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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

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Background – The diagnosis of adverse food reaction (AFR) is based on an eight week elimination diet (ED) and is confirmed by relapse upon re-challenge with the previously fed diet. Hydrolysed EDs are commonly used for this purpose.

Objective – To evaluate a commercially available hydrolysed fish protein and rice starch ED for the diagnosis of AFR.

Animals – Fifty nonseasonally pruritic dogs.

Methods and materials – Pruritus was assessed with a Visual Analog Scale, lesions with the Canine Atopic Dermatitis Lesions Index and quality of life with a validated questionnaire on days 0 and 56. Antimicrobial treatments were permitted during the first four weeks, and corticosteroids and oclacitinib during the first six weeks. Dogs showing at least 50% pruritus improvement were separately challenged with their prior diet, fish and rice.

Results – Thirty eight dogs completed the ED, four were dropped out due to worsening clinical signs, three to low palatability and five were lost to follow-up. In 24 dogs, pruritus improved by >50% and 22 underwent dietary challenges. Of these, 15 reacted to their prior diets and were diagnosed with AFR, whereas seven did not relapse (and a diagnosis of AFR was considered to be doubtful). Five dogs reacted to fish and four to rice. Of the 14 dogs in which pruritus did not improve, some underwent a second ED and others were successfully treated for atopic dermatitis.

Conclusion and clinical importance – The hydrolysed fish and rice diet seemed to be a useful ED for the diagnosis of AFR, even in dogs allergic to fish or rice.

Introduction

Food allergy is a relatively common canine skin disease. Its prevalence is estimated to be about 5% of all skin diseases and ≤25% of allergic skin conditions in dogs and cats.[1] Although its pathogenesis is still unclear, both immunological and nonimmunological underlying mechanisms are involved, and, consequently, the more generic term adverse food reaction (AFR) is used to include both food allergy and food intolerance.[2]

The most common dermatological sign of AFR is nonseasonal pruritus mainly affecting ventral areas, face, extremities and ears, mimicking the pruritus pattern of canine atopic dermatitis (cAD).[3] The differentiation between AFR and cAD relies on the administration of an elimination diet (ED) for at least eight weeks.[4] An improvement of the skin and/or gastrointestinal condition followed by relapse of clinical signs after re-feeding the usual diet, followed by renewed improvement when feeding the ED, is required to confirm AFR. In order to diagnose or rule out AFR in a nonseasonally pruritic dog, the selection of a proper ED is vital. Finding a novel limited antigen source of proteins and carbohydrates requires an accurate analysis of the alimentary habits of dogs and their owners. It is sometimes difficult to find proteins to which dogs have never been exposed, because leftover table foods are often fed. Even when only pet foods have been fed, it is not always possible to extrapolate the protein source if labels contain the generic term "meat and animal derivatives."[5] Moreover, one study showed that the labels of >80% of canned foods did not accurately represent the meat content: from one to three different animal species that were not included on the ingredient list were found.[6] This discrepancy between declared and actual ingredients also was found both in over-the-counter pet food and in "hypoallergenic" limited antigen diets.[7,8]

Hydrolysed EDs might represent a potentially valuable tool for the diagnosis of AFR, and able to overcome the above-mentioned drawbacks of limited antigen diets, yet investigations on undeclared protein content in these diets have not yet been published.[9,10] Hydrolysis is an enzymatic proteolytic process that cleaves large proteins

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into small peptides, thereby reducing the allergenicity of food components.[11] If hydrolysis is incomplete (>10 kDa), these diets retain the ability to induce AFR in dogs allergic to the original protein.[10,12] Ultrahydrolysed diets (≤10 kDa) have been released on the pet food market. Among these, a hydrolysed fish protein (herring) and rice starch diet (Vet Life Canine UltraHypo, Farmina Pet Food; Nola, NA, Italy) claims the absence of peptides >6 kDa, hence reducing the risk of AFR in dogs. The aim of the present study was to evaluate the performance of Farmina UltraHypo (FUH) diet for the diagnosis of AFR in dogs with nonseasonal pruritic dermatitis. We hypothesized that this hydrolysed fish and rice starch diet would be well tolerated by dogs that were sensitized to fish and/or rice.

