GENERAL ANAESTHESIA FOR CAESAREAN SECTION IN DOGS USING PROPOFOL WITH XYLAZINE PREMEDICATION

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Introduction

Anaesthesia is an essential prerequisite to any type of surgical manipulations. Several anaesthetic techniques have been used for caesarean section in bitches. Although good results in terms of anaesthesia were provided, the undesirable side effects of existing anaesthetics led to a continuing need for improving the quality of anaesthesia by the use of more effective and less toxic agents. Total intravenous anaesthesia was one such technique. The study is intended to evaluate the beneficial effects of xylazine and xylazine-ketamine premedication on propofol anaesthesia in bitches and in the puppies delivered, by caesarean section.

Materials and Methods

The anaesthetic study was conducted in six female dogs of different breeds subjected to caesarean section at the Veterinary College Hospitals at Mannuthy and Kokkalai. All the dogs were clinically examined. To all the dogs, glycopyrrolate (Pyrolate-Neon Labs, Maharastra) at the dose rate of 0.01 mg/kg bodyweight was administered intramuscularly, 15 minutes prior to the administration of premedication. Xylazine (Xylaxin, Indian Immunologicals, Andhra Pradesh) at the rate of 0.5mg/kg bodyweight was administered intra muscularly for premedication. Fifteen minutes later, propofol 1% emulsion (Profol, Clarislifesciences ltd, Hyderabad) was administered by intravenous bolus injection for the induction of general anaesthesia. Thereafter, 20 ml 1% propofol emulsion was mixed with 180 ml of normal saline solution and was administered intravenously at the rate of 6 drops / kg / min (0.4mg propofol / kg /min.) for maintenance of anaesthesia till the surgical manipulations were completed. Endotracheal intubation was carried out in all the dogs for maintaining the airway patency. The dogs were subjected to caesarean section.

Results and Conclusion

Following premedication with xylazine, clinical symptoms like winking of eyes, yawning and incoordination of movements with lowering of head were noticed. The other common symptoms noticed were vomiting, and licking during induction and urination during recovery. All the six dogs assumed sternal recumbency with head down posture. Salivation was scanty.

The average induction time was 2.23 ± 1.04 minutes and the duration of anaesthesia was 49.77 ± 1.01 minutes.

Degree of muscle relaxation was moderate to good.

Recovery time was 17.66 ± 1.81 minutes and the time required for surgical operation was 52.00 ± 1.02 minutes.

Rectal temperature, respiration rate, and heart rate decreased following the premedication and after the administration of propofol. Pulse rate decreased following the premedication and increased during propofol anaesthesia.

The conjunctival mucous membrane was congested before, after premedication till complete recovery and was pale roseate at 24 hours after administration of propofol.

The volume of packed red cell, haemoglobin concentration, and total leukocyte count decreased following the premedication and after the administration of propofol.

The neutrophil count increased after premedication with xylazine. The lymphocyte count decreased after premedication with xylazine. The variations in monocyte and eosinophil count were marginal. The basophil count was zero throughout the period of study.

The decrease in the serum sodium and serum potassium concentration after premedication and increase after the administration of propofol were very marginal and was within the normal limits.

The serum total protein content increased after premedication and decreased following the administration of propofol and reduced to normal level by 24 hours. There was a decrease in albumin/globulin ratio after premedication and a gradual increase after the administration of propofol. Out of the 38 puppies delivered, 29 were live and 9 were dead. All the live puppies delivered were active and started crying within two minutes. All the dogs recovered uneventfully and no complication was noticed.

From the study it is recommended that 1% propofol at the rate of 4mg/kg bodyweight as an intravenous bolus injection for induction of anaesthesia and at a rate of 0.4 mg/kg/min as an intravenous infusion for maintenance of anaesthesia with xylazine premedication at the rate of 0.5 mg/kg bodyweight intramuscularly is a safe anaesthetic regimen for caesarean section in dogs with live puppies.