DORSOLUMBAR EPIDURAL ANALGESIA VIA THE CAUDAL APPROACHES USING MULTIPLE PORT CATHETERS WITH KETAMINE OR LIDOCAINE OR IN COMBINATION IN CATTLE

Rafael DeRossi, Rodrigo A Bertoni, Rafael H Ruzzon, Alexandre B Verde-Selva
Veterinary Medicine, Federal University of Mato Grosso do Sul, Campo Grande, Brazil

Objective: To determine the analgesic and systemic effects of dorsolumbar epidural using non-styletted multiple-port catheters via the caudal approach to administer ketamine/lidocaine combination for analgesia of the flank in standing cattle.

Study design: Prospective randomized study.

Animal population: Six healthy male cattle weighing between 335 and 373 kg.

Methods: To investigate the effect of dorsolumbar epidural, the animals received 0.5 mg kg\(^{-1}\) of ketamine (K), 0.2 mg kg\(^{-1}\) of 2\% lidocaine (L) or 0.25 mg kg\(^{-1}\) ketamine plus 0.1 mg kg\(^{-1}\) lidocaine (KL). All the drugs were injected into the dorsolumbar epidural space via caudal approach through a non-styletted multiple-port catheter. Each animal received each treatment in random order. Evaluations of analgesia, sedation, ataxia, heart rate, arterial pressure, respiratory rate, skin temperature and rectal temperature were obtained at 0 (basal), 5, 10, 15, 30, 45, 60, 75, 90 after dorsolumbar epidural injection, and then at 30-minute intervals until loss of analgesia occurred. Skin temperature was measured at these intervals up to 60 minutes. All the animals received a standard noxious stimulus consisting of needle insertion into the skin and deep muscle or pressure from hemostat clamp; a 4-point scale was used to score the response. A second scale was used to score ataxia and a third for sedation.

Results: The duration of analgesia after dorsolumbar epidural ketamine/lidocaine administration was 140 ± 15 min (mean ± SD); i.e., more than twice that obtained with ketamine (50 ± 14 min) or lidocaine (80 ± 22 min) in the upper and lower flanks in cattle. After dorsolumbar epidural administration of ketamine, lidocaine, and ketamine/lidocaine, all cattle had mild or moderate ataxia. Treatment with ketamine alone caused mild sedation. The cardiovascular changes were within acceptable limits in these clinically healthy cattle.

Conclusions: Dorsolumbar epidural administration of ketamine/lidocaine to cattle resulted in longer duration of analgesia of the upper and lower flanks in standing conscious cattle, than the administration of ketamine or lidocaine alone.

Clinical relevance: Further research is necessary to determine whether this combination using this technique provides sufficient analgesia for flank surgery in standing cattle.