Methods and materials

Animals

Inclusion criteria

Nonseasonally pruritic dogs were recruited by four veterinarians in six referral clinics and included whenever they showed clinical signs compatible with cAD and at least one of the following signs: early development of pruritus, recurrent otitis, defaecation three or more times per day, other gastrointestinal signs such as soft faeces, borborygmic, flatulence or burping, recurrent episodes of vomiting or regurgitation, or any history of cutaneous or gastrointestinal reaction to some food. Whenever no preventive measures effective against fleas, ticks or *Sarcoptes scabiei* had been adopted previously, a one month-long trial with oral fluralaner (Bravecto®, MSD; Milano, Italy) was prescribed before inclusion. Fluralaner was chosen because with a single administration it would protect against parasites for the entire study period, whereas the potential adverse reaction to its protein content would occur only at the beginning of the ED. The presence of a skin or ear canal infection was not an exclusion criterion.

Exclusion criteria

Dogs were not enrolled whenever they showed seasonal pruritic flares or concurrent systemic diseases at the time of inclusion or if they had been treated with short-acting glucocorticoids or oclacitinib in the previous two weeks or with long-lasting glucocorticoids or ciclosporin within the previous two months.

Evaluation of dogs

At the time of inclusion (V1), all dogs underwent a dermatological examination, including (when necessary) a cytological evaluation for bacterial and/or yeast infections. The investigators then recorded the historical information and assessed the skin lesions by means of the Canine Atopic Dermatitis Lesions Index (CADLI; range 0–50).[13] Owners were requested to assess their dog's pruritus using a 10 cm Visual Analog Scale (pVAS) with descriptors.[14] Additionally, they were asked to complete a validated quality of life (QoL) questionnaire (range 0–45; the higher the score, the worse the QoL).[15] After inclusion, owners were instructed to feed exclusively FUH for at least eight weeks. In case of bacterial or yeast infection, systemic antibiotic or antifungal drugs and/or topical antiseptic treatments were prescribed for the first three to four weeks together with the diet, starting from the inclusion day onwards. Whenever necessary, oral prednisolone 0.5–1 mg/kg daily or every other day (Prednicortone®, Dechra; Northwich, UK) or oclacitinib 0.4–0.6 mg/kg once daily (Apoquel®, Zoetis; Rome, Italy) was permitted during the first six weeks to control pruritus. Any concomitant drug, with the exception of ectoparasiticides, had to be stopped two weeks before the end of the ED trial and final assessment. If, for any reason, the adjunct treatments were not stopped or skin infections were still present at the end of the ED trial, the diet was prolonged until two weeks after discontinuation of therapies and resolution of infections.

After at least eight weeks of ED (V2), dogs were re-evaluated by the same veterinarian. After assessing the absence of concurrent infections through a dermatological examination, clinicians re-evaluated skin lesions by means of CADLI, and owners completed the pVAS and the QoL questionnaire.

Whenever the owner-assessed pVAS had decreased by ≥50% compared to V1, owners were instructed to perform a diet provocation test to confirm the diagnosis of AFR. Owners were instructed to add home-cooked rice, fish (usually either canned tuna or boiled cod) and the prior diet, individually and one after the other, for a maximum of 14 days each. If a relapse was observed during the provocation phase, owners were instructed to stop the provocative food and feed the ED exclusively until clinical improvement was achieved again, and then to proceed to the next provocation test. In case of relapse with the prior diet, followed by a new improvement with the elimination diet, the dogs were diagnosed with AFR.

Dogs in which pruritus did not improve at all or decreased by <50% and dogs which did not complete the ED trial period were excluded from the provocation test and underwent further diagnostic evaluations, including another ED and/or serological or intradermal testing for environmental allergens and subsequent treatment with allergen-specific immunotherapy (ASIT).

