

Obesity resulted in a significant increase in blood lipids in dogs

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Obesity is the most common nutritionally related health problem in companion animals. The objectives of this study were to assess the effects of obesity on cholesterol or triglycerides concentrations in total plasma and in lipoproteins fractions in dogs and to evaluate the effects of a change in diet composition in obese dogs.

Twenty four dogs, 12 control lean and 12 chronically obese Beagle dogs, matched for age and sex, were included in the study. Both groups consisted of 3 entire and 3 neutered females as well as of 6 castrated males and were fed the same diet (Royal Canin Adult Premium Croc, crude protein 24.0 %, fat 16.1 %, 4140 kcal Metabolizable Energy/kg) for 1 month to maintain constant body weight (BW) (baseline level). Mean (\pm SEM) ages were 4.4 ± 0.9 and 4.7 ± 0.6 yrs and mean BW were 12.7 ± 0.7 kg and 21.9 ± 0.8 kg for the lean and the obese group respectively. Then, the obese group was offered a high protein low fat low energy diet for 1 month at baseline level (Royal Canin Veterinary Diet Obesity, crude protein 34.0 %, fat 9.5 %, 2800 kcal Metabolizable Energy/kg). Transition period to adapt to new diet was of 1 week. The different lipoproteins fractions were separated by ultracentrifugation-precipitation method¹. Total plasma and lipoprotein cholesterol and triglycerides concentrations were measured in control lean dogs and in obese dogs fed the 2 different diets after 1 month. When compared with control lean dogs, obese dogs presented a significant increase in plasma, VLDL, HDL and LDL cholesterol concentrations and a significant increase in plasma and VLDL triglycerides concentrations. In obese dogs, the change of diet resulted in a significant decrease in energy consumption. However no decrease in BW was observed. Plasma and lipoprotein lipid concentrations were significantly decreased in obese dogs when fed the low calorie diet, suggesting an effect of diet composition and/or energy restriction, before any BW loss. These observations should be taken into account in the management of obese dogs.

¹Barrie et al. *Journal of Small Animal Practice*, 1993, 34, 226-231.