

NOTES ON SEDATION AND ANAESTHESIA OF DONKEYS

GENERAL POINTS

- Patience, a quiet voice and a calm demeanour are essential. An arm around the neck and a hand over the dorsal nose usually provides good restraint. A well-fitted head-collar is essential.
- Distraction of a donkey with the odd polo, biscuit or treat can be useful when trying to get an initial head collar placement or good handling posture.
- Beware that the lifting of a foreleg will not always prevent kicking; many donkeys are adept at standing on two legs and accurately directing hindlimb kicks.
- A golden rule of donkey handling **just keep companions together at all times**, irrespective of the species of the companion. Failure to appreciate the significance of these bonds can induce significant stress and a variable reaction to any sedative/anaesthetic agents administered. If the companion is causing risk of injury to personnel e.g during iv catheter placement then separating the donkeys so that they can still maintain eye and muzzle contact over a stable door can be useful.
- The standard local anaesthetic and regional nerve blocking techniques used in other areas of equine practice can be usefully employed in the donkey. **Doses of local anaesthetic may need to be scaled down** to reflect the smaller size of the donkey so that toxic doses are not administered.
- **Accurate identification of a donkey's weight** is essential before administering sedatives and anaesthetic agents. If a weighbridge is not available it is important to note that horse weight tapes are not accurate in the donkey, The Donkey Sanctuary have produced a weight estimator that is specific to the donkey. See the 'donkey weight estimator' factsheet.
- Further information on general donkey clinical care can be found in The Clinical Companion of the Donkey at www.thedonkeysanctuary.org.uk/for-professionals
- As few drugs are licensed for use in donkeys, discussion of off-label use including use of dosages that may not be listed on a data sheet with clients and owners must be considered.

Always be aware of the risk of hyperlipaemia in a stressed donkey. If there is any doubt of a donkey's health status after a full clinical examination has been performed then a blood sample should be taken and triglyceride levels checked, prior to continuing with the planned procedure, unless an emergency situation does not render this appropriate.

SEDATION

- Once restrained with a head-collar, intravenous sedation can be reliably achieved by jugular venepuncture. As in other equines, the dose of sedative agent used will depend on a number of factors including temperament, age, condition, health status, anticipated duration and potential pain level of the procedure.

- All of the commercially available alpha-2 agonists can be successfully used in the donkey using standard equine doses. (For mules increase the dose of sedation and anaesthetic drugs by $\frac{1}{3}$ to $\frac{1}{2}$ of standard equine dose). Romifidine, detomidine and xylazine are all commonly used at The Donkey Sanctuary; precise selection is according to vet personal preference and the procedure being undertaken.
- Typically the alpha-2 agonists are combined with an opioid, most commonly butorphanol but on occasion the use of buprenorphine or morphine has been employed where more painful procedures are anticipated.
- Sedation top-ups may need to be more frequent in the donkey than in horses and ponies due to the differing rate of metabolism.

GENERAL ANAESTHESIA

As with sedation, general anaesthetic agents and dosages used in the donkey are similar to those used in other equines, but be aware that **many drugs are metabolised more rapidly than in horses and so need to be given more frequently**. The use of an indwelling catheter is strongly recommended.

A typical anaesthetic protocol employed at the Donkey Sanctuary is as follows:

- PRE MED: ACP 0.03mg/kg bwt by IV or IM injection 30 minutes prior to sedation with alpha 2 agonist
- SEDATION: Xylazine 1.1mg/kg bwt IV or detomidine 0.02mg/kg bwt IV
- Add butorphanol at 0.02mg/kg bwt or buprenorphine 5-10µg/kg (5 minutes after using the alpha agonist and before using buprenorphine, to avoid excitement)
- INDUCTION: Ketamine 2.2-2.8mg/kg bwt IV, diazepam 0.1mg/kg bwt IV (only proceed to induction if the donkey is sufficiently sedated- the head should be below the withers and the body relaxed. If the donkey is not well sedated increase the dose of sedation before proceeding to induction)
- MAINTENANCE: Isoflurane/oxygen, triple drip* or ketamine/alpha 2 agonist top ups have all been used, depending on the situation.

*The triple drip recipe used for horses and ponies is not suitable for donkeys. See our factsheet with the triple drip recipe used at The Donkey Sanctuary.

- When using ketamine top ups, be aware that **boluses will need to be given every 10-15 minutes**, rather than every 15-20 minutes, as in horses.
- Typically a $\frac{1}{3}$ induction dose of ketamine and alpha-2 is given as a top up.
- **Endotracheal intubation of donkeys can prove extremely tricky** due to their shorter, more pointed epiglottis and caudally tilted laryngeal opening. The trachea is also narrower relative to other equine species.
- **The average 180kg donkey requires an endotracheal tube of 16mm internal diameter.** It is wise to have a range of 14-18mm tubes available.
- The auricular artery has been used for catheterization and direct measurement of arterial B.P. If this proves difficult the facial artery has also been used.
- Arterial blood pressure can provide a very reliable method of monitoring anaesthesia in donkeys.
- Although myositis appears to be less of a risk in donkeys undergoing general anaesthesia, appropriate padding of limbs is still strongly recommended.

- Donkeys typically have higher respiratory rates under anaesthesia than other equines and usually spontaneous ventilation is well maintained.
- Donkeys are usually far calmer in recovery than horses and rarely require sedation in the recovery period. Typically they will achieve sternal recumbency and only attempt standing when ready, assistance is rarely required, although occasionally a tail pull may be called for.

ANALGESIA

It is essential not to forget provision of analgesia in donkeys, it should be included in all sedation and anaesthesia protocols and should be continued into the post-operative period.

- Phenylbutazone 2.2mg/kg BID and flunixin 1.1mg/kg BID are commonly used at the Donkey Sanctuary.
- Carprofen 0.7 - 1.3mg/kg SID is also used, although usually for more chronic pain such as osteoarthritis. Paracetamol at 20mg/kg bwt BID has also been used for chronic pain or as part of a multimodal post-operative approach.
- The use of meloxicam is not currently advised in donkeys as it appears to be metabolised too quickly to have any lasting efficacy.
- Firocoxib has been used successfully in the USA but has not been tried at the Sanctuary so we do not yet have any data on suitable dosages.

Opioids including morphine, buprenorphine and fentanyl patches have all been used at the Sanctuary, using dosages extrapolated from equine formularies.

If you need further advice or information please do not hesitate to contact us on **01395 578222** or by email **vets@thedonkeysanctuary.org.uk**