Informed consent and animal use

In order for their dogs to be included in the study, owners needed to give oral informed consent. The food was marketed and labelled for the purpose of AFR diagnosis at the time the study was conducted. Additionally, the procedure of feeding a hypoallergenic diet for eight weeks, followed by challenge periods with the original diet or with single ingredients, was deemed to be a standard of care for the diagnosis of AFR.

Statistical analysis

With the aim of identifying possible clinical parameters that could predict response to ED and/or to provocation tests, several pre-study variables were compared between dogs with confirmed AFR, those with doubtful diagnosis and those not responding to the diet. ANOVA was used for age, CADLI, pVAS and QoL scores, whereas Fisher's test was used for sex and reproductive state. Changes in CADLI, pVAS and QoL between V1 and V2 in each group were expressed as means. All statistical analysis was performed using SAS 9.2 (SAS Institute Inc.; Cary, NC, USA). Significance was set at $P < 0.05$.

Results

Fifty dogs were included in the study. Nine were crossbred, and 41 were pure bred. The mean age was 3.7 years (range: 5 months–14 years). There were 26 males (two of which were castrated) and 24 females (12 spayed). Data on breed, age, sex, CADLI, pVAS and QoL scores and follow-up for each dog are reported in Table S1 (Supporting Information). Thirty nine dogs received concomitant medications during the first four to six weeks of ED, whereas 11 dogs were not treated (see Table S1 for details).

Thirty eight dogs completed the eight week trial with FUH (Figure 1, Table S1). Of these, 14 did not improve whereas 24 were considered to have improved. Of the 24 dogs which improved, 22 underwent the provocation test, whereas in two cases (cases 44 and 45), the owners refused to re-challenge. Upon provocation, 15 of 22 demonstrated a relapse of clinical signs and a relief of pruritus after reintroduction of the ED and were thus diagnosed with AFR. Among the 15 dogs with confirmed

AFR, four dogs reacted to rice and five to fish. Seven of the 22 improved dogs did not relapse either with the old diet, fish or rice, and a diagnosis of AFR was considered to be doubtful. Four of these seven dogs were in remission with no therapy at the time of writing. The other three dogs eventually relapsed: one underwent intradermal allergen testing and were managed with ASIT and two were successfully controlled with oral oclacitinib (0.4–0.6 mg/kg once daily, Apoquel®, Zoetis). Mean pre- and postdiet pVAS, CADLI and QoL scores for each group and percentage improvement for each parameter are given in Tables 1 and 2, respectively.

Fourteen dogs did not improve with the ED (Figure 1, Table S1). Of these, five were tested for environmental allergens: four of them were treated with ASIT and one had negative results in both *in vitro* and *in vivo* allergen testing. This latter dog subsequently improved on a new food trial with a commercial horse-based ED. Two other dogs underwent a new ED trial, one with a home-cooked and one with a commercial rabbit-based ED, but neither improved. Dogs that did not respond either to a second ED trial (two dogs) or were not sufficiently controlled with ASIT (three dogs) and those that did not undergo further diagnostic procedures (seven dogs) were maintained with antipruritic therapies (Table S1).

Twelve dogs did not complete the elimination trial period (Figure 1, Table S1). Three refused to eat the diet due to low palatability and two had signs of acute vomiting. Of these two dogs, one improved on a limited antigen home-cooked ED and the other one was lost to follow-up. Two dogs showed worsening of pruritus. One of these was tested for environmental allergens and was managed with ASIT, whereas the other improved with a limited antigen home-cooked ED. Five dogs were lost to follow-up after V1.

No statistically significant differences in age, sex, reproductive state, CADLI, VAS pruritus or QoL scores were observed at V1 between dogs that were ultimately confirmed with AFR, those that failed to respond to the diet, and those that failed to respond to provocative challenges. In the 15 dogs with confirmed AFR, pruritus scores had improved by a mean of 68.9%, CADLI scores by a mean of 72.2% and QoL by a mean of 45.8% at V2 (Table 2).

