Preclinical Research Center
Ben-Gurion University of the Negev

STANDARD OPERATING PROCEDURE 205

RABBIT ANESTHESIA

1. PURPOSE

This Standard Operating Procedure (SOP) describes methods for anesthetizing rabbits.

2. RESPONSIBILITY

Principal investigator (PI) and their research staff.

3. GENERAL CONSIDERATIONS

3.1. Perform a thorough physical exam and obtain an accurate weight.

3.2. Heat loss is rapid in anesthetized animals. Keep animals warm by providing a heat source until the animal has recovered from anesthesia.

3.3. Never leave an anesthetized animal unattended. Monitor anesthetized animals until they fully recover, are sternal, and move into the cage.

3.4. Do not fast rabbits; they do not vomit and are also coprophagic.

4. MATERIALS

4.1. Material or equipment to provide or conserve body heat (e.g., heating pack or pad)

4.2. Ophthalmic ointment (natural tears)

4.3. Gas anesthesia machine with adequate gas scavenging system or filter

4.4. Anesthesia mask

4.5. 2.5-3" endotracheal tube

4.6. Stethoscope with a hole in a plastic tube

4.7. Intra- vein catheter

4.8. Isoflurane

4.9. Ketamine (100mg/mL) *Controlled Drug

4.10. Xylazine (20mg/mL)

4.11. Acepromazine (10mg/mL)

4.12. Propofol (10mg/ml)

4.13. Sterile lubricant (e.g., water-soluble gel), 2% lidocaine gel

4.14. EMLA (lidocaine) cream

5. PROCEDURE

5.1. Apply ophthalmic ointment (natural tears) to both eyes to prevent dryness and damage to the cornea.

5.2. Inject Acepromazine 2mg/kg IM for tranquilization

5.3. Place an intravenous catheter (marginal ear vein)

5.3.1. To provide IV fluid therapy and venous access during anesthesia.

5.3.2. Applying EMLA cream over the venipuncture site at least 15 minutes before placing the catheter is recommended.

5.4. Sedation:

5.4.1 Used for short periods of restraint for non-painful procedures (e.g., blood collection) or before induction and gas anesthesia.

Drug	Dose	Route	Duration of Effect	Notes
Acepromazine	2 mg/kg	IM	30 minutes	Laryngeal reflexes are preserved.
Ketamine Xylazine	35 mg/kg 5 mg/kg	IM	30-60 minutes	First, inject acepromazine, xylazine, and ketamine into a different muscle.

5.5 Induction before inhalant anesthesia to facilitate intubation:

Drug	Dose	Route	Duration of Effect	Notes
Propofol	1-2 mg/kg	IV, slowly	Until discontinued	Administer to effect to facilitate intubation. It may cause respiratory depression.
Isoflurane	2% to 3%	Mask	Until discontinued	0.8 to 1.5 L/min. Initially, use a loose-fitting mask to minimize CO_2 re-inhalation. Then switch to a tight-fitting mask.

5.6. Intubation:

5.6.1. It is recommended to pre-oxygenate for 1 to 5 minutes with a tightly fitted mask with 100% oxygen to avoid apnea during induction and intubation.

5.6.2. placement of an endotracheal tube is recommended for delivery of isoflurane anesthesia.

5.6.3. Cuffed endotracheal tubes are preferred for animals weighing over 2kg as they reduce the possibility of aspiration of saliva or stomach contents.

5.6.4. Intubation:

5.6.4.1. Anesthetise with injectable anesthetics

5.6.4.2. Lubricate endotracheal tube with sterile lubricant.

5.6.4.3. With the animal in sternal recumbency, extend the neck and head upward to be straight.

5.6.4.4. Connect the tube to the stethoscope instead of the plate.

5.6.4.5. Insert the tube into the mouth until it reaches resistance.

5.6.4.6. Listen to the breath whistle (open of the larynx) and gently push the tube when the whistle sounds

5.6.4.7. Confirm proper placement by checking for the animal's breath as it exits the endotracheal tube during exhalation.

5.6.4.8. Secure the endotracheal tube by tying a piece of gauze around the tube and then behind the animal's head.

5.6.4.9. Inflate the cuff of the endotracheal tube.

5.6.4.10. Verify adequate ventilation of both lungs by auscultation.

5.7. Isoflurane anesthesia:

5.7.1. Induction:

5.7.1.1. Adjust the oxygen flowmeter to 0.8 to 1.5 L/min.

5.7.1.2. Adjust the isoflurane vaporizer to 2% to 4%.

5.7.2. Maintenance:

5.7.2.3. Adjust the flowmeter to 400 to 800mL/min.

5.7.2.4. Adjust the isoflurane vaporizer to 1.5 to 3%.

5.7.2.5. Monitor parameters (heart rate, oxygen saturation, respiration rate, temperature) every 5 minutes.

5.7.3. Recovery:

5.7.3.1. Turn off the isoflurane vaporizer but keep the animal on oxygen for 2 to 5 minutes or longer if oxygen saturation levels are low.

5.7.3.2. Monitor temperature at the end of surgery and warm the animal if necessary to speed up recovery.

5.7.3.3. Deflate the endotracheal cuff and stay close to the animal if the animal is intubated.

5.7.3.1. Remove the endotracheal tube as soon as the animal shows signs of impending arousal, i.e., when reflexes begin to return.

5.7.3.2. Remove the IV catheter before placing the animal back in its cage.

5.7.3.3. Monitor the animal's home cage to ensure it regains full consciousness.