

EVALUATION OF A DIET BASED ON HYDROLYZED FISH AND RICE STARCH IN DIAGNOSIS OF FOOD ALLERGY IN CAT.

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Food for pets with particular nutritional needs.

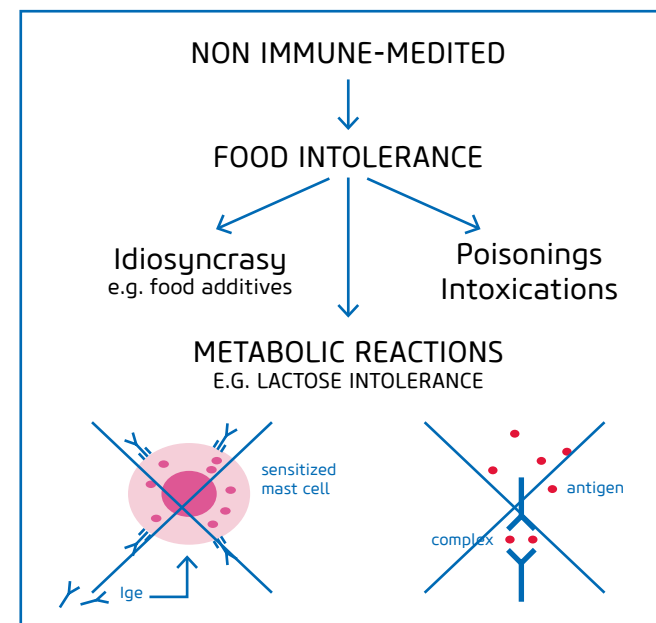
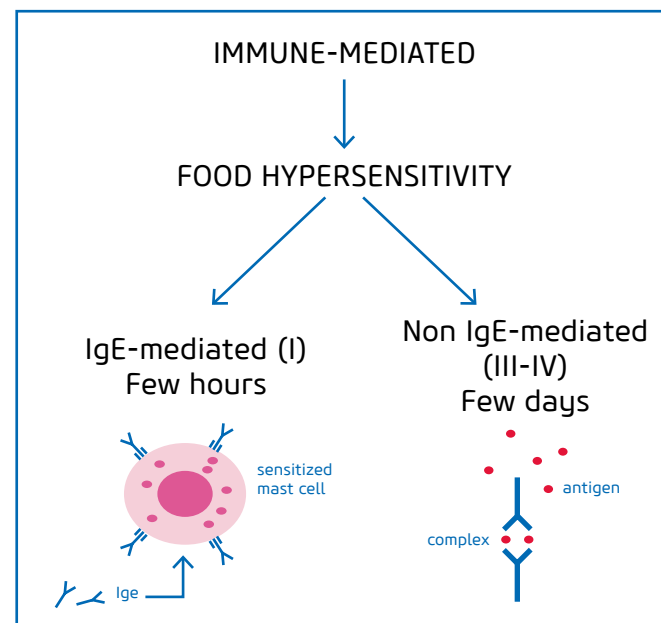
INTRODUCTION

The definition of Adverse Food Reactions (AFR) is commonly used to indicate immune based reactions (food allergies) and other non immune pathogenetic forms (food intolerances).

scratching of the head and neck, miliary dermatitis, plaques and eosinophilic granulomas (Hobi et al, 2011).

The distinction between AFR and feline atopic dermatitis, and more in general

diagnosis of AFR; these foods can be contaminated by non declared protein sources, and sometimes, these proteins can cross-react with these contaminants which the patient is allergic to (Olivry et al, 2018).



Adverse Food Reactions is a relatively frequent disease in cat; in fact its prevalence is estimated to be 3-6% of dermatological diseases and 21% of itchy diseases (Olivry et al. 2017).