Discussion

To the best of the authors' knowledge, this is the first study to evaluate FUH, a hydrolysed fish protein and rice starch diet, as an ED. A decrease in pruritus and clinical signs was observed in 24 of 38 (63%) of dogs that completed the ED, in line with what was observed in a previous study in which 20 out of 29 dogs improved with a hydrolysed casein and chicken-based diet.[16] However, only 15 of 22 (68%) dogs that improved on the ED and completed provocative challenges reacted to other foods. This resulted in an AFR prevalence of about 40% (15 of 38 dogs that completed the ED trial). A similar prevalence was reported in previous studies.[17–19]

Because this study was not controlled with another ED, it is not possible to know the true false-negative response rate (dogs with AFR that failed to respond to the FUH diet trial). In cases where a first ED trial fails, it may be advisable to undergo a second trial with another diet which contains completely different ingredients. In a previous study, 10% of dogs needed a second ED trial for the confirmation of AFR.[17] Of the dogs included in our study, one (Case 27) that did not improve after eight weeks of the diet and two dogs that reacted to FUH (Case 38 with increased pruritus and Case 39 with

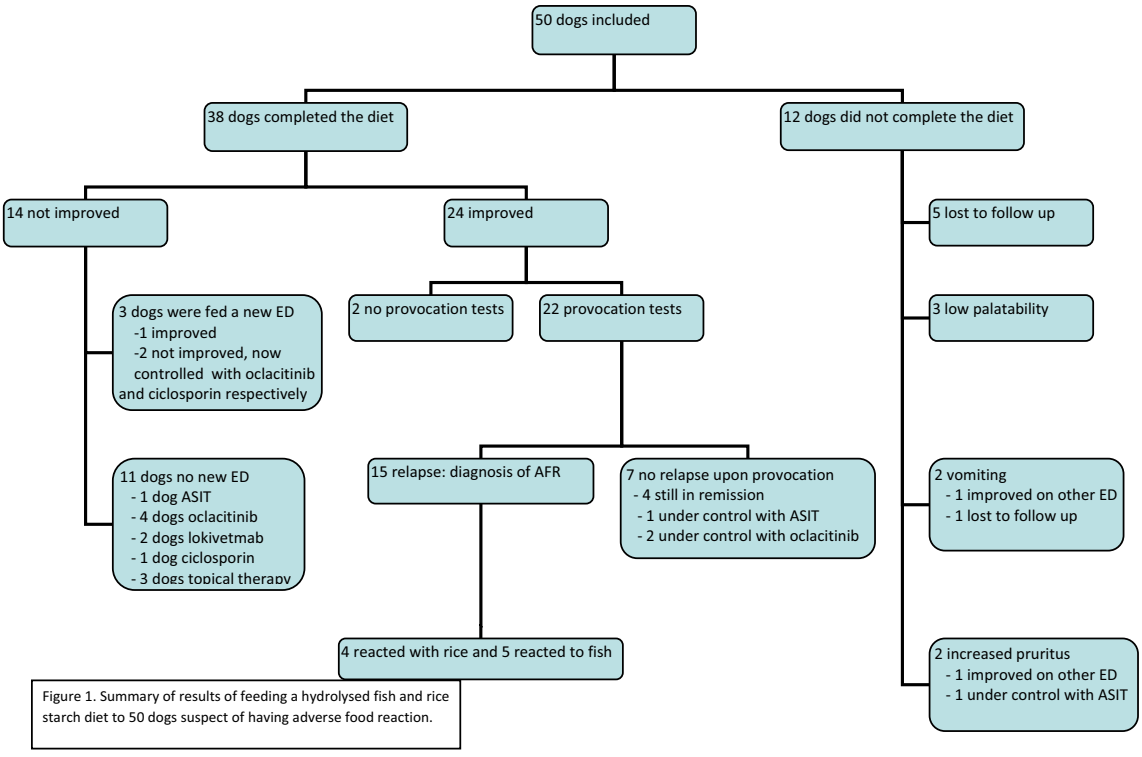

Figure 1. Summary of results of feeding a hydrolysed fish and rice starch diet to 50 dogs suspected of having adverse food reaction.

