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| **Drug** | **Indication/Purpose** | **Contraindications** | **Route of administration** | **Calculation for dose & toxic dose** | **Concentration** | WDT |
| Xylazine (active ingredient - xylazine hydrochloride. Other names - rompun) | Used as a sedative and for analgesia, and used as pre anesthetic/pre medication before administration of local/general anaesthetic. | * Cattle are very sensitive to xylazine * Contraindicated in animals who have been given epinephrine * Contraindicated in animals with active ventricular arrhythmias, hypotension, urinary tract obstructions, shock, and hepatic, cardiac and respiratory dysfunction * Should not be given to pregnant animals in their 3rd trimester - can cause uterine contraction * and lead to early delivery * do not use in patients with oesophageal obstruction, torsion of the stomach - drug appear to worsen effects of the obstruction | IM | 0.05 mg/kg  Kid: [(0.05 mg/kg X 8.4 kg)/20 mg/ml)] = 0.021 ml  Dose was extremely small so a solution was made up with saline  (0.05 mg/kg x 8.4 kg) = 0.42ml  reversal Tolazoline doses:  2x: [(0.1 X 8.4)/100] = 0.0084 ml  4x: [(0.2 X 8.4)/100] = 0.0168 ml | 2% | MEAT 4 days  Milk 24 hours |
| Ketamine | * Analgesia | * always use in conjunction with xylazine, atropine * can cause increased CSF pressure, should not be used in patients with high intraocular pressure or if there has been head trauma. * can increase heart rate and blood pressure and so should not be used in patients where an increase in heart rate, blood pressure and myocardial oxygen consumption can be risky (eg. shock or congestive heart failure). * should be carefully used in animals with preexisting seizure disorders * should not be used in procedures involving the pharynx, larynx or trachea. Ketamine | IM | * 5 mg/kg   [5mg/kg X 8.4 kg)/100 mg/ml] = 0.42 ml | 10% | Meat - 3 days, milk 48 hours |
| Ketamine stun | Xylazine + ketamine = addition of small dose of ketamine to provide chemical restraint |  | IM | Using previous calculations, mixed…  0.42ml + 0.42ml = 0.84ml |  |  |
| Lidocaine | a local anaesthetic used to provide a loss of sensation/analgesia. Can also be used intravenously to provide an  analgesic effect | - should not be used with epinephrine IV.  - do not use in patients with hypersensitivity to amide class local anesthetics  - do not give to patients with AV, SA or intraventricular heart block.  - take caution with administration to patients in shock or with respiratory depression, liver disease, congestive heart failure & hypovolemia. | IV | 1mg/kg  (1mg/kg x 8.4kg)/20mg/ml = 0.42 ml | 2% | Meat -1 day, milk - 24 hrs |

**Constant Rate Infusion**

This allows for a more stable method of analgesic delivery, it reduces the likelihood of breakthrough pain and allows for greater control over drug administration. There is also a reduction in dose related side effects and no repeated injections. A combination of xylazine, ketamine and lidocaine were mixed into a fluid bag.

(8.4 kg x 5ml/kg/hr x 60 drops/ml)/60min/hr x 60sec/min = 0.7 drops every 2 seconds

For concentration in fluid bag:

VsCs = VeCe

Vs x 20 = 10ml x 1mg/ml

Vs = 0.5ml

9.5ml saline + 0.5ml xylazine = stock solution

Ballpark figures were used in Lactated Ringer’s Solution

5ml xylazine

10ml Lidocaine

10ml ketamine