UBC ACC SOP on Supplementation of Potassium in IV Fluids in Large Animals

Effective Date: December 2018

Why?
- IV fluid therapy promotes K^+ loss

- Sick animals have decreased intake of food and therefore intake of K^+

Important Points

- **Toxic Dose of Potassium is 0.5 mEq/kg/hr**

- Too much K^+ raises threshold potential of myocardium which slows heart rate and leads to death

- Dose will be affected by the fluid rate so prior to adding potassium to fluid bag, you must calculate what amount of potassium the animal will get

- Doses are based on measurement of serum potassium

Serum K^+ (mEq/L)	KCL (mEq) to add to 1 L fluid bag
< 2.0	80
2.1 - 2.5	60
2.6 - 3.0	40
3.1 - 3.5	28
3.5 - 4.0	20

Example

Pig weight = 20 kg
Serum K^+ = 3.5 mEq/L
Fluid Rate = 5 ml/kg/hour

1. Based on serum K+ you need to add 20 mEq of KCL to 1 L bag of LRS

2. Confirm K^+ dose is below toxic dose

Toxic dose for 20 kg pig = 0.5 x 20 = 10 mEq/hr

Fluid rate of 5 ml/kg/hr = 100 ml/hr

K^+ (mEq) pig will receive in 1 hour = 20 mEq/1000 ml = 'x'/100 ml
'x' = 2 mEq

3. Conclusion: 2 mEq/hr is below toxic dose (10 mEq/hr) and this will be fine.