Table 1. Mean pruritus score, lesional score and quality of life score before and after a two month hydrolysed fish and rice starch elimination diet in 36 dogs with signs of cutaneous allergy

	Number of dogs	pVAS V1	pVAS V2	CADLI V1	CADLI V2	QoL V1	QoL V2
Confirmed adverse food reaction	15	6.1	1.9	12.4	3.4	20.1	10.6
Improved, no relapse upon provocation	7	5.5	1.4	8.9	1.0	15.0	11.0
Nonresponders	14	6.3	6.8	13.2	11.6	18.4	19.6

CADLI, Canine Atopic Dermatitis Lesion Index (range 0–50), QoL quality of life score (range 0–45), V1 visit 1, V2 visit 2, at the end of the elimination diet, pVAS pruritus Visual Analog Scale score (range 0–10)

Table 2. Mean percentage improvement of pruritus score, lesional score and quality of life score after a two month hydrolysed fish and rice starch elimination diet in 36 dogs with signs of cutaneous allergy

Mean percentage improvement	Number of dogs	pVAS	CADLI	QoL
Confirmed adverse food reaction	15	68.9	72.6	45.8
Improved, no relapse upon provocation	7	74.5	88.8	26.7
Nonresponders	14	−7.9	12.1	−6.5

CADLI Canine Atopic Dermatitis Lesion Index (range 0–50), QoL quality of life score (range 0–45), pVAS pruritus Visual Analog Scale score (range 0 −10)

vomiting) subsequently improved on a second diet trial. Unfortunately, a second diet trial was not accepted by the owners of the other dogs which did not improve on the first ED trial.

There are several reasons why undetected false-negative results may have occurred. It has been reported that a minority of dogs with AFR can recognize ultrahydrolysed diets,[20] and one study reported that some dogs develop IgE to carbohydrate proteins present in rice and cornstarch, such as maize-derived granule-bound starch synthase-1 and rice-derived glutelin type B1.[21] It also is possible that a longer trial period was needed for some nonresponders. One review reported that 5% of dogs would need a longer diet duration, up to 13 weeks, for a complete remission of signs of AFR.[4]

For those dogs that responded to the ED but failed to recrudesce upon re-challenge, it is possible that eliminating infections during the first month of the eight week trial was responsible or that feeding a balanced commercial diet corrected undiagnosed dietary deficiencies. The fact that four dogs allergic to rice and five to fish could tolerate this ED suggests that the level of hydrolysis is adequate in FUH or that fish fed during the provocation test was antigenically different to the herring contained in the ED. The producer declares that FUH contains hydrolysed proteins with a low molecular weight (<6 kDa) as unique source of proteins, a limit considered acceptable for a hydrolysed diet.[10] Extensive hydrolysation may impact palatability, which can in turn affect compliance. In the present study, three dogs refused the diet, which is in line with previous reports in which 5–6% of dogs would not accept the ED.[19] Gastrointestinal signs associated with this diet were limited to vomiting in two dogs, which differed from a previous report in which constipation, soft faeces or diarrhoea were observed in 10% of dogs.[18]

With regard to QoL, it is interesting to note that pVAS and CADLI each improved by approximately 70%, but QoL did not reach 50% in dogs with confirmed AFR. A similar trend of QoL scores improving less than pruritus and skin lesions has been observed in other studies conducted on allergic dogs, with QoL typically improving by 20–40% after therapeutic interventions.[22,23] This observation confirms the need to measure QoL together with clinical parameters when evaluating therapeutic interventions in animals with allergic dermatoses: clinical improvement may not reflect a better QoL, due to the burden of the treatment on the pet and/or the owner.

Besides the open design of this study, an additional weakness is that deterioration upon dietary provocation was evaluated by means of owner-assessed pVAS and not veterinarian-assessed CADLI. However, owner-assessed pVAS is a validated tool and considered to be reliable for the evaluation of signs of cAD and of therapeutic interventions.[14] A decrease in pVAS by 50% is often used in clinical studies as a marker of treatment success. Furthermore, pruritus can be present in absence of lesions or when lesions are very mild. Dietary provocation tests were performed at home by the owners, and pruritus was the first sign to re-appear in cases with an adverse response. Therefore, owner-assessed pVAS was considered to be preferable to CADLI for the evaluation of provocation tests, as owners quickly withdrew the culprit ingredient in case of positive reaction, not allowing for the development of skin lesions. Additionally, as can be noted in Table S1, changes in pVAS at V2 commonly mirrored changes in CADLI scores.

