The route of administration of xylazine impacts the prolongation of local anesthesia in cattle

K.M. Varner,[1] DVM, DACVAA; Maya Keefer,[1] BS; Margaret Mooring,[1] BS; Derek Foster,[2] DVM, PhD, DACVIM- FA; Sarah Klein,[1] DVM; JR Dodam,[3] DVM, PhD, DACVAA

[1]Molecular and Biomedical Sciences, NCSU, Raleigh, NC 27511
[2]Population Health and Pathobiology, NCSU, Raleigh, NC 27511
[3]Veterinary Medicine and Surgery, University of Missouri, Columbia, MO 65211

Introduction

Xylazine prolongs the duration of lidocaine when administered as a distal paravertebral block in cattle. This study investigates if the observed effect is due to the perineural administration of xylazine with lidocaine or if it could be achieved by systemic administration of xylazine and perineural lidocaine.

Materials and methods

Six healthy beef cross steers were enrolled in a blinded, randomized, cross-over study. Both groups received a distal paravertebral block using 6 mg/kg of lidocaine. Group SX received 0.02 mg/kg of xylazine in the cervical musculature and group LX received 0.02 mg/kg of xylazine co-administered with lidocaine and a saline injection was performed in the cervical musculature. The onset and duration of anesthesia were assessed through a series of needle pricks along the paralumbar fossa every minute for the first 15 minutes, and then every 15 minutes until the return of sensation. Sedation scores and heart rates were also collected. Parametric data was analyzed with a paired t-test. Nonparametric data was analyzed using a Wilcoxon signed rank test. A P-value < 0.05 was considered significant.

Results

Group LX had a significantly (P = 0.027) prolonged duration of action (186.6 +/- 58 minutes) compared to the SX (95 +/- 36.3 minutes). The LX group also had lower heart rates compared to SX (P = 0.083). There were no differences in sedation scores or onset of action.

Significance

The co-administration of xylazine and lidocaine in a distal paravertebral block significantly prolongs the duration of action of the local anesthetic compared to systemic administration of xylazine.

 © COPYRIGHT AMERICAN ASSOCIATION OF BOVINE PRACTITIONERS; OPEN ACCESS DISTRIBUTION.