Clearance of Corticosteroids Following Intra-Articular Administration of Clinical Doses to Racehorses

Heather K. Knych, DVM, PhD, DACVCP*; Jeff Blea, DVM; and Rick M. Arthur, DVM

Association of Racing Commissioners International (ARCI) regulatory recommendations are appropriate for administration of maximum intra-articular doses of 18 mg of triamcinolone acetonide (TCA), 600 mg methylprednisolone acetate (MPA), 18 mg isoflupredone, and betamethasone doses less than 30 mg. Authors’ addresses: K.L. Maddy Equine Analytical Chemistry Laboratory (Knych), School of Veterinary Medicine (Arthur), University of California, Davis, CA 95616; and Von Bluecher, Blea, Hunkin, Inc., PO Box 970, Sierra Madre, CA 91024 (Blea); e-mail: hkknych@ucdavis.edu. *Corresponding and presenting author. © 2014 AAEP.

1. Introduction

Over the last several years, there has been a nationwide cooperative effort to establish threshold concentrations and withdrawal times for corticosteroid use in racehorses. Withdrawal time guidelines are based on pharmacokinetic studies of single intra-articular corticosteroid injections.1,2 As dosing regimens are specific to individual horses and highly variable, it is not possible to establish regulatory guidelines for every dosing scenario. The goal of the study described here was to assess the applicability of current regulatory recommendations for corticosteroids based on clinical protocols used by practitioners.

2. Materials and Methods

Fifty-eight Thoroughbred racehorses received varying doses of TCA,a,b MPA,c isoflupredone,d or betamethasonee intra-articularly in various joints by the treating practitioner. Blood samples were collected at 0, 7, 10, 14, 21, 28, and 35 days post drug administration. Serum samples were analyzed by liquid chromatography mass spectrometry for quantitation of drug concentrations.

3. Results and Discussion

Serum elimination varied depending upon the dose and the number and specific joints treated. Serum concentrations fell below the ARCI recommended threshold by days 7 (100 pg/mL) for both TCA (9–18 mg dose) and isoflupredone (4–18 mg dose) and day 21 (100 pg/mL) for MPA (40–600 mg dose). Betamethasone fell below the recommended threshold (10 pg/mL) by 7 days for doses less than 30 mg but not until 10 days for doses of 30–60 mg. It is important to note, however, that results reported here may differ if compounded formulations are used.
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Conflicts of Interest

The Authors declare no conflicts of interest.

References and Footnotes

