

THE EFFECTS OF DETOMIDINE INFUSION WITH AND WITHOUT VATINOXAN ON BLOOD GLUCOSE AND INSULIN CONCENTRATIONS IN HORSES

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Introduction

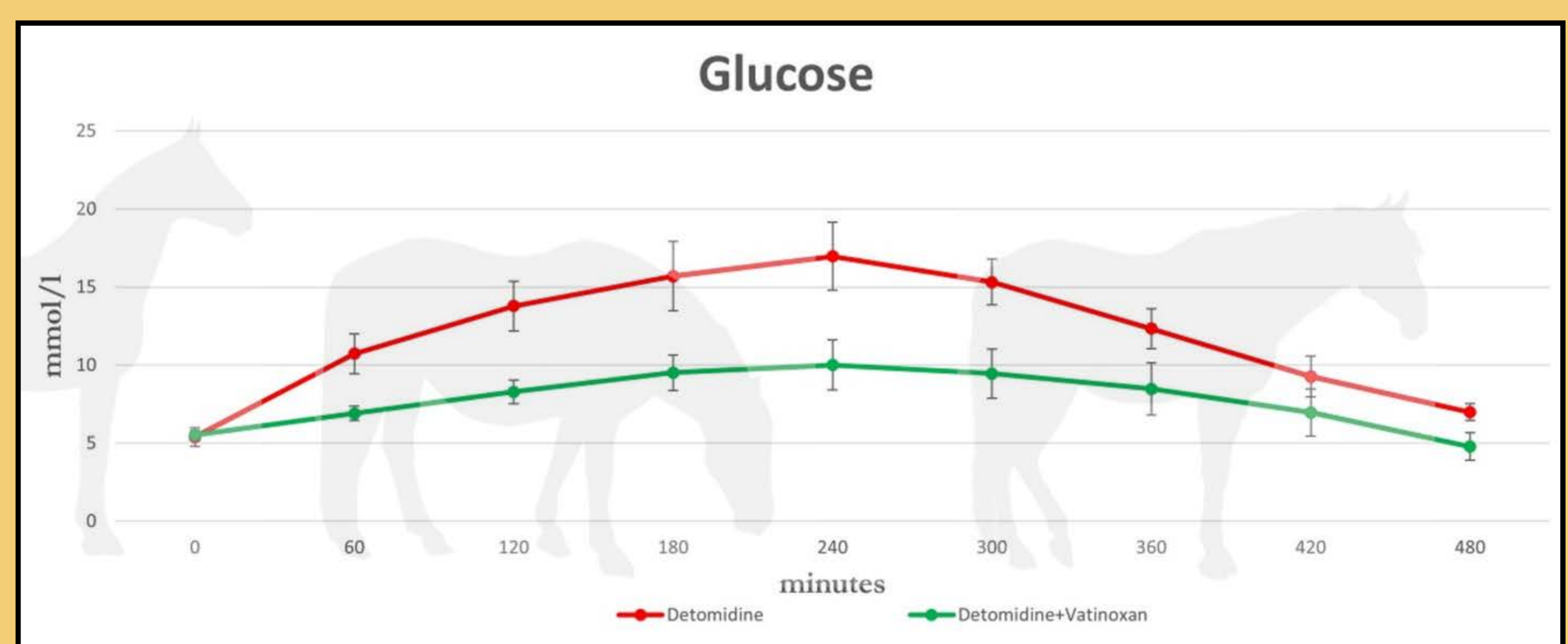
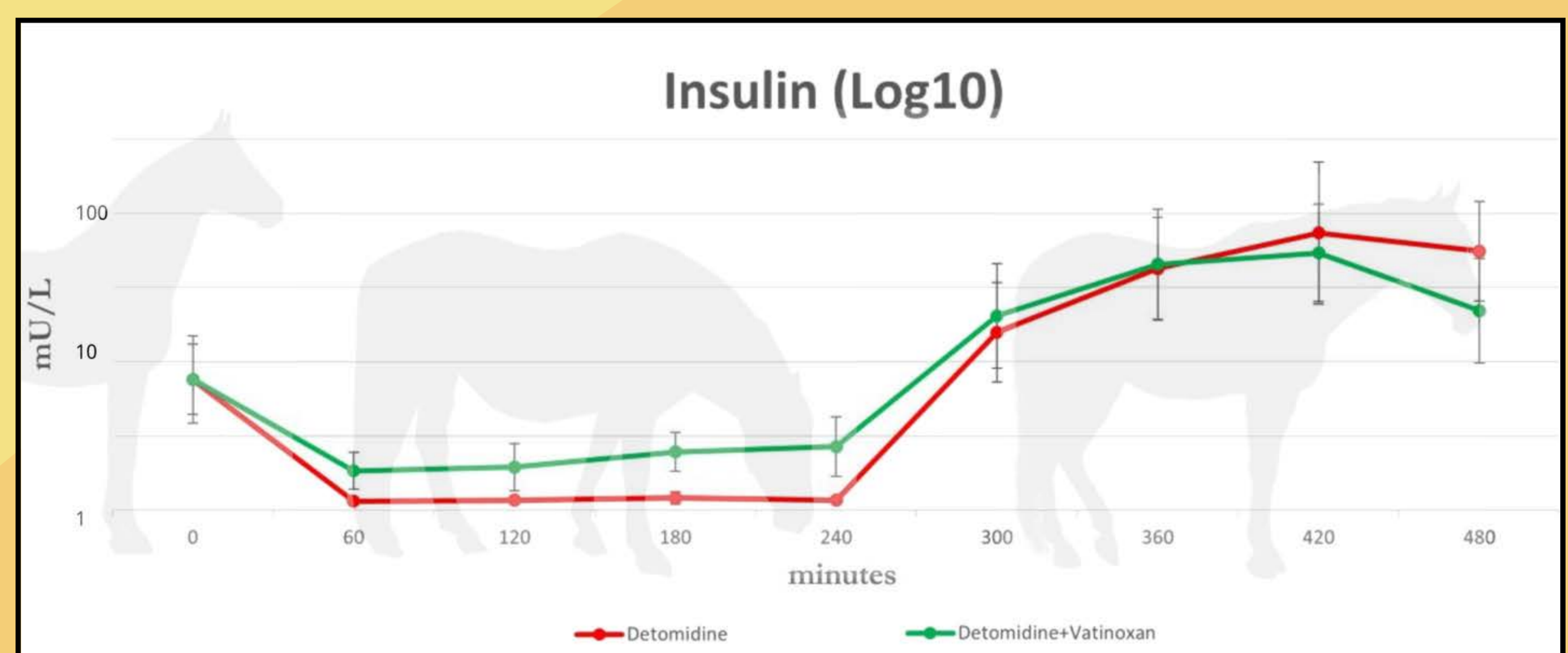
Alpha-2 adrenoceptor agonists are widely used for equine sedation regardless of their side effects. The aim of this study was to investigate the effects of detomidine infusion with and without a peripherally acting alpha-2 adrenoceptor antagonist, vatinoxan, on blood glucose (BG) and insulin concentrations in standing horses.

Methods

Eight Finnhorses were assigned to two 4-hour infusions: detomidine (0.01 mg/kg + 0.015 mg/kg/h IV) (DET) and a combination of DET and vatinoxan (0.15 mg/kg + 0.05 mg/kg/h IV) (DET+VAT) using cross-over design. Blood samples were taken before, during and for 4 hours after the infusion at one hour interval. Blood glucose was analyzed with a portable glucometer (AlphaTRAK2 Zoetis) and serum insulin concentration using ELISA (Mercodia equine insulin ELISA).

Results

Mean BG peaked at the end of DET infusion and was higher than with DET+VAT ($p < 0.001$). During DET infusion, median insulin concentration was lower than limit of quantification and lower than with DET+VAT ($p = 0.018$). With neither treatment, insulin concentration reached the baseline within 4 hours after the infusion.



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Conclusions & clinical relevance

Vatinoxan alleviated the detomidine-induced decrease in serum insulin concentration and increase in BG during 4-hour infusion and may be a beneficial addition to equine sedation protocols. Perioperative hyperglycemia is known to be associated with adverse events in humans, but the role of transient hypoinsulinemia is less well recognized. In horses, both phenomena warrant more research.