Effects of Three Reversal Agents on Detomidine-Induced Changes in Behavior and Cardiac and Selected Blood Parameters in the Horse

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Tolazoline, yohimbine, and atipamezole transiently reverse the sedative and cardiac effects of sublingually administered detomidine. Authors’ address: K.L. Maddy Equine Analytical Chemistry Laboratory, University of California, West Health Science Drive, Davis, CA 95616; e-mail: hknnych@ucdavis.edu. *Corresponding author. © 2011 AAEP.

1. Introduction
Detomidine® gel is well absorbed and elicits many of the same cardiac and behavioral changes observed with the parental formulations. Antagonism of central nervous system and cardiovascular effects by α2 antagonists after parenteral administration of detomidine have been well characterized. The goal of the current study was to assess the effect of α2 agonists used in veterinary medicine on selected behavioral and physiologic effects of sublingually administered detomidine.

2. Materials and Methods
This study was conducted in a randomized fashion with nine horses per dose group. All horses received detomidine by itself and before tolazoline, yohimbine, and atipamezole administration. Blood samples were collected for measurement of plasma drug concentrations (data not reported), packed cell volume, and plasma proteins. Chin-to-ground distance (head height) and heart rate and rhythm were measured and urination and defecation frequency were recorded for 6 hours after drug administration.

3. Results and Discussion
Head height increased after administration of the reversal agents; however, this effect was transient, with a return to prereversal values as early as 1 hour. Detomidine-induced bradycardia and increased incidence of atrioventricular blocks were either transiently or incompletely antagonized by all reversal agents. Packed cell volume increased with tolazoline administration and atipamezole increased urine volume and urination frequency.

Footnote
*Detomedan®, Orion Corporation, Espoo, Finland.