

ACEPROMAZINE, DETOMIDINE AND MORPHINE: “THE WOODEN HORSE” EVALUATION OF STANDING SEDATION PROTOCOLS IN THE EQUINE PATIENTS UNDERGOING BONE SCINTIGRAPHY

Vanessa Rabbogliatti¹, Donatella De Zani², Davide Zani², Maurizio Longo², Federica Di Cesare³, Francesco Moja¹ and Giuliano Ravasio¹

¹Università degli Studi di Milano, Dipartimento di Medicina Veterinaria, U.O. Anestesia

²Università degli Studi di Milano, Dipartimento di Medicina Veterinaria, U.O. Radiologia

³Università degli Studi di Milano, Dipartimento di Scienze Veterinarie per la Salute, la Produzione Animale e la Sicurezza Alimentare, Farmacologia e Tossicologia

In equine practice standing sedation has become increasingly popular. Many protocols have been investigated permitting to restrain patients avoiding general anaesthesia and the risk associated by increasing the threshold to all external stimuli and partially providing analgesia (Muir W. 1981; Dodman N. 1980). The target of standing sedation protocols during diagnostic imaging procedures is to reduce all the reaction of the patients to external stimuli, and to diminish physiological movements. No studies have been published establishing a standard protocol, and the decision of which protocol use is based on anaesthetist preferences and not on evidence-based medicine. The aim of the study is to evaluate two sedative protocols, focusing not only on the lack of response to stimuli and the reduction of physiological movements but also on the immobility of the patient that is mandatory for diagnostic imaging procedures. Thirteen horses referred to perform bone scintigraphy were enrolled in the study. Patients were randomly divided in two groups; both groups received same dose of acepromazine (0.003 mg/kg) and detomidine (10 µ/kg), MOR group received morphine (0.25 mg/kg), the BTF group received butorphanol (0.01 mg/kg). During the procedure to evaluate the horse sedation a simple descriptive scale (Taylor P. et al. 2014) was used; respiratory and hearth rate were recorded and if needed adjunctive boluses of detomidine were administrated. To evaluate the reduction of voluntary and involuntary movements the parameter chosen was the number of retake necessary to obtain an image with excellent diagnostic quality. This parameter was evaluated each time by the same radiologist that was unaware of which protocol was administered. Statistical analysis with T-Test was performed. Heart rate resulted not statistically different (MOR=27.1±2.4; BTF 26.8±3.7); respiratory rate in the MOR group resulted statistically diminished (MOR=9.9±2.3; BTF 13.4±3.1). The sedation score was statistically higher in the MOR group (MOR= 1.6±0.5; BTF 1.0±0.3)

and moreover in the total body examinations. The total dose of detomidine used in the two groups resulted non statistically different (MOR=23.7; BTF 23.2). The total number of retake did not result statistically significant even if the clinical difference was relevant (MOR=7.1; BTF=16.2), but the number of retake for each region investigated resulted statistically diminished in the MOR group (MOR=0.4±0.5; BTF 0.8±0.8). The results of this study demonstrate the supremacy of the MOR sedation protocol to perform bone scintigraphy in horses. Further studies are recommended to evaluate the administration of detomidine constant rate infusion to maintain a required sedation degree. The “Wooden Horse” could be applied in other diagnostic imaging techniques such as CT or MRI and also for various standing surgeries. Other parameters that could be considered are the duration of the exams and also the number of urinations of the patient during the exam to evaluate operators exposure to radiations.

1. Muir W. (1981) *May*;3(1):17-44
2. Dodman N. (1980) *Equine Vet J Oct*;12(4):166-70
3. Taylor P., et al. (2014) *Vet Anaesth Analg Jan*;41(1):14-24