The clinical signs of AFR affect mainly the integumentary system; only 10-15% of animals display clinical signs related to gastro-intestinal problems such as: vomiting and diarrhea. The most common dermatological signs are alopecia self-induced by licking, grazes following

the diagnosis of AFR, is possible only by using an elimination diet (ED) for at least 8 weeks (Olivry et al. 2015). The cutaneous and/or gastro-intestinal symptoms improvement during this type of diet and their returning after the reintroduction of the food which was normally given to the animal, confirms the diagnosis of AFR.

Hypoallergenic commercial diets containing more unusual hypoallergenic protein sources are often used in the



Hydrolysed diets represent a valid alternative as a diagnostic instrument of AFR (Olivry et al. 2010). Hydrolysis is an enzymatic proteolysis process which reduces the proteins to peptide chains whose dimension is not recognized by IgE or activated T lymphocytes, reducing the antigenic power of the food (Ricci et al. 2010). If the protein hydrolysis is incomplete (molecular weight over 10kD) these diets are still able to induce AFR in patients who are allergic to the protein source they are made of (Bizikova et al. 2016).

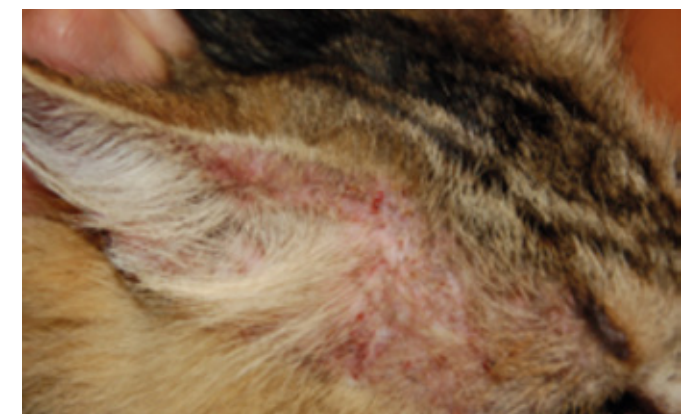
Ultra-hydrolysed diets were introduced to the market a few years ago and,



thank to an extensive hydrolysis (under the 10kD), they have an extremely reduced capacity of inducing a food related allergic reaction. The aim of this study is to evaluate the efficiency



of Farmina Vet Life Ultrahypo Feline Formula, an ultra-hydrolyzed diet based on fish protein (< 6kD) and rice starch in AFR diagnosis.



MATERIAL AND METHODS

ANIMALS

For this study 32 subjects with non seasonal pruritus and clinical signs compatible with AFR (itch, self-induced licking alopecia, bruises on the head and neck, miliary dermatitis or signs of the complex eosinophilic granuloma), were recruited by three different referral dermatological centers.

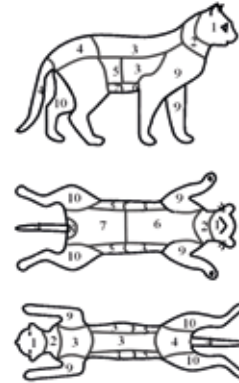
The subjects included in the study had to be devoid of parasitic infestations or infections and not have been treated with anti-pruritic drugs in the previous weeks.

EVALUATION OF CLINICAL SIGNS

During the inclusion phase (V1) and at the end of the elimination diet (V2, after eight weeks) all the subjects underwent a complete dermatological examination and the following parameters were evaluated:

- Evaluation of skin lesions by the vet by using the Scoring Feline Allergic Dermatitis (SCORFAD)(Steffan et al, 2012)
- Evaluation of pruritus by the owner with the use of (VAS) – Visual Analogue Scale (Noli et al, 2019)
- Evaluation of quality of life in the cat and the owner with a specific questionnaire called Quality of Life questionnaire (QoL) (Noli et al. 2016)

- Evaluation of
 - Excoriations
 - Miliary dermatitis
 - Eosinophilic plaque
 - Self-induced alopecia
- Severity scale 0 to 4
 - Lesional extension
 - Number of affected regions
- Range 0-16



DIET AND PROVOCATION

The owners of the cats included in the study were given instruction in how to feed their animals, for at least eight weeks, exclusively with Farmina Vet Life Ultrahypo (ultra-hydrolysed diet based on fish and rice starch), that was given directly by the dermatologist.

