**Intravenous Regional Anaesthesia (IVRA)**

**Pre-Procedure**

**Signalment**

Cow #126: a 2-2½ y.o. intact cow with a body condition score of 3.0/5 (Penn State scale) and an approximate weight of 450kg

Bright, alert and responsive (BAR)

Physical examination was generally satisfactory, with the exception of a healing wound on her left flank

TPR values were within normal range

Temperature: 39oC

Pulse rate: 44bpm

Respiratory rate: 40 breaths/min

**Use of drugs**

2% Lidocaine was the drug of choice for this procedure, administering 10mL to the region of the left distal forelimb of the Cephalic/ Dorsal Common Digital Vein. The distal hind limb can also be used where a physical restraint using Tom Fool’s knot or figure 8 knot can be used to faciltate the process easier. At the distal hindlimb, the Cranial Banch of Lateral Saphenous Vein can be used.



In the event of an emergency, drugs may need to be utilized to reverse the effects of any sedative/anaesthetic used. In this procedure, the following drugs were intended for use as emergency drugs:

* Atropine at 33.3mL

 $Volume=\frac{450 kg ×0.04 mg/kg}{0.54 mg/ml}$

 $Volume=33.33 ml$

* Epinephrine at 9mL

$$Volume=\frac{450 kg ×0.02 mg/kg}{1 mg/ml}$$

$$Volume=9 ml$$

* 10% Tolazoline at 0.12mL (0.24mL for mild cases and 0.48mL for severe cases). This would be prepared as an emergency drug if xylazine was used for chemical restraint.

$$Volume\_{1}× Conc.\_{1}=Volume\_{2}×Conc.\_{2}$$

$$0.6ml×20\frac{mg}{kg}=Volume\_{2} ×Conc.2$$

*12mlmg/kg= Volume2 x 100mg/kg*

*Volume2= 12mlmg/kg/ 100 mg/kg*

*Volume2= 0.12ml*

For mildly depressed animals: **2** times xylazin dose: 0.12 ml x 2= *0.24ml*

For severely depressed animals: **4** times xylazin dose: 0.12 ml x 4= *0.48ml*

**Equipment**

Halter for restraint

Cotton swabs soaked in 70% isopropyl alcohol

19-gauge 1” needle/22-gauge butterfly catheter

1- 10ml syringe

2% Lidcocaine

Atropine

Epinephrine

10% Tolazonine

Tourniquet of appropriate size and material (e.g. rubber tubing)

**Safety considerations:**

* Before attempting procedure, inspect for signs of sedation e.g. lowering of the head, increased salivation.
* Always be aware of cow’s hoof placement despite the duration of sedation/anaesthesia.
* Ensure that you are mindful of the needles being used in the event of sudden movements by the cow to prevent injuring self or cow.