Effects of Intra-Articular Administration of Hyaluronic Acid and Methylprednisolone Acetate in the Tarsal-Metatarsal Joint of Horses

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Intra-articular administration of methylprednisolone acetate and hyaluronic acid (MPA/HA) and MPA alone was superior to HA on day 14 in grade of lameness. Most lameness grades improved 35–40% by day 2 and 70–80% by day 14. Authors’ address: University of Illinois at Urbana-Champaign, 1102 West Hazelwood Drive, Urbana, Illinois 61802; e-mail: ercdvm@gmail.com. © 2010 AAEP.

1. Introduction
Currently, all treatment dosages for the tarsal-metatarsal (TMT) joint are based on clinical impression with little scientific data. This project is designed to weigh the benefits and side effects of methylprednisolone acetate (MPA), hyaluronic acid (HA), and the combination (MPA/HA).

2. Materials and Methods
Ten cutting horses with localized bilateral TMT joint lameness were treated with 20 mg HA, 40 mg MPA, or MPA/HA, with synovial fluid samples taken on days 0, 2, and 14. Lameness, radiographs, glycosaminoglycan (GAG), prostaglandin E2 (PGE2) concentrations, and needle redirections were evaluated. Statistical significance was determined (p < 0.05) using a two-way repeated-measures analysis of variance (ANOVA).

3. Results
Lameness decreased significantly (p < 0.001) over the 14 days. On day 14, MPA and MPA/HA significantly (p = 0.023) decreased lameness compared with HA alone in the lamest leg. There was no difference between treatment and days with PGE2 synthesis. With GAG concentration, HA and MPA significantly increased on day 2 (p = 0.007) and decreased (p < 0.001) on day 14, but there was no difference with MPA/HA. Radiographs and needle redirections did not correlate with the lameness, treatment, or PGE2.

4. Discussion
To the authors’ knowledge, there have been no MPA/HA in vivo studies in the TMT joint to evaluate lameness and synovial fluid. Unlike the current study, other recent studies found that MPA and HA had no effect on lameness scores.

Acknowledgment
The costs associated with this study were covered by funds from the Illinois Equine Industry Research and Promotion Board.