**Calculation - uses a sheep of 50 kg and would need to be modified for actual weights**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Drug** | **Concentration** | **Dose Rate** | **CALCULATIONS** | **Withdrawal** | **Indication for use** |
| 1. Penstrep  (antibiotic) | 200,000 IU/ml | 40,000 IU/kg | V= 50kg x 20,000 IU/kg) /200,000 IU/ml = 10 mls IM | 30 DAYS | Antibiotics  5mls  q3d x 2 |
| **2. Sedation**  Xylazine  Ketamine | 20 mg/ml  100mg/kg | 0.05mg/kg  0.5mg/kg | (X)V=(0.05x50)/20 = 0.13mls  (K)V=(0.5x50)/100= 0.25mls | 14 days meat  48 hrs milk | 1/10 the equine dose  +/- 45 min of anaesthesia |
| **6.** **Xylazine**  **(Anaesthetic)**  **CRI** | 20 mg/ml | 0.05 mg/kg/hr | ***M = DV & V = M***  ***IR C***  0.05 x 1000  5  = 10mg …10/20 = **0.5 mls** | 14 days meat  48 hrs milk | Continuous analgesia for the 2 hrs of surgery |
| 5. Ketamine  **Induction** | 100mg/ml | 5mg/kg | V = (5 x 50)/100 =  2.5 mls IV | 3 days meat  24 hrs milk | *Balanced anaesthesia* |
| 5. Ketamine  **CRI** | 100mg/ml | 5mg/kg/hr | ***M = DV & V = M***  ***IR C***  5 x 1000  5  = 1000mg ….1000/100 = **10mls** | 3 days meat  24 hrs milk | Continuous analgesia for the 2 hrs of surgery |
| 3. Flunixin  Tetanus antitoxin | 50mg/ml  300IU/ml | 2.2mg/kg | V = (2.2 x 50)/50 =  2.2 mls IV - Slow Iv admin - 1 ml/second  600IU (2mls) | Meat 4 days | preemptive analgesia & post-op for three days. |
| 5. Lidocaine  **(Anaesthetic - Induction)** | 20mg/ml | 1.0 mg/kg | V = (1.0 x 50)/20 =  2.5 mls IV | 1 day meat  24 hrs milk | Toxic dose 10 mg/kg |
| 6. Lidocaine  **CRI** | 20mg/ml | 1.0 mg/kg | ***M = DV & V = M***  ***IR C***  1 x 1000  5  = 200mg .200/20 = **10mls** | 1 day meat  24 hrs milk | Toxic dose 10 mg/kg  =25mls |
| **4. EPIDURAL**  Bupiv/Ket | (B) 5mg/ml  (K) 100mg/ml | (B) 0.25mg/kg  (K) 1.25mg/kg | ***(B)V = (0.25x50)/5 = 2.5ml***  ***(K)V = (1.25x50)/100 = 0.625ml*** | Bupiv– none | Toxic dose 2 mg/kg  =20mls |
| 7. Intra-op Fluids  0.9%Saline (use 1L bag) | Calculated of Drip Rate in drops per sec - (ml/min x drip factor)/60 = drops/sec  250 x 20 = 83 / 60 = 1.4 = 3 drops/2sec  60 | | | | |
| Tolazoline  (xylaxine reversal) | 100mg/ml | 4 x xylazine dose i.e.  0.1 mg/kg | V = (0.1x50)/100 = 0.5mls | None for food animals | Xylaxine reversal |
| Atropine | 0.54 mg/ml | 0.04 mg/kg | V = (0.04 mg/kg)(50 kg) / 0.54 mg/ml  V = 3.7 ml (= 2mg/50kg) | 14 days meat  3 days milk | Use if bradycardia < 30 bpm |
| Epinephrine | 1mg/ml  (1:1000) | 0.02  mg/kg | V = (0.02 mg/kg)(50 kg) / 1 mg/ml  V = 1 ml | No WDT | Anaphylaxic reactions |

**Ketamine + Xylazine for breakthrough = half sedation dose (0.13ml xylazine + ketamine 0.25ml) PRN**

**2**

**Drug (mg) = [Infusion rate of the drug (mg/kg/hour) ÷Fluid infusion rate (ml/kg/hour)] x diluent volume (ml)**

***M = DV & V = M***

***IR C***

Rate of Fluid delivery = 5 ml/kg/hr

Drop factor = 20 drops/ml