

USE OF MEDETOMIDINE HYDROCHLORIDE AS SEDATIVE IN CATTLE CALVES

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ABSTRACT

This study was carried out to compare the sedative and analgesic effects produced by intravenous administration of three different doses of medetomidine ($8\mu\text{g kg}^{-1}$, $10\mu\text{g kg}^{-1}$ and $12\mu\text{g kg}^{-1}$) in six healthy cattle calves. Various observations were recorded up to 120 minutes. Onset of sedation was observed at 26.00 ± 0.36 , 21.00 ± 0.56 and 16.00 ± 0.43 seconds and total duration of sedation was 73.83 ± 0.69 , 96.70 ± 0.71 and 117.20 ± 0.60 minutes with $8\mu\text{g kg}^{-1}$, $10\mu\text{g kg}^{-1}$ and $12\mu\text{g kg}^{-1}$ body weight of medetomidine, respectively. Onset, duration and degree of sedation were different ($P<0.01$) with all three doses. Medetomidine at the dose rate of $8\mu\text{g kg}^{-1}$ produced moderate sedation in most animals, whereas $10\mu\text{g kg}^{-1}$ and $12\mu\text{g kg}^{-1}$ produced deep degree of sedation in all animals. Skin analgesia was produced in all animals with higher doses ($10\mu\text{g kg}^{-1}$ and $12\mu\text{g kg}^{-1}$) and in only two animals with lower doses ($8\mu\text{g kg}^{-1}$). Its onset was at 13.00 ± 2.753 , 6.25 ± 0.75 and 2.33 ± 0.21 minutes after administration of medetomidine, while mean total duration was 36.00 ± 7.59 , 55.66 ± 5.53 and 93.00 ± 0.57 minutes with $8\mu\text{g kg}^{-1}$, $10\mu\text{g kg}^{-1}$ and $12\mu\text{g kg}^{-1}$ of medetomidine, respectively which was significantly different ($P<0.01$) with all three doses. Medetomidine produced recumbency in all animals with higher doses ($10\mu\text{g kg}^{-1}$ and $12\mu\text{g kg}^{-1}$) and only in two animals with $8\mu\text{g kg}^{-1}$ body weight. Duration of recumbency was 48.50 ± 10.23 , 70.83 ± 2.42 and 100.00 ± 0.57 minutes and standing time was 51.00 ± 10.75 , 72.67 ± 2.98 and 102.00 ± 0.57 minutes after administration of $8\mu\text{g kg}^{-1}$, $10\mu\text{g kg}^{-1}$ and $12\mu\text{g kg}^{-1}$ medetomidine, respectively. It was concluded that medetomidine was a very potent sedative for cattle calves. Its dose rate must be carefully calculated based on actual body weight of the animal. At the dose rates studied, medetomidine may be used for sedation in animals requiring diagnostic or minor surgical procedures. It may also be used for pre-anesthetic medication.

Keywords: Medetomidine, sedation, analgesia, dose, cattle, calves.