Farmina UltraHypo can be considered a useful option for the diagnosis of AFR in dogs, if fed exclusively for at least eight weeks. In the case of failure, it is advisable to undertake a second diet trial with different protein and carbohydrate sources. As with other ultrahydrolysed diets, a minority of AFR cases may be missed with this ED.

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Supporting Information

Additional Supporting Information may be found in the online version of this article.

Table S1. Breed, age, sex and reproductive state, pruritus scores, lesional scores and quality of life scores of 50 dogs with cutaneous allergy that underwent a two month elimination diet with a hydrolysed fish and rice starch hypoallergenic food.

Résumé

Contexte – Le diagnostic de réaction alimentaire (AFR) est basé sur un régime d'éviction de huit semaines (ED) et est confirmé par un test de provocation alimentaire avec l'alimentation précédemment utilisée. Les hydrolysats sont fréquemment utilisés dans ce but.

Objectif – Evaluer une alimentation industrielle composée de protéines de poissons hydrolysées et amidon de riz pour le diagnostic d'AFR.

Sujets – Cinquante chiens prurigineux non saisonniers.

Matériel et méthode – Le prurit a été déterminé par une échelle visuelle analogue, les lésions avec un CADESI et la qualité de vie par un questionnaire à jours 0 et 56. Les traitements antimicrobiens ont été autorisés pendant les quatre premières semaines et les corticoïdes et l'oclacitinib étaient autorisés pendant les six premières semaines. Les chiens montrant au moins 50% d'amélioration du prurit ont ensuite été provoqués avec leur aliment initial.

Résultats – Trente huit chiens ont complété le régime d'éviction, quatre ont été retiré en raison de l'aggravation des signes clinques, trois à cause de faible appétence et cinq ont été perdus de vue. Pour 24 chiens, le prurit s'est amélioré de plus de 50% et 22 ont montré des difficultés alimentaires. Parmi eux, 15 ont réagi à leur premier aliment et ont été diagnostiqué AFR tandis que sept n'ont pas réagi au test de provocation (et le diagnostic d'AFR était donc douteux). Cinq chiens ont réagi au poisson et quatre au riz. Sur les 14 chiens pour lesquels le prurit ne s'est pas amélioré, certains ont subi un deuxième régime d'éviction et d'autres ont été traités avec succès pour une dermatite atopique.

Conclusion et importance clinique – Le régime poisson et riz hydrolysé semble être utile come régime d'éviction pour le diagnostic d'AFR même si les chiens sont allergiques au poisson ou au riz.

Resumen

Introducción – el diagnóstico de reacción alimentaria adversa (AFR) se basa en una dieta de eliminación (ED) de ocho semanas y se confirma por recaída tras la reexposición con la dieta previamente alimentada. Frecuentemente se utiliza EDs hidrolizadas para este propósito.

Objetivo – evaluar una dieta hidrolizada de proteína de pescado y almidón de arroz comercialmente disponible para el diagnóstico de AFR.

Animales – cincuenta perros con prurito no estacional.

Métodos y materiales – el prurito se evaluó con una escala análoga visual, lesiones según el Índice de lesiones en Dermatitis Atópica Canina y calidad de vida con un cuestionario validado en los días 0 y 56. Se permitieron tratamientos antimicrobianos durante las primeras cuatro semanas y corticosteroides y oclacitinib durante las primeras seis semanas. Los perros que mostraban al menos 50% de mejora del prurito fueron expuestos separadamente a su dieta anterior, pescado y arroz.

