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SAFETY OF USING THE PRODUCT ZENALPHA IN PREMEDICATION

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Abstract: The unfamiliarity with the use of new anesthetics can contribute to the occurrence of accidents and complications. Zenalpha is the first sedative that possesses a unique combination of substances, namely the alpha-2 agonist medetomidine and the alpha-2 antagonist vatinoxan. As a new product, there are uncertainties regarding the limits of its use; for example, it has not been evaluated for use in premedication. In this paper, we aimed to include it in premedication for general anesthesia using an inhalation agent in five canine patients who underwent dental procedures. We supposed that changes of cardio-respiratory parameters would occur, but in safe limits. Monitoring of the main functional physiological parameters highlighted the impact on them, with significant changes in blood pressure. It is difficult to assess to what extent these changes are produced by the product Zenalpha, therefore anesthetic combination used in this study should be limited to well selected cases.

• Introduction

The appearance of new products and unfamiliarity with their use may contribute to accidents and complications. In the present work we aimed to evaluate the safety of a protocol in dogs that included in premedication a product less often used in our country, namely Zenalpha.

• Material and method

A total of five patients in whom dental procedures were performed under general inhalation anesthesia were included in the present study. In these patients the product Zenaplha was administered in premedication intramuscularly, the anesthetic induction was done at

Results and discussions



Fig 1. HR changes, mean ± std



Fig 2. MAP dynamics, mean± std

awake patient

dental procedure

end of dental procedure

■ at 15 minutes

□ at one hour later

stable intubated patient, start of

about 5-10 minutes, when the sedative effect was clearly established, by intravenous administration of Propofol-Lipuro (10 mg/ml propofol, B. Braun Melsungen AG, Germany), followed by intubation of the animal and maintenance of general anesthesia by inhalation with Anesteran (liquid isoflurane for inhalation narcosis, Rompharm, Romania) in oxygen using a type F breathing circuit. Ketamidor microdoses (ketamine hydrochloride 100 mg/ml, Richter Pharma, Austria) were administered for analgesia during surgery and Meloxicam (15 mg/1.5 ml, Rompharm, Romania) for postoperative analgesia.

The following physiological parameters were monitored during dental procedures at 5 min intervals, then at 30 min intervals and one hour after their end: heart rate (HR), respiratory rate (RR), non-invasive systolic (SBP), mean (MAP) and diastolic (DBP) blood pressures, and intrarectal temperature (RT).

During the dental procedures SpO_2 and end-tidal CO_2 were continuously monitored, the appearance of the EKG tracing in the DII lead was followed and any changes were noted.

30 30,5 37 37,5 38 38,5 39 39,5 Celsius degree

Fig 4. RR evolution, mean ± std **Fig 5**. Body temperature changes, mean ± std

The Zenalpha-hydromorphone combination associated with induction with alfaxalone and maintenance with sevoflurane was associated with lower blood pressures and clinically relevant hypotension, hence the recommendation that offlabel use of the medetomidine-vatinoxan combination product (Zenalpha) before sevoflurane-based inhalational anesthesia should be used with caution and discretion because of a high incidence of hypotension [Davis et al., 2025]. We consider this recommendation to be valid also in the association of Zenalpha, propofol and isoflurane, especially since along with hypotensive episodes, EKG changes suggestive of possible myocardial ischemia have also been observed.

Conclusions

The use of Zenalpha in premedication with propofol for induction and isoflurane for maintenance has an impact on the cardiovascular system. Identification of the anesthetic primarily responsible for hemodynamic changes is very difficult if not impossible.

In the present study, a high incidence of arterial hypotension

was observed, being the reason why the use of this combination should be limited to well selected cases.