

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	$V = 28.4\text{kg} \times 40,000 \text{ IU/kg} / 200,000 \text{ IU/ml} = 5.68 \text{ mls IM}$	30 DAYS	Antibiotics 5mls q3d x 2
2. Sedation Xylazine Ketamine	20 mg/ml 100mg/kg	0.05mg/kg 0.5mg/kg	$(X)V = (0.05 \times 28.4) / 20 = 0.07 \text{ mls IM}$ $(K)V = (0.5 \times 28.4) / 100 = 0.14 \text{ mls IM}$	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	$M = \frac{DV}{IR} \quad \& \quad V = \frac{M}{C}$ $\frac{0.05 \times 1000}{5}$ $= 10 \text{mg} \dots 10/20 = \mathbf{0.5 \text{ mls}}$	14 days meat 48 hrs milk	Continuous analgesia for the 2 hrs of surgery
5. Ketamine Induction	100mg/ml	5mg/kg	$V = (5 \times 28.4) / 100 = 1.42 \text{ mls IV}$	3 days meat 24 hrs milk	Balanced anaesthesia
5. Ketamine CRI	100mg/ml	5mg/kg/hr	$M = \frac{DV}{IR} \quad \& \quad V = \frac{M}{C}$ $\frac{5 \times 1000}{5}$ $= 1000 \text{mg} \dots 1000/100 = \mathbf{10 \text{ mls}}$	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	$V = (2.2 \times 28.4) / 50 = 1.25 \text{ mls IV}$ - 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	$V = (1.0 \times 28.4) / 20 = 1.42 \text{ mls IV}$	1 day meat 24 hrs milk	Toxic dose 10 mg/kg
6. Lidocaine CRI	20mg/ml	1.0 mg/kg	$M = \frac{DV}{IR} \quad \& \quad V = \frac{M}{C}$ $\frac{1 \times 1000}{5}$ $= 200 \text{mg} \dots 200/20 = \mathbf{10 \text{ mls}}$	1 day meat 24 hrs milk	Toxic dose 10 mg/kg =14.2mls
4. EPIDURAL Bupiv/Ket	(B) 5mg/ml (K) 100mg/ml	(B) 0.25mg/kg (K) 1.25mg/kg	$(B)V = (0.25 \times 28.4) / 5 = 1.42 \text{ ml}$ $(K)V = (1.25 \times 28.4) / 100 = 0.355 \text{ ml}$	Bupiv- none	Toxic dose 2 mg/kg =11.36mls
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 $\frac{5 \text{ml/kg/hr} \times 28.4 \text{kg} \times 20 \text{drops/ml}}{60 \times 60} = 0.8 \text{ drops per second} = 4 \text{ drops every 5 seconds}$				
Tolazoline (xylazine reversal)	100mg/ml	4 x xylazine dose i.e. 0.1 mg/kg	$V = (0.1 \times 28.4) / 100 = 0.03 \text{ mls}$	None for food animals	Xylazine reversal
Atropine	0.54 mg/ml	0.04 mg/kg	$V = (0.04 \text{ mg/kg})(28.4 \text{ kg}) / 0.54 \text{ mg/ml}$ $V = 2.1 \text{ ml} (= 2 \text{mg}/50 \text{kg})$	14 days meat 3 days milk	Use if bradycardia < 30 bpm
Epinephrine	1mg/ml (1:1000)	0.02 mg/kg	$V = (0.02 \text{ mg/kg})(28.4 \text{ kg}) / 1 \text{ mg/ml}$ $V = 0.568 \text{ ml}$	No WDT	Anaphylactic reactions

Ketamine + Xylazine for breakthrough = half sedation dose (0.035ml xylazine + ketamine 0.7ml) PRN

**Drug (mg) = [Infusion rate of the drug
(mg/kg/hour) ÷ Fluid infusion rate
(ml/kg/hour)] x diluent volume (ml)**
 $M = \frac{DV}{IR}$ & $V = \frac{M}{C}$

Rate of Fluid delivery = 5 ml/kg/hr
Drop factor = 20 drops/ml