

Success Story

Standardization of maintenance agent of general anaesthesia as constant Rate Infusion

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<https://doi.org/10.5281/zenodo.7013024>

Anesthesia and analgesia are interlinked and autonomic parameters like change in respiratory and cardiovascular responses are indicators of the depth of anesthesia or antinociception (Gruenewald and Ilies, 2013). The purpose of anesthesia is to produce a convenient, safe, effective analgesia, sedation, and reversible unconsciousness of the animals, so that surgical intervention may be conducted with minimum stress, discomfort, pain, and toxic side effects to the patients (Thurmon et al., 1996 and William et al., 2007). The objective of constant rate infusion (CRI) is to achieve a constant plasma concentration of drugs in the body. This state can be achieved by the administration of a constant rate of ketamine / propofol or ketofol. CRI prevents the sudden peaks and valleys associated with intermittent I/V boluses and I/M injection and also maintains a stable plane of anesthesia superiorly to boluses (Pablo, 2011). Therefore, the present study was designed to evaluate balance anesthesia along with maintenance for ovariectomy standardization of maintenance agent of general anaesthesia as constant rate infusion.

The study was conducted on 18 female dogs and these animals were randomly divided into three experimental groups, each group containing six animals. The groups were designated as Group I, Group II, and Group III on the basis of the induction and maintenance agent. The animals of different groups were administered the following drugs for induction and maintenance of anesthesia for elective ovariectomy. After preparation of the animal, blood was withdrawn at 0 min from the cephalic vein, and glycopyrrolate1 was given @ 0.01mg/kg b.wt intramuscularly at right lumbar epaxial muscles followed by inj. butorphanol2 @ 0.2 mg/kg b.wt and xylazine3 @ 1mg/kg b.wt were injected intramuscularly after 5 minutes at left lumbar epaxial muscles by using different syringes. After premedication animal was placed on the operation table and canulate with 20 gauges (according to need) intravenous catheter and attached with normal saline infusion. After 10 minutes of butorphanol, animals were induced (till effect) with propofol, and immediately just after induction animals were intubated and constant rate infusion of ketamine4 , propofol5 , and ketofol 1:1 started along with normal saline @ 10ml/kg/hr by micro infusion set and infusion of anesthesia was stopped at last skin suture.



Physiological parameters showed that the values of rectal temperature in all three groups showed a decrease at different intervals during the observation period in comparison of the baseline values. The values of respiratory rate in all three groups decreased at different intervals during an observation period in comparison to the baseline values. All three groups showed that respiratory rate value decreased significantly ($p < 0.05$) higher in group I and III, however it become non-significantly lower in group II during maintenance of anesthesia in comparison to respective base values. Cardiovascular parameters showed that the value of systolic arterial pressure increased significantly ($P < 0.05$) in group III in comparisons to respective base values. Value of mean arterial pressure increased significantly ($P < 0.05$) in groups I and III in comparisons to respective base values

Physiological and hemodynamic observation revealed that pre-medication with glycopyrrolate, butorphanol, and xylazine followed induction with propofol and maintenance with CRI propofol was better in comparison to maintenance with CRI ketamine and ketofol in the present study. For field condition this protocol is very suitable as lack more than one technical person. In this technique no need for administration of intermediate dose and increasing or decreasing the dose. This protocol popularized among field veterinarian to perform soft tissue surgery.



Clinical cases of soft tissue



Draping of surgical site



Maintenance of anesthesia with CRI



Monitoring of Vital function