

Table 1. Total dietary intake of omega-3 and omega-6 fatty acids and standard deviation in dogs supplemented with placebo, flax oil or commercial EPA/DHA capsules (mean \pm standard deviation)

	Omega-3 fatty acids (mg/kg bodyweight)	Omega-6 fatty acids (mg/kg bodyweight)
Placebo	84 \pm 73	509 \pm 196
Flax oil	327 \pm 437	468 \pm 199
Commercial capsules	141 \pm 67	426 \pm 174

EPA Eicosapentaenoic acid, DHA Docosahexaenoic acid

Table 2. Clinical scores reported by owners and clinicians before and after treatment with placebo, flax oil or a commercial product (mean \pm standard deviation)

	Placebo	Flax oil	Commercial capsules
Pretreatment clinician scores	29.0 \pm 10.0	25.2 \pm 12.2	31 \pm 14.5
Post-treatment clinician scores (P value)*	23.5 \pm 7.9 (P=0.297)	18.1 \pm 13.0 (P=0.008)	15.4 \pm 11.1 (P=0.01)
Pretreatment owner scores	36.8 \pm 11	29.7 \pm 13.2	29.9 \pm 15.6
Post-treatment owner scores (P value)*	30.2 \pm 14 (P=0.313)	20.5 \pm 12.5 (P=0.004)	17.3 \pm 11.2 (P=0.02)

*P values obtained by comparing clinical scores of clinicians/owners before and after treatment with a Wilcoxon matched pairs test.

shampoo therapy was added during the study. None of these shampoos contained fatty acids.

Three dogs were on glucocorticoid maintenance therapy prior to inclusion, with unsatisfactory results. In all three dogs, the dose was less than 0.2 mg/kg/day and was continued throughout the study. In one of these dogs, the dose could be decreased further, but due to the low initial dose the score assigned was unchanged. Two of the dogs improved by 25 per cent in pruritus scores. One of these dogs was on placebo, the other on commercial supplement. The last dog was on commercial supplement without any improvement.

Antibiotics were administered in seven dogs prior to the study. Six dogs were on antibiotics at the end of the study. Four dogs had developed a pyoderma during the study. Two dogs received antibiotics as pulse maintenance therapy prior to inclusion and throughout the study.

The daily dietary intakes of omega-3 and omega-6 fatty acids were calculated by adding the fatty acid content of the consumed diet and the supplement (Table 1). The dietary intake of omega-3 and omega-6 fatty acids was not different between the three groups at the beginning of the trial (P=0.546 and P=0.489, respectively). The dietary intake of omega-3 fatty acids more than doubled with supplementation in the group receiving the commercial capsules (to 141 \pm 67 mg/kg, P=0.0001) and quadrupled in the flax oil group (to 326 \pm 436 mg/kg, P=0.0011). The omega-6 intake increased by an average of 17 per cent in the flax oil group (to 548 \pm 218 mg/kg, P=0.579).

There were no significant differences between groups at the beginning of the trial for clinical scores determined by clinicians (P=0.623) or owners (P=0.612) (Table 2). Clinical scores for dogs receiving flax oil and commercial EPA/DHA supplements improved significantly during the 10 weeks of supplementation compared with the control group (P=0.008, P=0.01 and P=0.297, respectively) (Table 2). The mean scores of dogs receiving the commercial EPA/DHA supplement and the flax oil capsules at the end of the study were lower than those of dogs receiving placebo. However, the difference was not significant for owner or clinician scores.

Improvement of more than 50 per cent was seen in the owner scores of two dogs and the clinician score of one dog in the placebo group and in both scores of four dogs in the group receiving flax oil capsules. Five of the dogs receiving commercial EPA/DHA capsules improved by more than 50 per cent according to clinicians and four of these improved based on owner scores. Complete clinical remission with no other treatment but the supplementation was seen in two dogs receiving commercial EPA/DHA capsules and one dog given flax oil capsules. In two of these dogs, supplementation was discontinued and clinical signs recurred. Dogs improved again when supplementation was resumed. In the third dog, supplementation was administered continuously after the study and no recurrence occurred during a 12-month follow-up period.

There was generally a good correlation between owner and clinician scores, between overall owner scores (the sum of

their pruritus, clinical and medication scores) and owner pruritus scores, and overall clinician scores and clinician pruritus scores (P=0.001, $r^2=0.754$). Owner and clinician scores differed by more than 20 per cent for judging improvement in seven of the 29 dogs completing the study. Owner scores revealed a better improvement in two dogs; clinician scores revealed a better improvement in five dogs.

There was no correlation between clinician score and omega-3 fatty acid intake (P=0.19), omega-6 fatty acid intake (P=0.84) or omega-6:3 ratio (P=0.18). Comparing the dogs in remission on therapy with the corresponding dogs not improving at all, there were no obvious differences in the dietary intake of omega-3 or omega-6 fatty acids or the omega-6:3 ratio, or in the clinical scores at the start of supplementation.

DISCUSSION

Pruritus scores, overall clinician scores and overall owner scores associated extremely well for all groups before and after fatty acid supplementation. This suggests that the scoring system was valid and that the degree of pruritus is generally a good indicator of the severity of atopic dermatitis in dogs.

Supplementation with essential fatty acids has been reported as a successful alternative to glucocorticoid therapy in the treatment of pruritic dermatoses in dogs (Bond and Lloyd 1992b, Logas and Kunkle 1994) and cats (Harvey 1991, 1993, Logas and Kunkle 1993). Proposed mech-