

Calculations for Ovine Exploratory Laparotomy.

Drug	Concentration	Dose Rate	CALCULATIONS	Withdrawal	Indication for use
Penstrep (antibiotic)	200,000 IU/ml	20,000 IU/kg	$V = 39\text{kg} \times 20,000 \text{ IU/kg} / 200,000 \text{ IU/ml} = 3.9 \text{ mls IM}$	30 DAYS	*Antibiotics 5mls q3d x 2
Xylazine (Sedative/ Anaesthetic) Induction	20 mg/ml	0.025 mg/kg	$V = (0.025 \times 39) / 20 = 0.049 \text{ mls IV}$ Make up to 2 mls with saline	14 days meat 48 hrs milk	1/10 the equine dose +/- 45 min of anaesthesia
Xylazine (Anaesthetic) CRI	20 mg/ml	0.4 mg/kg/hr OR 0.66 mcg/kg/min	$M = DWV$ 16.67R $\frac{0.66 \times 39 \times 1000}{16.67 \times 500} = 3.09\text{mg} \dots\dots 3.09/20 = 0.15 \approx 0.2 \text{ ml}$	14 days meat 48 hrs milk	Continuous analgesia for the 2 hrs of surgery
Ketamine (Anaesthetic - Induction)	100mg/ml	4mg/kg	$V = (4 \times 39) / 100 = 1.56\text{mls IV}$	3 days meat 24 hrs milk	<i>Balanced anaesthesia</i> with xylazine *Have 5 mls at hand
Ketamine (CRI)	100mg/ml	4mg/kg/hr OR 66mcg/kg/min	$M = DWV$ 16.67R $\frac{66 \times 39 \times 1000}{16.67 \times 500} = 308.8\text{mg} \dots\dots 308.8/100 = 3.088\text{ml}$	3 days meat 24 hrs milk	Continuous analgesia for the 2 hrs of surgery
Flunixin (analgesic)	50mg/ml	2mg/kg	$V = (2 \times 39) / 50 = 1.56 \text{ mls IV - Slow Iv admin - 1 ml/second}$	Meat 4 days	preemptive analgesia & post-op for three days.
Lidocaine (local anaesthetic) Proximal parav block	20mg/ml	5mg/kg = half toxic dose	$V = (5 \times 39) / 20 = 9.75\text{ml}$ (3ml lidocaine + 2 ml saline) X 3	1 day meat 24 hrs milk	Toxic dose 10 mg/kg
Lidocaine (Anaesthetic - Induction)	20mg/ml	0.5 mg/kg	$V = (0.5 \times 39) / 20 = 0.975 \text{ mls IV}$	1 day meat 24 hrs milk	Toxic dose 10 mg/kg
Lidocaine (CRI)	20mg/ml	10 mcg/kg/min	$M = DWV$ 16.67R $\frac{10 \times 39 \times 1000}{16.67 \times 500} = 46.79 \text{ mg} \dots\dots 46.79/20 = 2.34\text{ml}$	1 day meat 24 hrs milk	Toxic dose 10 mg/kg
Intra-op Fluids 0.9%Saline	Calculated of Drip Rate in drops per sec - $(\text{ml/min} \times \text{drip factor}) / 60 = \text{drops/sec}$ $\frac{390 \times 20}{60} = 130 / 60 = 2.17 = 2 \text{ drops/sec}$				
Tolazoline (xylazine reversal)	100mg/ml	2 x xylazine dose i.e. 0.1 mg/kg	$V = (0.1 \times 39) / 100 = 0.039\text{mls} \approx 0.04\text{ml}$ $(0.03 \times 39) / 100 = 0.0195\text{ml} \approx 0.02\text{ml}$	None for food animals	Xylazine reversal

Atropine	0.54 mg/ml	0.04 mg/kg	$V = (0.04 \text{ mg/kg})(39 \text{ kg}) / 0.54 \text{ mg/ml}$ $V = 2.89 \text{ ml}$	14 days meat 3 days milk	Use if bradycardia < 30 bpm
Epinephrine	1mg/ml (1:1000)	0.02 mg/kg	$V = (0.02 \text{ mg/kg})(39 \text{ kg}) / 1 \text{ mg/ml} = 0.78 \text{ ml}$	No WDT	Anaphylactic reactions

***Formula for CRI**

$$M = \frac{(D)(W)(V)}{(R)(16.67)}$$

M = number of mg of drug to add to delivery fluid
D = dosage of drug in mcg/kg/min
W = patient body weight in kg
V = volume in ml of delivery fluid
R = rate of delivery in ml/hr
16.67 = conversion factor

*Rate of Fluid delivery 10ml/kg/hr

*Drop factor = 20 drops/ml

*Sheep ID=11

*Weight= 39.0kg