Canine Obesity and its Welfare Implications

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Introduction

Obesity is the most common nutritional disorder of dogs and is defined as an accumulation of excessive amounts of adipose tissue in the body as a result of either excessive dietary intake or inadequate energy utilisation (German, 2006). According to the most recently published Australian data, 33.5% of dogs were classified as overweight and 7.6% as obese, showing that the prevalence of overweight and obese dogs is higher in Australia than in other countries (McGreevy *et al*., 2005). This report examines several studies on how this disease affects the overall health and welfare of the dog.

Discussion

Obesity is a rising epidemic associated with a number of medical conditions. Most cases of obesity are related to owner-induced variables, namely over-feeding or under-exercising or a combination of both. A study by Klinkenberg *et al*. (2006) suggested that feeding patterns, intensity of exercise and body condition score or weight, were significant risk factors in the development of canine diabetes mellitus (CDM). CDM often requires lifelong treatment with insulin injections and regular monitoring of blood glucose, as well as dietary management. These factors must be carefully managed to minimise negative welfare outcomes.

The investigation involved owners of 19 dogs with CDM and owners of 40 controls (dogs without CDM) responding to a survey with questions relating to feeding patterns, diet, frequency of feeding treats, owner-perceived activity level and exercise patterns. An inverse relationship was noted between frequency of intense training (hunting, training and cycling) and development of CDM. This is logical since intense training and exercise promote the development of lean tissue mass and reduce the propensity to accumulate excess weight. Unfortunately, due to the large proportion of working breeds involved in this study, the finding of a significant positive effect of intense training is not applicable to all breeds.

Data revealed that the dogs with CDM received more treats, more canned food, homemade diets and table scraps than the control group, all considered risk factors contributing to excess weight. Additionally, dogs that developed CDM were more frequently judged overweight by their owners and often had a history of being overweight throughout life.

Obese animals are likely to be exercise intolerant, less mobile and may suffer a decline in general well-being. Osteoarthritis is a well-illustrated example of how obesity affects mobility. The abnormal stress imposed by the excess weight on the major weight-bearing joints, especially stifles and elbows, is thought to be an important factor in the aetiology of canine osteoarthritis. Joint injury, resulting in reduced mobility and energy expenditure, could lead to a cause-effect-cause cycle, thereby progressively worsening both obesity and joint integrity (Markwell & Butterwick, 1994). This suggests that obesity diminishes health and quality of life.

Mlacnik *et al*. (2006) undertook a study that investigated the effects of a weight-reduction program combined with physical therapy in 29 adult overweight or obese dogs with clinical and radiographic signs of unilateral osteoarthritis. All participants were randomly allocated to either group 1 or 2. Group 2 received a treatment program consisting of caloric restriction and home-based physical therapy to be conducted three times daily by stroking and kneading the lumbar muscles and limbs, with special regard to the affected limb. Group 1 was treated with additional intensive physical therapy, including transcutaneous electrical nerve stimulation (TENS).

The results of the study indicate that significant weight loss was achieved in both groups, but the combination of caloric restriction coupled with intensive physical therapy (group 1) seemed more efficient in weight reduction and improving the clinical outcome. Alleviation of lameness, reduction in pain

sensation, improved muscle strength and endurance are all factors that promote increased canine physical activity, thus facilitating further weight loss. However, the absence of monitoring and evaluation of the home-based physical therapy as carried out by owners in group 2 may have affected their results. This should be noted as a limitation in this study.

Owner compliance is critical to any successful calorie-control program tailored for their dog. It is important, through discussion of the clinical implications of obesity, to convince the owner of the value of weight reduction to their pet (Markwell & Butterwick, 1994; Robertson, 2003). Kushner *et al*. (2006) suggested that the human-companion animal bond between owners and their dogs can provide the foundation to successful weight loss in both owners and their dogs.

The People and Pets Exercising Together (PPET) study was a one-year project involving 36 overweight owners with an obese pet (PP group) and 56 overweight people only (PO group). The aim was to study the effectiveness of a weight-loss program that combined people and pets exercising together because the aetiology of weight gain is similar in domestic animals and humans (Kushner *et al*., 2006).

Results from the study indicated that the PO group had consistently higher percentages of weight loss than the PP group. However, the average total physical activity level of the PP group was 3.9 hours per week as compared with 3.5 hours clocked by the PO group. The positive effect of well-being resulting from interactions during physical activities undertaken together and the improvement of the human-companion animal bond might explain the longer average physical activities observed in the PP group.

Physical activities, such as walking and playing, are important potential benefits of dog ownership. Dog acquisition presents a mutually beneficial situation since owners look to their dogs for social support, while dogs obtain their much-needed exercise and interaction with their owner. One limitation of the PPET study is that it focuses more on the role of dogs providing social support to the owner. It will be useful if further studies can be conducted to derive quantitative information on other aspects, such as improved exercise tolerance and lean muscle mass, which directly benefit the dog involved.

Conclusion

The prevalence of obesity represents an important welfare issue. Information concerning risk factors for this disease and its adverse effects on the general health and welfare of dogs, will promote better management and prevention of obesity.

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