

Intratesticular alfaxalone and lidocaine for induction of anaesthesia during castration in piglets

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The objective was to determine whether intratesticular (IT) injection of an alfaxalone-lidocaine drug combination can induce anaesthesia and provide a rapid recovery in piglets undergoing surgical castration. Thirty piglets 2-10 days old were randomly divided into three alfaxalone + lidocaine dose groups: low [LD (4 mg/kg + 1.5 mg/kg)], medium [MD (6 mg/kg + 2 mg/kg)], and high [HD (8 mg/kg + 2.5 mg/kg)]. Induction times (i.e. time from IT injection to lateral recumbency) and recovery times (i.e. time from IT injection to standing recovery) were recorded, as well as movement and vocalization. Heart rate, oxygen saturation, respiratory rate, temperature, blood pressure, and end tidal carbon dioxide were recorded over time. Continuous data were analysed using a two-way ANOVA for repeated measures, induction and recovery times were compared using a one-way ANOVA, and categorical data were analysed using a Chi-squared test. Induction time did not differ between groups ($P=0.19$) with a mean time of 2:11 min, 3:17 min, and 3:44 min for HD, MD and LD, respectively. Recovery time was significantly faster in LD, compared to MD and HD ($P=0.005$) with a mean recovery time of 34:06 min, 31:37 min, 29:34 min for HD, MD, and LD, respectively. Incidence of movement and vocalization was decreased in MD and HD compared to the LD group, but did not show statistical significance. Physiologic data revealed no differences across the three groups. All parameters were stable over time except for heart rate, which decreased in all three groups ($P<0.05$) and respiratory rate, which increased in the LD and MD groups ($P<0.05$). The alfaxalone-lidocaine combinations investigated in this study induced a deep sedation in all piglets. Physiologic data remained within clinically acceptable ranges, suggesting that this drug combination works well for intratesticular injection prior to castration in neonatal piglets.