

# A Dietary Nutraceutical Product Reduces Synovial Fluid Prostaglandin E<sub>2</sub> in Horses With Osteoarthritis: A Double-Blind, Randomized Trial

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A dietary nutraceutical product may be a useful postsurgical treatment for elevated prostaglandin E<sub>2</sub> in horses with surgical removal of osteochondral fragments. Authors' addresses: Department of Plant Agriculture, University of Guelph, Equine Sciences Building, 50 McGilvray Street, Guelph, ON N1G 2W1, Canada (Pearson); and Milton Equine Hospital, 10207 Guelph Line, Campbellville, ON L0P 1B0, Canada (Cote, Desjardins); e-mail: wpearson@ovc.uoguelph.ca. \*Corresponding and presenting author. © 2012 AAEP.

## 1. Introduction

A dietary nutraceutical product<sup>a</sup> (DN) has previously demonstrated prophylactic prostaglandin E<sub>2</sub> (PGE<sub>2</sub>)-inhibitory effects in interleukin (IL)-1-stimulated cartilage explants and in horses with experimentally induced articular inflammation. The current study was undertaken to evaluate the therapeutic effect of including DN in the diet of horses with articular inflammation and/or cartilage damage secondary to osteochondral fragmentation of the carpal or metacarpal joints.

## 2. Hypothesis or Objectives

It was hypothesized that inclusion of DN in the diet of horses immediately after surgical removal of osteochondral fragment would reduce synovial fluid PGE<sub>2</sub>, nitric oxide (NO), and glycosaminoglycan (GAG), while improving clinical signs of articular inflammation in these horses.

## 3. Methods

Fifteen horses presenting at an equine hospital for surgical removal of an osteochondral fragment of the carpal or metacarpal joints were included. Horses

received DN (0 or 21 g/d) for 42 days, beginning immediately after surgery. Synovial fluid before and after supplementation was analyzed for PGE<sub>2</sub>, GAG, and NO. Radiographs and lameness assessments were also obtained.

## 4. Results

Synovial fluid PGE<sub>2</sub> was significantly reduced from baseline in horses receiving DN, but not in those horses treated with surgery alone. There was no difference between treatments on GAG, NO, radiographs, or lameness grade.

## 5. Conclusions

These data support previously published experimental evidence of an inhibitory effect of DN on synovial fluid PGE<sub>2</sub>. In the current study, DN effectively reduced synovial fluid PGE<sub>2</sub> in horses with surgical removal of osteochondral fragments.

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## Footnote

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Research Abstract

## NOTES

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