

Increasing ketamine dose enhances the anaesthetic properties of a ketamine-xylazine-midazolam Combinations in growing pigs.

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ABSTRACT

The influence of increasing the dosage of ketamine on anaesthesia induced by a combination of ketamine, xylazine and midazolam in pigs was determined by assessing the onset of action (OAN), duration of analgesia (DAN), anaesthesia time (ANT), and recovery time (RCT) in 10 growing pigs (Mean weight: 18.2 ± 1.65 kg) receiving either 10 mg/kg intramuscular (i.m) injection of 10 % ketamine, 2 mg/kg i.m injection of 2 % xylazine and 0.25 mg/kg i.m injection of 0.1 % midazolam (K10XM) or 20 mg/kg i.m injection of ketamine and 2 mg/kg i.m injection of xylazine and 0.25 mg/kg i.m injection of 0.1 % midazolam (K20XM). In addition, the heart rates (HR), respiratory rates (RR) and rectal temperatures (RT) were determined immediately after drug administration and at 10 minute intervals over a period of 60 minutes. Analgesia was assessed by the response of the pigs to artery forceps applied at the interdigital space. Recovery was determined as pigs' ability to stand without ataxia. Data were expressed as mean \pm SEM while anaesthetic indices were compared using Student's *t*-tests. A *P* value of 0.05 was accepted as significant in all cases. In this study, both the OAN and RCT were significantly (*P* < 0.05) shorter in K10XM (1.4 ± 0.2 min: 7.8 ± 2.2 min) than in K20XM (2.2 ± 0.2 ; 18.6 ± 1.4 min) respectively. Similarly, the duration of anaesthesia was significantly (*P* < 0.05) shorter in K10XM (55.4 ± 8.4 min) than in K20XM (92.0 ± 13.6 min). The pigs that received K20XM combination had analgesia of duration of 41.4 ± 12.6 min while those that received K10XM combination had no analgesia. However, the HR, RR, and RT were not significantly (*P* > 0.05) different between K10XM and K20XM. It was therefore concluded that the lower dose ketamine combination is better for the induction of anaesthesia, while the higher dose ketamine combination is preferable for surgery of short duration in pigs.

Keywords:

anaesthesia, pigs, ketamine, midazolam, swine, xylazine.