



**University of Zabol
Graduate School
Faculty of Veterinary Medicine
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**The Thesis Submitted for the Degree of DVM
(in the field of Veterinary Medicine)**

Evaluation of the effect of Medetomidine, Midazolam, Ketamine, Propofol and
Isoflurane on IOP, blood pressure and EKG in dog

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Abstract:

According to the results of various studies, prophylaxis and anesthesia drugs have different effects on the activity of the cardiovascular system as well as the internal pressure of the eye. For correct diagnosis, treatment and surgery with minimal complications, it is necessary to be aware of the effect of prophylaxis and anesthesia drugs on the cardiovascular system and internal pressure of the eye. In this study, the effects of prodrugs such as medetomidine and midazolam and anesthetics of ketamine, propofol and isoflurane on ECG, blood pressure and intraocular pressure were evaluated. In the present study, 10 native adult dogs were selected and examined clinically and physically, and after confirmation of health and use of antiparasitic drugs, entered the design. The study was cross-sectional and all ten dogs were divided into three drug groups. The mentioned parameters were measured before receiving the drug, 15 minutes after intramuscular injection of medetomidine, 20 minutes after midazolam injection and at 15, 30, 45 and 60 minutes after induction of anesthesia with the mentioned anesthetic drugs. After measuring and recording ECG, blood pressure and intraocular pressure and analyzing them, it was found that intramuscular injection of medetomidine reduces intraocular pressure ($P < 0.05$) and heart rate ($P < 0.01$) and does not cause a significant change in mean arterial blood pressure. Intramuscular injection of midazolam reduces intraocular pressure ($P < 0.01$) and does not cause significant changes in heart rate and mean arterial blood pressure. Induction of anesthesia after intramuscular injection of these two pro-anesthetic drugs with ketamine caused a significant increase in intraocular pressure ($P < 0.05$) and heart rate ($P < 0.01$) as well as a slight and non-significant increase in mean arterial Blood pressure becomes. Propofol leads to a significant increase in heart rate ($P < 0.01$) and a slight and non-significant increase in intraocular pressure and mean arterial blood pressure, and isoflurane causes a significant increase in intraocular pressure ($P < 0.05$) and heart rate ($P < 0.01$) and a slight and insignificant decrease in mean arterial blood pressure.

Keywords: Anesthesia, Dog, Intraocular pressure, Electrocardiograph, Blood pressure.