Resultados – Treinta y ocho perros completaron la ED, cuatro abandonaron debido al empeoramiento de los signos clínicos, tres debido a baja palatabilidad y cinco se perdieron durante el seguimiento. En 24 perros, el prurito mejoró en> 50% y 22 de ellos se volvieron a exponer a las dietas previas. De estos, 15 reaccionaron a sus dietas anteriores y fueron diagnosticados con AFR, mientras que siete no recayeron (y se consideró que el diagnóstico de AFR era dudoso). Cinco perros reaccionaron a pescado y cuatro a arroz. De los 14 perros en los que el prurito no mejoró, algunos se sometieron a una segunda ED y otros fueron tratados con éxito por dermatitis atópica.

Conclusión e importancia clínica – la dieta hidrolizada de pescado y arroz fue una dieta de eliminación útil para el diagnóstico de AFR, incluso en perros alérgicos al pescado o al arroz.

Zusammenfassung

Hintergrund – Die Diagnose einer Futtermittelreaktion (AFR) basiert auf einer Eliminationsdiät von 8 Wochen (ED) und wird durch einen Rückfall bei der Provokation mit dem vorher gefütterten Futter bestätigt. Hydrolysierte EDs werden häufig zu diesem Zweck verwendet.

Ziel – Eine Evaluierung einer kommerziell erhältlichen hydrolysierten ED mit Fischprotein und Reisstärke zur Diagnose einer AFR.

Tiere – Fünfzig nichtsaisonal juckende Hunde.

Methoden und Material – Der Juckreiz wurde mittels Visual Analog Scale erfasst, die Veränderungen mit dem Canine Atopic Dermatitis Lesions Index und die Lebensqualität an den Tagen 0 und 56 mit einem validierten Fragebogen beurteilt. Während der ersten vier Wochen war eine antimikrobielle Therapie erlaubt und Korticosteroide und Oclacitinib während der ersten 6 Wochen. Bei den Hunden, bei denen zumindest eine 50%ige Verbesserung des Juckreizes vorkam, wurde eine separate Provokation mit dem früheren Futter, mit Fisch und Reis durchgeführt.

Ergebnisse – Achtunddreißig Hunde beendeten die ED, vier fielen aufgrund einer Verschlechterung ihrer klinischen Zeichen aus, drei aufgrund einer schlechten Palatabilität und bei fünf Hunden gab es keinen Follow-Up. Bei 24 Hunden verbesserte sich der Juckreiz um > 50% und bei 22 wurde eine Futterprovokation durchgeführt. Von diesen reagierten 15 auf ihre früheren Diäten und wurden mit einer AFR diagnostiziert, während sieben keinen Rückfall zeigten (und die Diagnose der AFR in Zweifel gezogen wurde). Fünf Hunde reagierten auf Fisch und vier auf Reis. Von den 14 Hunden, bei denen sich der Juckreiz nicht verbesserte, wurde bei einigen eine zweite ED durchgeführt und bei anderen wurde eine atopische Dermatitis erfolgreich behandelt.

Schlussfolgerungen und klinische Bedeutung – Die hydrolysierte Fisch und Reis Diät schien sogar bei Hunden, die allergisch auf Fisch und Reis waren, eine nützliche Variante für eine Diagnose der AFR zu sein.

要約 – 背景 - 食物有害反応(AFR)の診断は、8週間の除去食(ED)試験に基づいており、以前に摂食していた食事による負荷試験によって症状が再発することで確認される。加水分解EDは一般に除去食試験に使用される。

目的 – 本研究の目的は、AFR診断に対する市販の加水分解魚タンパク質EDおよび米スターチEDを評価することである。

被験動物 – 50頭の非季節性掻痒を呈する犬。

方法および材料 – 掻痒はVisual Analog Scaleによって、皮膚病変はAtopic Dermatitis Lesions Indexによって、生活の質に関しては試験開始0日目及び56日目に実施したアンケートによって評価した。抗菌療法は最初の4週間、コルチコステロイドおよびオクラシチニブは最初の6週間に限り使用を認めた。少なくとも50%の掻痒改善を示した犬に対し、以前の食事、魚、米による負荷試験を別々に実施した。

