

## Research Articles - K9

### Using CanEVA®-K9 in Pets with Arthritis

The study on velvet antler for dogs was published in the February issue of the Canadian Veterinary Journal (Can. Vet. J. 2004 Volume 45, pg. 133-139). Below is a summary by a veterinary surgeon:

Clinical evaluation of a powder of quality elk velvet antler for the treatment of osteoarthritis in dogs; Maxim Moreau, Jacques Dupuis, Norbert H Bonneau, Manon Lécuyer

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#### Introduction

The purpose of this study was to scientifically evaluate the health benefits of quality elk velvet antler (EVA) by administering it to dogs afflicted with osteoarthritis. Osteoarthritis (OA) is a common and painful musculoskeletal condition in dogs, often secondary to structural abnormalities, such as hip or elbow dysplasia or ligament injury. It is characterized by erosion of articular surfaces, bone sclerosis, and osteophyte production, leading to pain, joint stiffness, and muscular atrophy. Velvet antler refers to elk or deer antlers harvested in the velvet stage of growth. Elk velvet antler powder is prepared from the inner cartilaginous matrix following drying and removal of the velvet covering. Velvet antler contains minerals and trace elements, growth hormones and growth factors, protein, collagen, lipids and glycosaminoglycans including chondroitin sulfate and glucosamine sulfate. Velvet antler has been demonstrated to exhibit an anti-inflammatory effect in a rodent model of inflammation. The recommended dosage of elk velvet antler is 15 to 20 mgs per kg body weight once or twice per day. (top)

#### Materials and Methods

Dogs weighing more than 20 kg and older than 18 months with radiographic evidence of OA in one or more joints and clinical signs confirmed by an orthopedic examination were included in the study. The dogs were recruited from the medical files of the Veterinary Teaching Hospital, Université de Montréal. The owners were asked to complete an assessment of daily activities of their dogs to generate a score for activity performances. The gait of each dog was analyzed by used of a biomechanical force plate in a 10 m runway connected to a computer to measure the ground reaction force (GRF) for the most severely affected joint. The surgeon's assessment of the walking gait, posture, mobility, muscular atrophy, joint pain and visual appreciation was converted to numerical scores. Radiographic evaluation of elbows, hips and stifles was performed under routine sedation for all dogs and was also assigned a numerical score. (top)

#### Study Protocol

A double-blind and placebo-controlled study design was used. Forty-five dogs with OA were randomly assigned to one of two experimental groups. Thirteen dogs were used in the placebo-EVA group where they received a placebo for 30 days and then were given EVA for the next 60 days. The EVA group included 25 dogs, which received EVA for 60 days. Dogs between 20 and 39.9 kg, 40 to 59.9 kg, and 60 to 79.9 kg received 2, 3 and 4 capsules of EVA respectively by mouth every 12 hours. Each scoop of EVA contained 280 mgs of powdered elk antler. Gait analysis, GRF analysis and daily activity assessments were performed at days 0, after 30 days of placebo and/or 60 days of EVA. (top)

#### Results

Age, weight, GRF, duration of clinical signs, radiographic findings and assessment scores were not significantly different between the groups at the start of the trial. After 30 days of treatment with placebo, GRF and gait analysis and activity assessment scores were not significantly different from day 0. However, following 60 days of treatment with EVA, the GRF analyses were significantly improved compared to pre-treatment results and significantly exceeded the results obtained for dogs on placebo. Owner's assessments of daily activities were significantly improved compared to both pre-treatment scores and the group receiving the placebo.

The selected hematological and biochemical parameters revealed no evidence of abnormalities of clinical relevance following administration of placebo or EVA and the owners reported no side effects related to their administration.

Seven dogs did not complete the study. Four were withdrawn for various reasons, including pregnancy, owner's change of mind, chronic diarrhea, and a dermatological condition requiring corticosteroid therapy. Three dogs died during the course of the study, two from chronic adrenal atrophy and one from hemangiosarcoma. The investigations submitted the

medication used for the two dogs with adrenal atrophy to an independent laboratory to screen for 20 potential pesticides. Gas chromatograph analysis showed no detectable traces of any pesticides. Further, 5 dogs which had received EVA during the study were tested for adrenal function. The results indicated normal adrenal function in these dogs. Based on these findings, these deaths were considered to be unrelated to EVA treatment. (top)

### Conclusions

The authors concluded that the administration of EVA was effective in alleviating the condition in arthritic dogs. They further stated that consideration should be given to the use of EVA in the treatment of canine OA. Although EVA contains chondroitin sulfate, the authors, in a previous study, were unable to demonstrate significant gait improvement with chondroitin sulfate in greater amounts than the raw material administered in this study. They observed that administration of EVA resulted in a significant reduction of muscle atrophy, suggesting a myotrophic effect for velvet antler. (top)

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