After eight weeks (V2) another clinical examination of the subjects included in the study was performed by the same dermatologist with the use of SCORFAD and by the owner with VAS and QoL.

For the subjects in which the pruritus decreased by at least 50% compared to the initial assessment (V1), the owners were instructed to carry on with the provocation phase to confirm the diagnosis of AFR.

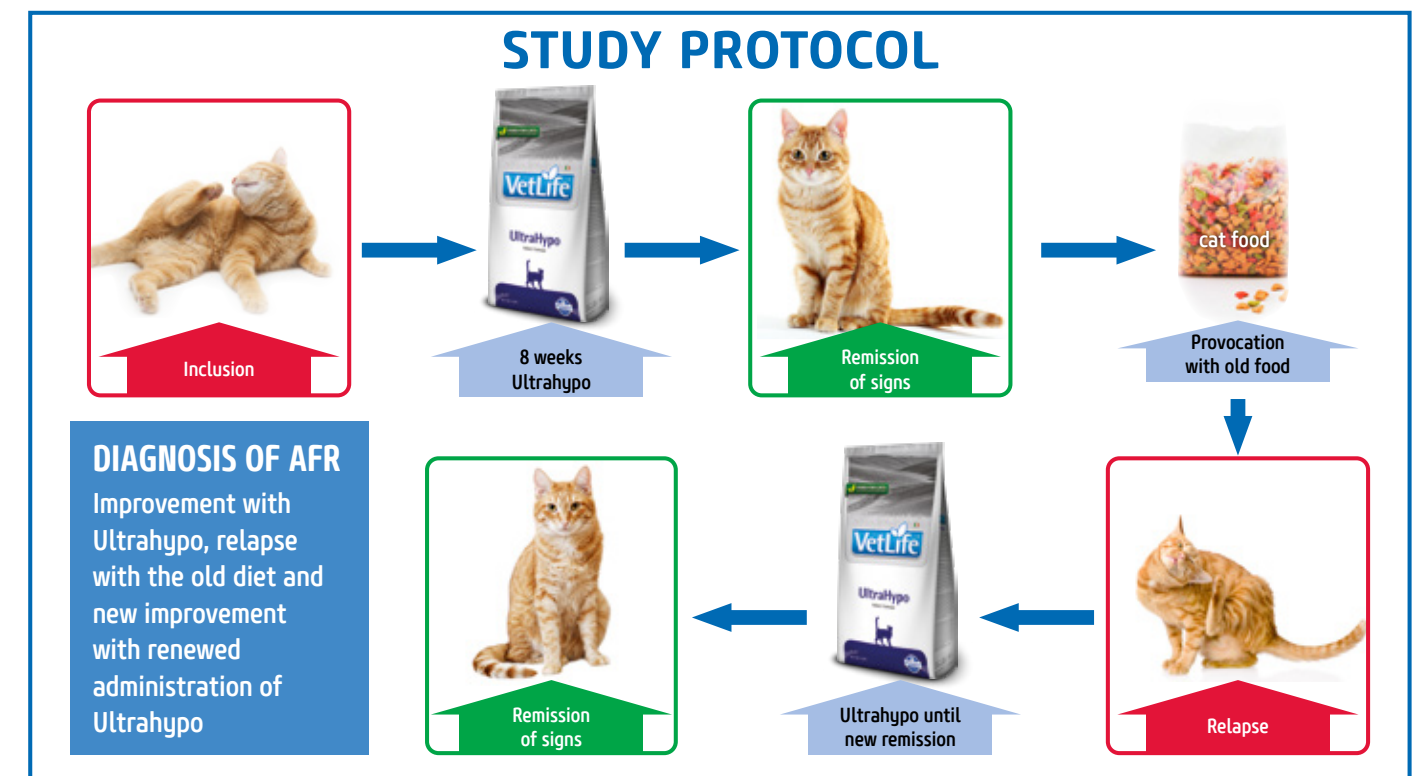
The provocation phase was characterized by the administration, separately and for 14 days each, of rice, fish, (the characterizing ingredients of the ultrahydrolysed diet) and the old diet respectively. In the cases in which the

