Summary of the DVM thesis No15001 Faculty of Veterinary Medicine, Urmia University.
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Author: Author: Maryam Mohammadzadeh
Title of thesis: Comparing the effects of ketamine and dexmedetomidine with midazolam and dexmedetomidine on intraocular pressure, tear production and pupil diameter in rabbits.

Summary:
The present study aimed to compare the effects of ketamine and dexmedetomidine with midazolam and dexmedetomidine on intraocular pressure, tear production, and pupil diameter in rabbits.
In this study, 14 healthy adult male rabbits were randomly divided into two equal groups: In the first group, ketamine (30 mg/kg) and dexmedetomidine (0/025 mg/kg) were administered, and in the second group, midazolam (2 mg/kg) and dexmedetomidine (0/1 mg/kg) were administered intramuscularly. Physiological parameters including intraocular pressure (IOP), pupil diameter (PD) and tear production (STT) were measured and recorded using Schiotz tonometer, caliper and Schirmer strip, respectively, before and 5, 15, 20 min after sedation. SPSS version 22 software was used to extract the results and evaluate the data statistically.
The results of this study showed that the use of the ketamine-dexmedetomidine combination, in contrast to the midazolam-dexmedetomidine combination, led to an increase in intraocular pressure. There was also a statistically significant decrease in tear production in both groups, however, this decrease was more pronounced in the second group. Regarding pupil diameter, although pupil diameter showed increasing (group one) and decreasing (group two) changes compared to the time before sedation, they were not statistically significant. In post-sedation assessments, the decrease in pupil diameter in rabbits in group two was significant compared to group one (p<0/01).
These results indicated that the selection of appropriate sedative drugs for rabbits could have significant effects on ocular parameters. In animals with eye problems, the selection of sedatives and anesthetics must be done carefully, because the increase and decrease of intraocular pressure (IOP) and tear production during eye surgery are very important.

Key words: Rabbit, Sedation, Intraocular pressure, Tear production, Pupil diameter