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Effects of Tramadol Premedication on Ketamine Anaesthesia in Young Pigs Undergoing Surgical Castration

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Abstract

The effect of anaesthesia with tramadol -ketamine combination on behavioural, physiological and plasma cortisol changes was evaluated following surgical castration in pigs. Ten Large-white breed of pigs (9.8± 1.6 kg) were used in the study. The pigs were randomly assigned into two groups. Pigs in group one (KT) were anaesthetized with 5% Ketamine (20mg/kg) and 5% tramadol (3mg/kg), while pigs in group two (KS) were anaesthetized with ketamine and normal saline. Following anaesthesia, linear infiltration with 2% lignocaine was done before castration. Pain-associated behavioural changes (phonation, restlessness, struggling during surgery, and attitude to operation site) were evaluated during and up to two hours after surgery. Heart rates (HR), respiratory rates (RR) and rectal temperatures (RT) were recorded after anaesthesia, at onset of castration (time t= 0), and at 15 minutes interval over a period of 60 minutes. Blood was also obtained before, during and about 10 minutes after castration for the determination of plasma cortisol concentration. Behavioural changes were compared using Mann Whitney's test, while physiological parameters and plasma cortisol were compared using analysis of variance (ANOVA). Pain associated behavioural changes was significantly ($P< 0.05$) higher in KT than KS anaesthetized pigs. There was no significant difference in HR, RR and RT between and within treatments. Similarly, plasma cortisol concentration did not differ significantly between treatments. Both KT and KS combination failed to provide satisfactory intraoperative analgesia in grower pigs undergoing surgical castration.

Keywords: Ketamine, Tramadol, Castration, Pigs, Cortisol