Treatment of food allergy

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Abstract

The most effective way controlling dogs with food allergic atopic dermatitis is by avoiding the offending allergens. The trigger can be detected by repeated challenges with singular protein sources. However, many owners simply choose to further feed the elimination diet (ED). In this case the ED has to be well balanced in order to prevent deficiencies. If the patients develop a new sensitization, the ED has to be repeated. In cases of food induced urticaria, angiedema or flare ups of FIAD drugs like glucocorticoids are helpful. Concurrent atopic dermatitis and secondary infections must also be accordingly treated.
Dietary treatment

Once the elimination diet (ED) is finished and the diagnosis food allergy is confirmed, the best way controlling a dog with food allergic atopic dermatitis (FIAD) is by avoiding the offending allergens. Ideally, each available protein source should be tested separately in order to establish a “black list” of offending proteins and a “white list” of safe foods. As reactions usually occur within one or two weeks, testing all available proteins is sometimes frustrating and always time consuming and many owners decide to further feed the ED. Home cooked elimination diets (HCED) and commercial diets (novel protein diets (NPD) or hydrolyzed diets (HD)) can be all used, but the diet has to be balanced. Therefore, especially if a HCED is chosen as long-term treatment, it has to be adequately supplemented with vitamins and minerals. Non-flavoured substances should be preferred to decrease the risk of a relapse. If the owners wish to switch to a commercial diet, it must not contain the offending allergen. When the patient was challenged with separate food components before, then the new diet can be chosen without difficulty. Otherwise the new diet has to be introduced in the same way the provocation test has been carried out before. If symptoms such as pruritus, skin rashes, diarrhea, vomiting, sneezing are detected within one to two weeks, the tested food probably contain one or several offending allergens and the diet should not be used further. Importantly, the patient must be fed once again the ED until it is again clinically controlled, before another diet can be tried. However there are some animals who will not tolerate a commercial diet at all. These dogs are supposed to be sensitized against preservative compounds or epitopes generated during the processing of the food and should be subsequently fed a home cooked diet. Leistra and co-workers have shown that some food allergic dogs remain healthy while they are fed a home cooked diet but relapse when they received a commercial diet containing the exact same proteins. This is however not
observed frequently and most dogs can be fed with commercial diets. It should be
stressed one more time that these latter diets present the huge advantage of being
well-balanced and, very often, to contain high amounts of essential fatty acids that
improve the skin barrier.

If the diet is followed accurately, the prognosis is good. Nevertheless after two to
three years, some animals may develop other sensitization to the new protein\(^1\). In
fact, one must keep in mind that food allergy consists into a genetic predisposition to
develop sensitization to food allergens and that dogs develop this sensitization
against the allergens they are fed. In other words food allergic dogs are not
predisposed to develop allergy against beef, fish or chicken but develop sensitization
upon repeated challenges. In this case, the dietary trial has to be repeated.

As in an ideal HD all the epitopes are destroyed and the IgE crosslinking is therefore
avoided, it would be a true hypoallergic diet and therefore be optimal to avoid further
sensitization\(^3\). Unfortunately in these diets not every single protein is (sufficiently)
hydrolyzed, making a relapse and/or a new sensitization still possible\(^6\).

In men, avoiding the offending food allergens strictly for a certain time leads to
disappearance of antibodies and can eventually result in regaining of the oral
tolerance. In other words, after one to two years, up to one third of the affected
patients tolerated ingestion of the former food allergen\(^7\). In pets not much data is yet
available, but so far, this hyposensitization seems to occur in rare cases\(^3\).

Medical treatment

Glucocorticoids

In a study on 843 dogs suffering from canine atopic dermatitis (CAD), Favrot and co-
workers demonstrated that FIAD dogs’ response to treatment with glucocorticoids
was less good that for dogs with classical atopic dermatitis. This was already mentioned by other authors, too.\textsuperscript{8-11} Systemic treatment with such drugs is however often beneficial and may be proposed, at least in the first weeks of the diet trial in animals with severe pruritus or gastro-intestinal treatment. In this case, the last three to four weeks of the trial should be free of drug to insure proper interpretation of the restriction diet and subsequent challenge. It should also be kept in mind that some food allergic dogs are not fully controlled with the diet only and may need some other supportive therapy. Glucocorticoids may be of great help in such cases, but steroid side-effects should be monitored carefully.

In food allergic patients with skin changes, one should also consider using topical glucocorticoids such as hydrocortisone aceponate. These compounds resent to big advantage to get minimal side effects.

\textit{Cyclosporine and other antiallergic drugs}

To the author’s knowledge, no particular studies on pets with FIAD treated with cyclosporine (CsA) have been carried out. Owing to the supposed pathomechanism of food allergy and the mode of action of the drug, one can however suppose that the drug should be helpful. Dogs not responding to glucocorticoids will probably do not respond better to cyclosporine, however. In fact, authors of another work on dogs with CAD not responding (anymore) to glucocorticoids, treated them subsequently with cyclosporine. When compared to other studies on CAD treated with CsA, the efficacy yielded the lowest improvement.\textsuperscript{12, 13}

Antihistaminica are beneficial in cases of FIAD-induced urticaria and angiedema, but are otherwise of little help.\textsuperscript{3, 14}

\textit{Antimicrobial treatments}
Food allergic patients often develop secondary bacterial and/or yeasts infection, exactly like atopic individuals. In such instance, antibiotics and/or antifungals used locally or systemically will be very helpful and should be used before any immunomodulatory treatment.

In summary, treatment with glucocorticoids is helpful in cases of flare ups (e.g. treats from visitors, unattended pets eating leftovers containing the offending food allergens etc.) or in cases of FIAD with urticaria\(^3\). As a sole long-term treatment in cases of pure FIAD, corticosteroids are not a satisfying solution. Further work is necessary before any firm advice regarding the benefit of treatment of FIAD with CsA can be given.

_Treatment of food allergy in the context of atopic dermatitis_

One should keep in mind that numerous food allergic patients are also sensitized to non food allergens, especially environmental allergens. In this regard, parallel treatment of the concurrent classical atopic dermatitis will greatly contribute to the improvement of the overall quality of life of the patient.
References


