for feline hypersensitively dermatitis. Vet Dermatol 2012; 23: 410-418
[10] adapted from Motham, G. The Waltham faeces scoring system - a tool for veterinarians and pet owners: how does your pet rate? Waltham Focus 2001; 11: 24-25, 24-25
[11] Chesbitt J. "Eliminate" The Pitfalls When Considering A Food Trial. NAVDF congress, Austin (Texas), USA, April 10-13 2019
[12] Olvey T., Mueller R.S. Critically appraised topic on adverse food reactions of companion animals (9): time to flare of cutaneous signs after a dietary challenge in dogs and cats with food allergies. BMC Vet Res 16, 158 (2020)
[13] Favrot C., Bizikova P. et al. The usefulness of short-course prednisolone during the initial phase of an elimination diet trial in dogs with food-induced allergic dermatitis. Vet. Dermatol. 2019; 30, 6: 498-e149
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