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Combination of Intra-Articular (IA) Triamcinolone Acetonide and Polysulfated Glycosaminoglycan (PSGAG) Compared With IA PSGAG or Placebo for Treatment of Osteoarthritis Using an Equine Experimental Model

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Intra-articular polysulfated glycosaminoglycan (PSGAG) in combination with triamcinolone acetonide (TA) was not as beneficial as intra-articular PSGAG alone. Authors’ address: Gail Holmes Equine Orthopaedic Research Center, Colorado State University, 300 West Drake, Fort Collins, Colorado 80523; e-mail: dfrisbie@colostate.edu. © 2010 AAEP.

1. Introduction

Using a combination of PSGAG and corticosteroid is reported clinically, although supporting studies are lacking.

2. Materials and Methods

This was a blinded experimentally controlled randomized study using 24 horses in an established model. Osteoarthritis (OA) was induced in one carpal joint of each horse. On days 14, 21, 28, 35, and 42, horses received one of three intra-articular treatments: (i) 250 mg PSGAG + 5 mg triamcinolone acetonide (TA) + 125 mg amikacin; (ii) 250 mg PSGAG + 125 mg amikacin; and (iii) 2 ml 0.9% NaCl + 125 mg amikacin (PCB). Clinical, biochemical, gross, and histological outcome parameters were objectively measured in this 70-day study. Data were analyzed using a combination of analysis of variance matrices; p ≤ 0.05 was considered statistically significant.

3. Results

No adverse treatment-related events were detected. The model induced a significant change in clinical parameters. Treatment with PSGAG + TA resulted in significantly less radiographic pathology compared with placebo in OA joints. This treatment also resulted in less synovial fluid and cartilage proteoglycan; more histological fibrillation was also noted in OA compared with PCB joints. Treatment of OA joints with PSGAG resulted in improvements in total protein, white blood cell count, and
proteoglycan levels in the synovial fluid compared with PCB treatment.

4. Discussion

Results of this study indicated that PSGAG in combination with TA did not have as favorable results as PSGAG alone at the tested dose and frequency.

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