

## EVALUATION OF THE TEAR PRODUCTION IN DOG FOLLOWING GENERAL ANESTHESIA

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**INTRODUCTION:** The objective of this study was to evaluate the effect of premedication and general anesthesia on tear production in clinically normal dogs.

**MATERIAL AND METHODS:** Twenty dogs of various ages, breeds and genders were examined clinically and ophthalmologically. The dogs have no history or clinical signs of ophthalmic disease. All dogs received atropine sulfate (0.04 mg/kg) and acepromazine maleate (0.1 mg/kg) intramuscularly as a premedication. Ten minutes after premedication intravenous injection of ketamine hydrochloride (5.5 mg/kg) and diazepam (0.25 mg/kg) was added as a general anesthesia. During the surgery isoflurane was used as an inhalation anesthesia. Schirmer tear test 1 (STT 1) was measured bilaterally before and after premedication, one minute after intravenous anesthesia, during anesthesia and five minutes after the surgery.

**RESULTS:** There was a significant decrease in tear production ten minutes after the premedication from the mean base-line value of  $16.6 \pm 2.6$  mm/min to  $13.9 \pm 2.2$  mm/min. One minute after intravenous anesthesia tear production continued to decrease for an average  $2.6 \pm 2.8$  mm/min. During the anesthesia STT 1 decreased for a more  $4.3 \pm 5.6$  mm/min ( $P < 0.05$ ), gaining  $7.0 \pm 3.8$  mm/min. Five minutes after surgery the mean tear production was only  $2.8 \pm 2.5$  mm/min. Decrease of the tear production from the base-line value till the last measurement (after the surgery) was  $13.8 \pm 3.3$  mm/min ( $P < 0.001$ ).

**CONCLUSION:** These observations indicate that premedication (atropine sulfate and acepromazine maleate), general anesthesia (ketamine hydrochloride and diazepam) reduces tear production in clinically normal dogs. Sterile ocular lubricant or tear replacement should be used as a corneal protectant during the general anesthesia.