



Curtin University Standard Operating Procedure

RABBIT ANAESTHESIA

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Aim/Purpose: To safely and humanely anaesthetise rabbits in the Building 300 Facility.

All employees have a duty of care (see Occupational Health and Safety) to ensure their own health and safety, and that of their fellow workers at all times.

ALL ANIMALS MUST BE HANDLED HUMANELY i.e. carefully and kindly.

Required Materials

- 1) Heating pad- required to reduce the risk of hypothermia during the procedure. Must be used during all procedures.
- 2) Ophthalmic ointment e.g. lacrilube, optichlor – protects the eyes during anaesthesia.
- 3) Gaseous anaesthetic machine with adequate gas scavenging system or filter
- 4) Isoflurane
- 5) Spare oxygen tank
- 6) Buprenorphine (0.3mg/ml) ** S8 drug
- 7) Injectable drugs if using -
 - a. Ketamine (100mg/mL) **S8 drug
 - b. Xylazine (20mg/mL)



- 8) Acepromazine (10mg/mL)
- 9) Domitor
- 10) Butorphanol ** S8 drug
- 11) Metoclopramide Injectable

Guidelines for Anaesthesia in Rabbits

General Comments:

- 1) Perform a thorough physical exam and obtain an accurate weight.
- 2) Withhold food (not water) for a short period of time (1–2 hours). They do not vomit, so the usual requirements for fasting are not required.
- 3) Rabbits can be anesthetized with either inhalant gas or injectable drugs. The use of inhalant gases is the preferred method of anaesthesia whenever possible.
- 4) Careful handling and restraint of rabbits is always necessary with both back support before and during anesthesia and monitored recovery after anesthesia. Make a “bunny burrito” by wrapping the rabbit in a towel when needed to facilitate IM injections that can startle the rabbit.
- 5) Quiet cage rest after administration of pre-medications for 10-15 minutes is ideal to allow for sedation to take effect.
- 6) If the procedure is to last > 30mins, fluid support either via intravenous fluids or subcutaneous fluids should be given.

Procedures:

Sedation:

- Used for short periods of restraint for non-painful procedures (e.g. blood collection).
- Dose: Buprenorphine 0.2 mg/kg, Acepromazine 1mg/kg.
- Both drugs can be mixed in the same syringe.
- Inject intramuscularly – best in anterior aspect of back leg. Avoid the back of the leg to avoid injecting into the sciatic nerve and paralysing the rabbit.
- Animal will be adequately sedated after 15 minutes.
- Duration of sedation is approximately 1 hour.



Injectable anaesthesia:

- Can be used alone for short, non-invasive procedures.
- Used for induction prior to use of Isoflurane anaesthesia for smooth and rapid induction, and less stressful induction, and to facilitate intubation.

1) Ketamine-Xylazine-Acepromazine anaesthesia

- Inject acepromazine and xylazine intramuscularly. Both drugs can be mixed in the same syringe. Dose of acepromazine: 0.75mg/kg. Dose of xylazine: 5mg/kg.
- Inject ketamine intramuscularly in a different muscle. Dose: 20-35mg/kg.
- Apply ophthalmic ointment (natural tears) to both eyes to prevent dryness and damage to the cornea.

2) Domitor / Butorphanol / Ketamine IM injectable anaesthesia.

- Dose 0.1ml /kg Domitor /0.1ml/kg Butorphanol / 0.1ml/kg Ketamine mixed in a syringe and given IM in the front muscle of the rear leg.
- Apply ophthalmic ointment as above
- Lasts 20-30mins for surgical anaesthesia but commonly needs to be maintained on gaseous anaesthesia.
- If possible, provide oxygen to support the rabbit whilst anaesthetised.

Gaseous Anaesthesia

Isoflurane anaesthesia:

- Induction (if injectable anaesthetics not previously administered):
 - Place the animal in the induction chamber, or can wrap the rabbit in a towel and use a face mask.
 - Adjust the oxygen flowmeter to 0.8 to 1.5 L/min.
 - Adjust the isoflurane vaporizer to 3% to 3%.
 - Watch the animal closely until the animal stops moving and settles down.
- Maintenance:
 - Use a tight-fitting mask connected to the Bain circuit or intubate the rabbit.
 - Adjust the flowmeter to 400 to 800mL/min.
 - Adjust the isoflurane vaporizer to 1.5 to 3%.
 - Apply ophthalmic ointment (natural tears) to both eyes to prevent dryness and damage to the cornea.
 - Constantly monitor the animal whilst asleep and ensure it is not too deep (may die) or too light (may start to wake up). Adjust the isoflurane level to what is required to maintain a good level.



Recovery:

- Turn off the isoflurane vaporizer but keep the animal on oxygen.
- Once the animal is breathing well and starting to move around, wrap tightly (but not too tightly) in a small towel.
- Transfer animal to their cage once it begins to move and allow to recover fully.

Post-operative Care

- Allow access to food immediately
- Weigh daily until pre-surgical weight is regained.
- If weight loss > 20% body weight, seek veterinary advice
- Provide food treats e.g. carrots, cabbage, Lucerne to encourage eating as soon as possible as rabbits are prone to gut stasis, especially post operatively, which can be life-threatening
- Depending on the reason for the anaesthetic, and the length of time, considering using metoclopramide injection to prevent gut stasis.

Local anaesthesia

Xylocaine or Bupivacaine can be injected intra-dermally at the surgical site to reduce post-operative pain.

Bupivacaine is a long acting local anaesthetic providing up to 8hrs of local analgesia. Xylocaine spray is used for preparation of ear prior to venepuncture.

References:

Australian code for the care and use of animals for scientific purposes (8th Edition 2013)

'Laboratory Animal Anaesthesia' Flecknell PA, 1996 Academic Press

St Vincent's Hospital AEC Clinical SOP 57 Anaesthesia and analgesia in rabbits 2013

McGill University Standard Operating Procedure # 114 Rabbit Anaesthesia