patients presented an adverse reaction to one of the foods, objects of the provocation, the administration of the diet was interrupted and Farmina Vet Life Ultrahypo was reintroduced until remission of the symptoms and then the provocation phase followed.

The subjects that experienced a relapse after eating the old diet and improved

after the hydrolysed diet were diagnosed with food adverse reaction (AFR).

The cats in which the pruritus didn't improve by 50% or those which didn't complete the diet tryout period were excluded from the provocation test and underwent another hydrolyzed diet for 8 weeks.



RESULTS

Thirty two cats were included in the study, composed of 24 Europeans and 8 different breeds. Ten were males (all neutered) and 22 females (of which 18 were spayed).

The average age was 5,2 years (range 5 months- 14 years).

Of the thirty two included in the study, 25 completed the dietary test with ultra-hydrolysed diet (Farmina Vet Life Ultrahypo), object of this study; while 7 didn't complete the elimination diet (1 lost during follow-up, 1 because refused to eat the diet, 4 because of vomiting/diarrhea 1 was euthanized due to a tumor).

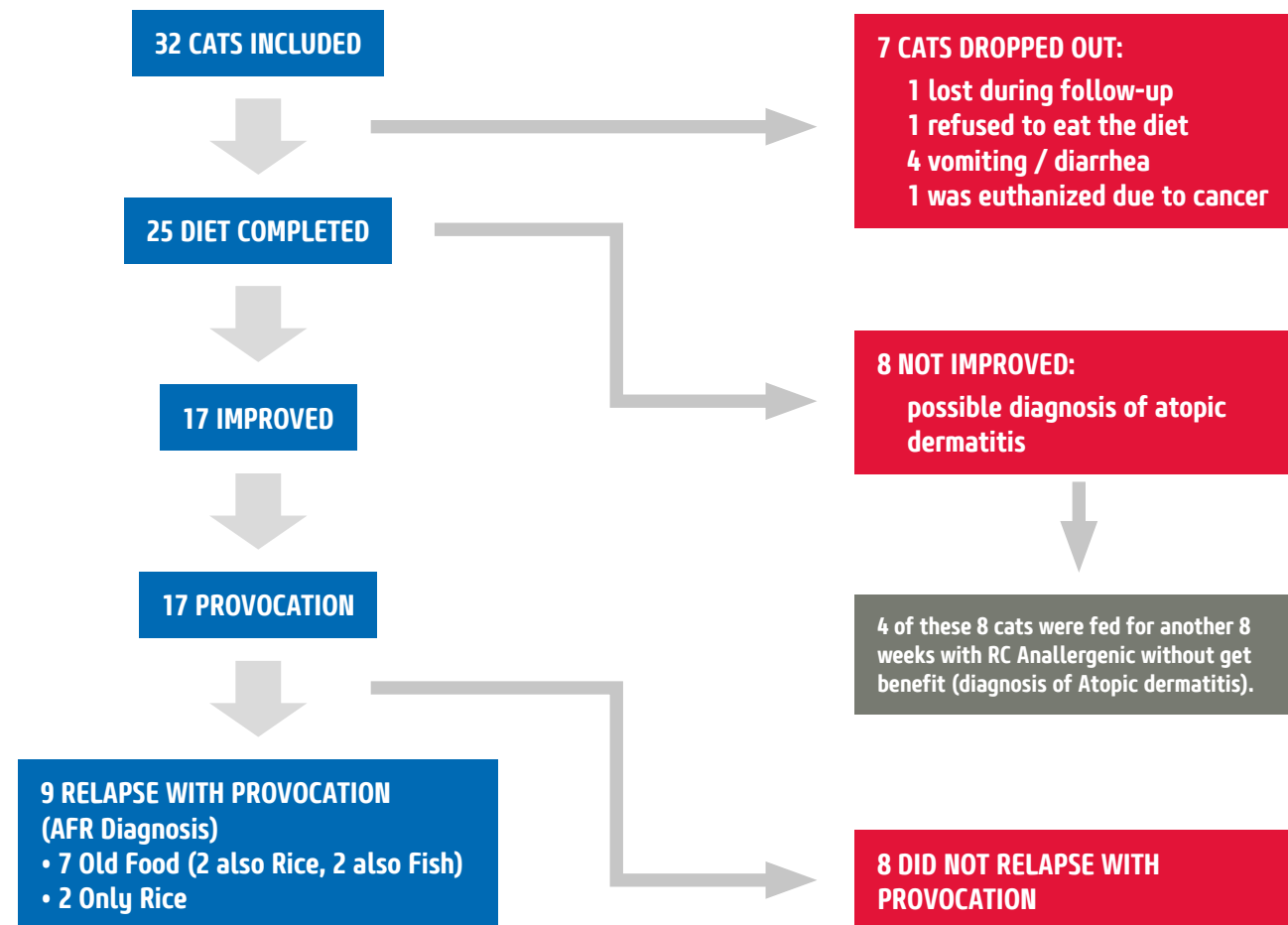
Of the 25 cats which completed the study, 8 cats didn't improve, 4 of these 8 cats have tried a second one hydrolyzed diet (RC Anallergenic) for another 8 weeks without getting improvements (diagnosis of Atopic dermatitis).

