Comparison of caudal epidural anesthesia with lidocaine, lidocaine-verapamil and verapamil in buffalo calves

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Abstract

The objective of the present study was to evaluate epidural application of lidocaine, lidocaine-verapamil and verapamil in buffalo calves. Sixteen buffalo calves of both sexes with 5-7 months age and 60-90 kg weight were assigned in three groups and received one of the three treatments of lidocaine (0.2 mg/kg, n=6, LID), lidocaine-verapamil (0.2 mg/kg – 2.5 mg, n=6, LID-VER) and verapamil (2.5 mg, n=4, VER). Onset and duration of tail paralysis and perineal anti-nociception as well as changes in heart rate (HR), respiratory rate (RR) and rectal temperature (RT) were recorded. The onset of tail paralysis in LID was significantly shorter than that of LID-VER and VER ($p<0.05$). The onset of perineal anti-nociception was not significantly different among groups ($p>0.05$). The duration of tail paralysis and perineal anti-nociception were not significantly different among three groups ($p>0.05$). Full perineal anti-nociception was observed in 66% of calves in LID and LID-VER, whereas it was 25% in VER. HR in LID-VER and VER showed significant decreases at several time points in comparison with base ($p<0.05$). RR and RT, in comparison with base, were not significantly different ($p>0.05$). Based on the results of the current study, verapamil alone and in combination with lidocaine, has no advantages over lidocaine alone, after epidural application in buffalo calves. Furthermore, epidural application of verapamil decreased HR in buffalo calves.

Key words: Caudal epidural anesthesia, Lidocaine, Verapamil, Buffalo calves

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