Musculoskeletal Disorders

Canine Osteoarthritis

Osteoarthritis is the most prevalent canine joint disorder, estimated to affect 20% of adult dogs. It is characterized by clinical signs such as lameness, stiffness, and difficulty rising or climbing stairs. Risk factors include excess weight, prior joint injury or developmental orthopedic conditions, increasing age, genetics, and size (i.e., large and giant breeds). In osteoarthritis, both inflammation and oxidative stress contribute to cartilage and other joint tissue damage. A multimodal management approach including targeted nutrition can help improve mobility in osteoarthritic dogs as well as slow the progression of joint damage.

Key Messages

- Nutritional strategies are the foundation of osteoarthritis management in dogs.
  - Weight loss is key in overweight or obese osteoarthritic dogs.
    - Weight loss reduces the extra mechanical stress placed on joints by the excess weight.
    - In obesity, adipose tissue releases pro-inflammatory substances, which promote a chronic inflammatory state. Loss of excess fat helps reduce inflammation.
    - Obesity is associated with increased production of free radicals, thus weight loss may also help reduce oxidative stress and associated joint tissue damage.
    - Research has shown that weight loss of only 6.1% (on average) in obese osteoarthritic dogs decreased lameness.[1]
  - A high protein to calorie ratio supports lean muscle mass while promoting loss of fat during calorie restriction.
  - The omega-3 fatty acids eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA) have anti-inflammatory activity, which can reduce cartilage degradation and lameness.
    - Purina research has shown that feeding osteoarthritic dogs a therapeutic diet high in EPA and DHA can help improve mobility. Both objective and subjective measures of lameness significantly improved.[2]
  - Glucosamine is a building block of cartilage and when supplemented, helps support healthy cartilage.
  - Antioxidants, e.g., vitamin E, may reduce oxidative stress in the joints.
- Keeping dogs in lean body condition helps slow the development of osteoarthritis.
  - Purina research has shown that maintaining dogs in a lean body condition from puppyhood can delay or reduce the onset and severity of hip and multiple joint osteoarthritis.[3,4]

- Research also showed that the average age at which 50% of lean-fed dogs required treatment for osteoarthritis was 3 years later than the heavier control dogs (13.3 versus 10.3 years of age).[5]

- In large and giant breed puppies, rapid growth and excess calcium intake should be avoided to reduce development of skeletal abnormalities, which can increase the risk of osteoarthritis.

References

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