**Pretend the severed Head we practiced ocular surgeries on is attached to an animal whose weight is 400kg**

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| **Drug** | **Active Ingredient** | **Uses** | **Contraindications** | **Adverse effects** | **WDT** | **Concentration and Dose** | **Calculations** |
| **Xylazine** | Xylazine | Alpha-2 adrenoceptor stimulant resulting in sedation, muscle relaxation and analgesia.  Short term sedation.  Prior to ketamine for general anesthesia. | Do not use in:  Animals with cardiac or respiratory disease; animals with renal or hepatic failure; animals with hypotension/hypovolemia; last trimester of pregnancy (except at parturition); cattle receiving ovum implants (the increased uterine tone caused by the xylazine may prevent implantation).  Do not give to ruminants that are debilitated, dehydrated, or with urinary tract obstruction.  Cattle are extremely sensitive to xylazine’s effects; be certain of dose and dosage form. | Sweating, Piloerection, Tremors, Ruminal tympany, Hypersalivation, Diuresis, Prolapse of penis, Regurgitation, hypothermia, diarrhea, bradycardia, premature parturition & ataxia. | Meat: 14 days  Milk: 48 hrs | Dose rate: 0.05 mg/kg  Concentration: 20mg/ml | V = (D x W)/C  V= (0.05 x 400)/20  = 1ml |
| **Ketamine** | 2-(2-chlorophenyl)-2-(methylamino)cyclohexan-1 | Used to achieve general anaesthesia during surgery | Use in patients with significant hypertension, heart failure, and arterial aneurysms could be dangerous. Should not be used alone because it doesn’t cause muscle relaxation. Don’t use in animals with seizures | Inability to move, rigid muscles; high body temperature; fast heartbeat; convulsions; coma and ‘near death’ experiences; death | Meat: 3 days  Milk: 48 hrs | Concentration: 100mg/ml  Dose:  2 mg/kg IV | V = (D x W)/C  V = (2 x 400)/100  = 8ml |
| **Lidocaine 2%** | Lidocaine Hydrochloride | Blocks conduction of nerve fibers resulting in muscle paralysis and loss of sensation. Also blocks conduction pathways in myocardial cells, which is usually seen as a toxic effect of regional anesthesia but can be useful in the treatment of ventricular tachycardia. A local anesthetic and a class 1B antiarrhythmic agent. Used for topical, infiltration, intravenous, regional, and conduction anesthesia. Extradural and spinal injection. Decreases the rate of ventricular firing, action potential duration, absolute refractory period and increases relative refractory period. | When used with epinephrine Epinephrine:  Intra-articular administration.  Epidural administration  Intradigital administration.  Intravenous administration.  In the treatment of ventricular arrhythmias.  Cardiac and hepatic insufficiency. | Convulsions followed by CNS depression with overdoses | Meat:  4 days  Milk: 72 hrs | Concentration: 20mg/ml  Dose: 1.0mg/kg | V = (D x W)/C  = 1 x 400/20  = 20ml  In the case of anesthetizing the eye (subconjunctival injection) no more than 1ml should be given |
| **Tolazine** | Tolazoline hydrochloride. | Sedative antagonist.  Alpha-adrenoceptor blocking drug  Reverses sedative effects of xylazine.  Xylazine is an alpha2-adrenoceptor agonist. Tolazoline blocks alpha2-adrenoreceptors and displaces xylazine from these sites. | In animals showing signs of stress.  In debilitated animals.  In animals with cardiac disease.  In animals with hypovolemia or shock | Gastrointestinal disturbances  Tachycardia.  Mild hypertension | Meat: 96 hours  Milk: 48 hrs | Concentration: 20mg/ml  Dose rate: 0.1mg/kg | V = (D x W)/C  V = (0.1 x 400)/20  = 2 ml |
| **Proparacaine** | Proparacaine Hydrochloride | Anaesthetize the cornea of eye for examination, minor surgeries, removal of foreign bodies, catheterization or suture removal involving the eye.  Dont affect the pupil size | Prolonged use may produce permanent corneal opacification with visual loss | Prolonged use may delay wound healing | None | Rapid onset: within 1min and last for 15-30 mins | - For tonometry, instill 1 drop to 2 drops immediately before measurement is made.  - For use as an aid in the treatment of otitis, instill 2 drops into the ear every 5 minutes for 3 doses.  - For minor surgery, instill 1 drop or more drops, as required. |
| **Combikel 40 L.A.** | Pen-strep (procaine benzylpenicillin, dihydrostreptomycin sulphate) | An antibiotic which is capable of combating gram positive and gram-negative bacteria | Do not use on animals with septicemia, shock, or other grave illnesses as absorption of the medication from the GI tract may be significantly delayed or diminished. | Hypersensitivity and CNS effects | Meat:  30 days  Milk:  10 days | Dose Rate: 40,000 IU/kg  Concentration: 200,000 IU/ml | V = (D x W)/C V= (40,000 x 400)/200,000  = 80 ml  Administered twice every 3 days. |
