Orally Administered Sodium Hyaluronate in the Dog: A Clinical Impression

Introduction

Hyaluronan has been used in the animals for the past twenty years. Its use as an intra-articular and intravenous treatment have been well widespread. Hyaluronan is a glycosaminoglycan ubiquitous in all vertebrates. In people, circulating HA has been shown to be 10 to 100 micrograms/l with a half-life of two days or less.[1] Recent studies on hyaluronic acid have examined normal turnover and metabolism[3], changes in lymphatic flow[4], absorption through skin[5], changes in blood levels in various diseased states[6] and immunomodulary effects[7]. Other glycosaminoglycans with physiological significance such as chondroitin, dermatan and heparain sulfates have been shown to be absorbed orally. [8 9 10 11] HA enters the bloodstream in significant amounts through the lymph and is rapidly absorbed via a receptor into liver endothelial cells where degradation follows [1]. Recent studies in animals have shown that hyaluronan administered orally is absorbed[12]. In people, a recent study using collagen / hyaluronan showed that hyaluronan was a safe and effective dietary supplement for the adjunctive treatment of osteoarthritis.[13]

This purpose of this study was to evaluate the clinical effect of orally administered Sodium Hyaluronate (Hyaluronan) in the dog. There are numerous anecdotal and testimonial reports of efficacy and more recently, research in horses has shown that oral hyaluronan is effective in preventing lameness in the racing thoroughbred(reference) and horses recovered faster after arthroscopic surgery (reference)

Material and Methods

Seventeen adult 30 kg German shepherd dogs were used in the study. The dogs were part of a dog rescue project. They were randomly divided in to 2 groups with no selection as to age or pre-existing conditions or lameness. One group (n=9) was given a chewable placebo containing inert ingredients. The other group (n=8) was given a commercially available beef and liver flavored chewable tablet containing 10mg of sodium hyaluronate. The dogs were evaluated for lameness at the beginning of the study and then 35 days later. The same blinded examiner was used for both examinations. The degree of lameness was ranked on the severity. 0 being no lameness evident and 5 being non-weight bearing lame. The dogs were also observed for a lack of appetite, normal stool, and depression.

Results

Throughout the study the dogs were evaluated with no signs of adverse reactions to the product. With exception of the of the treatment protocols, no medications were given to the dogs throughout the 40 day study. The following table contains the results of this study.

	Improved	No Change	Worsened	Total
Treated Group (8 dogs)	62.5 % (5)	37.5% (3)	0% (0)	100 % (8)
Control Group (9 dogs)	33.3 % (3)	44.4% (4)	22.2 % (2)	100 % (9)

Discussion

Lameness in large breed dogs such as German Shepherds is common and usually casued by some type of arthritic condition. In this study, dogs were not chosen from history or pre-existing conditions. All examinations were performed by a blinded observer and the majority of the dogs in the HA treated group improved. The most significant improvement was seen in the dogs suffering from severe hip lameness, however it was also reported that some dogs in the treated group seemed happier and more attentive. This study tends to support testimonials from pet owners that report significant improvement in their pets overall pain and lameness. Also, this study also supports the researched that has been performed in other animals as well as people. A larger study is indicated. A larger group of dogs with documented lameness' would be worthwhile. This study suggests that orally administered hyaluronan is a useful method of treating arthritis in the dog.