

## A survey on the sedation effects of medetomidine, dexmedetomidine and their combination with acepromazine on cardiovascular function in dog

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### Abstract

Medetomidine and dexmedetomidine are the two new alpha-2 agonists available for use in veterinary anesthesia. These drugs are employed for sedation and premedication in small animals. The present study aimed to investigate the effects of medetomidine and dexmedetomidine alone and in combination with acepromazine on sedation, cardiovascular function and electrocardiography in dogs. Sixty dogs were randomly divided into four equal groups. The dogs received one of the treatments of medetomidine (10 µg/kg), dexmedetomidine (5 µg/kg), medetomidine (10 µg/kg) with acepromazine (0.05 mg/kg) and dexmedetomidine (5 µg/kg) with acepromazine (0.05 mg/kg) intramuscularly. Sedation levels, heart rate, non-invasive arterial blood pressure, respiratory rate, body temperature and electrocardiogram were carefully recorded in dogs up to 20 minutes after administration. Sedation scores were significantly higher in groups of medetomidine with acepromazine and dexmedetomidine with acepromazine, at 5 and 20 minutes in comparison to groups of medetomidine and dexmedetomidine alone. Comparison of sedation scores in each group showed a significant increase over time. The comparison of heart rate, within the groups, showed a significant decrease when compared with the baseline value. The respiratory rate showed a decreasing trend in all groups over time. The amplitude of the P wave decreased and the P-R and Q-T intervals increased during the evaluation period in all groups. Sinus arrhythmia, AV-block grade 1, and sinus arrest were seen after the administration of sedative drugs in all groups. In conclusion, it is inferred that the addition of acepromazine to medetomidine and dexmedetomidine increases the sedation level. Heart rate decreased in medetomidine and dexmedetomidine groups and the addition of acepromazine exacerbated this decrease. The combination of acepromazine with medetomidine and dexmedetomidine did not also reduce the occurrence of arrhythmias in the dog.

**Key words:** Acepromazine, Medetomidine, Dexmedetomidine, Cardiovascular function, Dog

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