| **Banamine** | Flunixin meglumine | Cattle: acute respiratory disease, acute coliform mastitis with endotoxic shock, pain (downer cow), and calf diarrhoea. | Do not use it in cows with hypersensitivity reactions. The IM route is extra-label in cattle and should only be used when the IV route is not feasible for use. Longer withdrawal times would be required after IM use. Flunixin should not be used in an attempt to ambulate cattle to be shipped for slaughter. | Causes anaphylactic reactions, Gastrointestinal irritation, ulceration,  Plasma protein-losing enteropathy,  Vomiting. Skin rash can also occur | 12-48 hours for milk cows and 5-14 days for beef | Dosage: 2.2mg/kg    Concentration: 50mg/ml | V= (D x W)/C V= (2.2 x 400)/50  = 17.6ml |
| **Tetanus** | Tetanus antitoxin | It is recommended for use whenever a non-immunized animal, or one whose immune status is unknown, suffers a deep penetrating wound that has or may become contaminated with soil. Used especially in goats to neutralize tetanus toxins. | Do not use animals who have a history of hypersensitivity reactions. | Serum sickness  May cause anaphylactic shock | Meat:  21 days  Milk:  24 hours | Dose rate:  1-2 mg/kg  1500 units SC/IM for prevention | Prevention Dosage:  1,500 units SC/IM |
| **Povidone -iodine solution** | Povidone- Iodine (titratable iodine 1.0%) | A germicidal cleanser for preoperative and postoperative skin washing, and shampoo for bacterial and fungal skin infections in animals.  Helps prevent infection in cuts, scratches, abrasions, and burns. Non-staining to skin, hair, and natural fabrics. | When color is lost (reduced activity).  Do not use concurrently with other disinfectants, detergents or antiseptics.  Strong solutions are ineffective. | Overstrength solutions don't work and may be toxic locally and systemically.  Hypersensitivity may occur | None | Requires contact time of 2 minutes at least for any effect. Rapid rinsing or removal is therefore counterproductive. | None indicated |
| **Neomycin**  **STERILE OINTMENT** | Neomycin Sulfate | Antibiotic ointment eye drop  Use for treatment or adjunctive therapy to certain eye, ear, and skin conditions. Also, use as a superficial wound dressing for minor cuts, wounds, lacerations, and abrasions. | Prolonged administration of the drug may permit overgrowth of organisms that are not susceptible to neomycin. If new infections due to bacteria or fungi appear during therapy, appropriate measures should be taken.  Concurrently with other ototoxic and nephrotoxic drugs.  In animals with hepatic failure.  Epithelial herpes simplex keratitis, vaccinia, varicella and many other viral diseases of the cornea and conjunctiva. Mycobacterial infection of the eye. Fungal diseases of ocular structures. Hypersensitivity to a component of the medication. | Elevation of intraocular pressure with possible development of glaucoma  Infrequent optic nerve damage  Posterior sub capsular cataract formation  Delayed wound healing | None | Ophthalmic: Administer 3 times to 4 times/day | Not indicated |
| **Atropine** | Atropine Sulfate | Preanesthetic to prevent or reduce secretions of the respiratory tract.  Treat sinus bradycardia, sinoatrial arrest, and incomplete AV block. | Atropine is contraindicated in patients with narrow-angle glaucoma, synechiae (adhesions) between the iris and lens, hypersensitivity to anticholinergic drugs, tachycardias secondary to thyrotoxicosis or cardiac insufficiency, myocardial ischemia, unstable cardiac status during acute hemorrhage, GI obstructive disease, paralytic ileus, severe ulcerative colitis, obstructive uropathy, and myasthenia gravis | Adverse effects are usually due to overdose.  GI: dry mouth, dysphagia, constipation, vomiting, and thirst.  GU: urinary retention or hesitancy.  CNS: drowsiness, ataxia, seizures, respiratory depression, etc.  Ophthalmic: blurred vision, pupil dilation, cycloplegia, and photophobia.  Cardiovascular: sinus tachycardia (at higher doses), bradycardia (initially or at very low doses), hypertension, hypotension, arrhythmias (ectopic complexes), and circulatory failure. | Meat:  14 days | Concentration: 0.54mg/ml  Dose: 0.04mg/kg | V= (D x W)/C V= (0.04 x 400)/0.54  = 29.6 ml |
| **Epinephrine** |  | Treatment for anaphylactic reactions | Narrow-angle glaucoma, hypersensitivity to epinephrine, shock due to non-anaphylactoid causes, during general anesthesia with halogenated hydrocarbons, during labor (may delay the second stage), cardiac dilatation or coronary insufficiency | Anxiety, tremor, excitability, vomiting, hypertension (overdosage), arrhythmias, hyperuricemia, & lactic acidosis (prolonged use or overdosage) | None | Concentration: 1mg/ml  Dose: 0.02mg/kg | V= (D x W)/C V= (0.02 x 400)/1  = 8 ml |