Blood biochemistry and haematology profiles between raw and dry food diet fed Staffordshire bull terriers

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Introduction

Following a tendency of more natural habits by people, there has been increasing interest in feeding dogs with raw and more ‘natural’ food. It is controversial if dogs should eat more like wolves, or if they have adapted to be closer to omnivores. The aim of this study was to determine the effects of two different diets on the serum biochemistry and haematology profiles in Staffordshire bull terriers (SBT).

Material & Methods

• A total of 39 client-owned SBTs were included in the analyses
• Atopic dermatitis was diagnosed in 22 dogs, 7 were non-atopic, and 10 unclassified
• 22 dogs ate commercial raw diet and 17 dogs ate commercial dry diet for median 138 d
• Haematology was analysed from EDTA whole blood and biochemistry from serum samples at the baseline and at the end of the diet intervention
• The dry diet was Hill’s Science PlanTM Canine Adult Sensitive Skin with Chicken
• Two commercial raw diets were MUSH Pork-Chicken-Lamb and Beef-Turkey-Salmon
• The analysis of covariance (ANCOVA) was used for analysis
• Age, weight, medication, gender, duration time of the diet, baseline blood value, and diagnosis were controlled in the model

Results

Phosphate, cholesterol, and red blood cell count (RBC) in both diet groups after the trial

In addition, the platelet count and the mean cell haemoglobin concentration (MCHC) were significantly higher, and the mean cell volume (MCV) and mean cell haemoglobin (MCH) were significantly lower in the raw diet group than in the dry diet group after the diet intervention.

Discussion

The raw diets included more protein than the dry diet (38/42.5 % vs. 27.5 % in dry matter, respectively) which could explain some of the results in red blood cell indices. In addition, the carbohydrate content (raw diets: 1.5/2.3, dry diet: 48.4, all in dry matter), and fat content (raw diets: 50.0/44.8, dry diet: 17.4, all in dry matter) were significantly different between the diets. Also the fact that dry dog food is highly processed should be taken into account, as the heating process decreases the heme-iron concentration (1), and the level of creatine (2), and eating processed foods has been shown to increase blood cholesterol in humans (3, 4).

Conclusion

• Two very diverse diets have a different kind of effect on blood haematology and biochemistry profiles in dogs
• The results seen in this study might be due to different kind of contents of the diets or different kind of processing methods of the diets
• More research is needed to confirm these results and find the physiological processes behind these phenomena.