Seventeen cats improved and all of them undertook a provocation test. Of the 17 provoked cats, 9 had a relapse of clinical signs followed by an improvement of pruritus after reintroduction of the

elimination diet: 7 relapse with the old diet and 2 only with rice (itching and skin lesions).

These nine cats were then diagnosed with AFR. Between the cats with confirmed AFR that relapse with the old food, two cats reacted also to the rice and two to the fish. Eight cats improved, but they didn't have relapses either with the old diet or with fish and rice, so they were not considered to be affected by AFR.

FLOWCHART



DISCUSSION AND CONCLUSIONS

This study suggests that Farmina Vet Life Ultrahypo Feline Formula is an effective tool for AFR diagnosis in cats, as already shown for the Farmina Vet Life Ultrahypo Canine Formula for AFR in dogs (Matricoti et al, 2018).

The fact that animals allergic to whole fish and/or rice well tolerated the

diet well, suggests that the degree of hydrolysis of its ingredients is high. Finally the palatability has to be considered very good as only one cat refused to eat Farmina Vet Life UltraHypo.

REFERENCES





- BIZIKOVA P, OLIVRY T. A RANDOMIZED, DOUBLE-BLINDED CROSSOVER TRIAL TESTING THE BENEFIT OF TWO HYDROLYSED POULTRY-BASED COMMERCIAL DIETS FOR DOGS WITH SPONTANEOUS PRURITIC CHICKEN ALLERGY. *VET DERMATOL* 2016; 27: 289-E70.
- HOBBI S, LINEK M, MARGNAC G, ET AL CLINICAL CHARACTERISTICS AND CAUSES OF PRURITUS IN CATS: A MULTICENTRE STUDY ON FELINE HYPERSENSITIVITY-ASSOCIATED DERMATOSES. *VET DERMATOL*. 2011; 22: 406-13.
- MATRICOTI I, NOLI C. AN OPEN LABEL CLINICAL TRIAL TO EVALUATE THE UTILITY OF A HYDROLYSED FISH AND RICE STARCH ELIMINATION DIET FOR THE DIAGNOSIS OF ADVERSE FOOD REACTIONS IN DOGS. *VET DERMATOL*. 2018; 29: 408-E134
- NOLI C, BORIO S, VARINA A, SCHIEVANO C. DEVELOPMENT AND VALIDATION OF A QUESTIONNAIRE TO EVALUATE THE QUALITY OF LIFE OF CATS WITH SKIN DISEASE AND THEIR OWNERS, AND ITS USE IN 185 CATS WITH SKIN DISEASE. *VET DERMATOL*. 2016; 27: 247-E58