結果 – 38頭の犬がEDの摂食期間を完了したが、4頭は臨床徴候悪化のため、3頭はEDに対する低嗜好性を示したため、また5頭は追跡調査が困難となったため脱落した。 24頭の犬は、掻痒が50%以上改善し、22頭が負荷試験に進んだ。22頭中15頭は以前の食事に反応しAFRと診断したが、7頭は再発しなかった(この7頭に関してAFRの診断は疑わしいと考えられた)。 食物負荷試験の結果、5頭は魚に反応し、4頭は米

に反応した。痒みが改善しなかった14頭の犬のうち、数頭は2回目のEDの摂食を開始し、その他の犬はアトピー性皮膚炎の治療が施され奏効した。
結論と臨床的重要性 – 加水分解された魚および米からなる食事は、魚または米にアレルギーのある犬に対しても、AFRの診断に有用なEDであるようであった。

摘要
背景 — 食物副反应(AFR)的诊断基于八周的食物限制(ED),并且饲喂先前食物,如果因食物激发而症状复发,方可确认。水解EDs常被作此用途。
目的 — 评估可用于AFR诊断的现有商业化水解鱼蛋白和大米淀粉ED。
动物 — 五十只非季节性瘙痒的犬。
材料和方法 — 在第0天和第56天,用直观模拟表作瘙痒评分,用犬异位性皮炎病变指数和生活质量表评估病变。前四周允许抗菌治疗,前六周允许使用皮质类固醇和奥拉替尼。瘙痒改善程度超过50%的犬,分别用先前食物、鱼和米饭进行激发。
结果 — 38只犬完成了ED治疗,退出的犬有4只因临床症状恶化,3只因适口性差,5只随访时失联。瘙痒改善了50%以上的犬有24只,22只接受了食物激发。 其中15只对其先前的食物有反应,并被诊断为AFR,而7例未复发(并且认为AFR的诊断存疑)。5只犬对鱼,4只对大米有反应。在瘙痒没有改善的14只犬中,有些犬进行第二次ED,另一些按照异位性皮炎治疗有效。
结论和临床意义 — 水解鱼和大米日粮用于ED,看起来能够诊断AFR,即使对鱼或大米过敏的犬也是如此。

Resumo
Contexto – O diagnóstico de reação adversa a alimentos (RAA) é baseado na realização de uma dieta de eliminação (DE) com duração de oito semanas e confirmado pela recidiva dos sinais clínicos após o desafio com a dieta utilizada anteriormente. As DE hidrolisadas são comumente utilizadas com esse propósito.
Objetivo – Avaliar uma DE comercial hidrolisada de proteína de peixe e amido de arroz para o diagnóstico de RAA.
Animais – Cinquenta cães apresentando prurido não sazonal.
Métodos e materiais – O prurido foi avaliado pela escala analógica visual (*visual analog scale)*, as lesões pelo índice de lesões de dermatite atópica canina (*Canine Atopic Dermatitis Lesions Index*) e a qualidade de vida por um questionário previamente validado, nos dias 0 e 56. Antibioticoterapia foi permitida durante as primeiras quatro semanas, e corticosteroides e oclacitinib durante as primeiras seis semanas. Os cães que apresentaram um mínimo de 50% de melhora no prurido foram desafiados separadamente com a sua dieta anterior, peixe e arroz.
Resultados – Trinta e oito cães completaram a DE, quatro foram excluídos do estudo devido à piora dos sinais clínicos, três devido à baixa palatabilidade e cinco não retornaram e houve perda de contato. Em 24 cães, houve melhora de mais de 25% no prurido e 22 foram submetidos ao desafio dietético. Destes, 15 reagiram às suas dietas anteriores e foram diagnosticados com RAA, enquanto sete não apresentaram recidiva dos sinais clínicos (e o diagnóstico de RAA foi considerado questionável). Cinco cães reagiram a peixe e quatro a arroz. Dos 14 cães que não apresentaram melhora no prurido, alguns foram submetidos a uma segunda DE e outros foram tratados satisfatoriamente para dermatite atópica.
Conclusão e importância clínica – A dieta hidrolisada de peixe e salmão pareceu ser uma DE útil para o diagnóstico de RAA, mesmo em cães alérgicos a arroz ou peixe.