- NOLI C, DELLA VALLE MF, MIOLO A, MEDORI C, SCHIEVANO C; SKINALIA CLINICAL RESEARCH GROUP. EFFECT OF DIETARY SUPPLEMENTATION WITH ULTRAMICRONIZED PALMITOYLETHANOLAMIDE IN MAINTAINING REMISSION IN CATS WITH NONFLEA HYPERSENSITIVITY DERMATITIS: A DOUBLE-BLIND, MULTICENTRE, RANDOMIZED, PLACEBO-CONTROLLED STUDY. *VET DERMATOL*. 2019; 30: 387-E117
- OLIVRY T, MUELLER RS, PRÉLAUD P. CRITICALLY APPRAISED TOPIC ON ADVERSE FOOD REACTIONS OF COMPANION ANIMALS (1): DURATION OF ELIMINATION DIETS. *BMC VET RES* 2015; 11: 225.
- OLIVRY T (A), MUELLER RS. CRITICALLY APPRAISED TOPIC ON ADVERSE FOOD REACTIONS OF COMPANION ANIMALS (3): PREVALENCE OF CUTANEOUS ADVERSE FOOD REACTIONS IN DOGS AND CATS. *BMC VET RES* 2017; 13: 51.
- OLIVRY T (B), BEXLEY J, MOUGEOT I. EXTENSIVE PROTEIN HYDROLYZATION IS INDISPENSABLE TO PREVENT IGE-MEDIATED POULTRY ALLERGEN RECOGNITION IN DOGS AND CATS. *BMC* 2017; 13: 251.
- OLIVRY T, MUELLER RS. CRITICALLY APPRAISED TOPIC ON ADVERSE FOOD REACTIONS OF COMPANION ANIMALS (5): DISCREPANCIES BETWEEN INGREDIENTS AND LABELING IN COMMERCIAL PET FOODS. *BMC VET RES* 2018; 14:25.
- OLIVRY T, BIZIKOVA P. A SYSTEMATIC REVIEW OF THE EVIDENCE OF REDUCED ALLERGENICITY AND CLINICAL BENEFIT OF FOOD HYDROLYSATES IN DOGS WITH CUTANEOUS ADVERSE FOOD REACTIONS. *VET DERMATOL* 2010; 21: 32-41.
- RICCI R, HAMMERBERG B, PAPS J ET AL. A COMPARISON OF THE CLINICAL MANIFESTATIONS OF FEEDING WHOLE AND HYDROLYSED CHICKEN TO DOGS WITH HYPERSENSITIVITY TO THE NATIVE PROTEIN. *VET DERMATOL* 2010; 21: 358-366.
- STEFFAN J, OLIVRY T, FORSTER SL ET AL. RESPONSIVENESS AND VALIDITY OF THE SCORFAD, AN EXTENT AND SEVERITY SCALE FOR FELINE HYPERSENSITIVITY DERMATITIS. *VET DERMATOL* 2012; 23: 410-418



 canine formulas

Farmina Vet Life

 feline formulas

		Gastrointestinal Puppy		
		Convalescence		
		Gastrointestinal		
		Hepatic		
		Hypoallergenic Fish & Potato		
		Hypoallergenic Egg & Rice		
		Hypoallergenic Duck & Potato		
		UltraHypo		
		Struvite		
		Struvite Management		
		Oxalate		
		Renal		
		Cardiac		
		Joint		
		Obesity		
		Diabetic		