HYPOKALEMIC POLYMYOPATHY IN A KITTEN - A CASE REPORT

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INTRODUCTION

In healthy animals, plasma potassium levels are maintained within narrow limits of 4-5 mmol/L by complex neuroendocrine /homeostatic mechanisms. Hypokalaemia can occur because of reduced potassium intake, translocation of potassium from the extracellular to the intracellular space, or an increased loss of potassium via the kidneys or the gastrointestinal tract. Acute or chronic vomiting and / or diarrhoea can lead to increased gastrointestinal loss of potassium. Small intestinal diarrhoea can result in significant faecal loss of potassium, particularly if malabsorption compromises resorption of the ion (Mardell and Sparkes, 2004).

The relative sodium and potassium concentrations are important in maintaining the correct electrical charge across the membranes of nerve and muscle cells. Potassium has a major role in acid-base balance, as it diffuses easily across cell membranes.

CASE HISTORY AND OBSERVATION

A three month old kitten was presented to the University Veterinary Hospital Kokkalai with the complaint of inability to walk and lowering of head. The animal was having diarrheoa for the past five days.

On examination, animal was having generalized muscular weakness and ventroflexion of neck (Fig. 1). Hypokalemic polymyopathy secondary to diarrheoa was suspected. Serum potassium level was estimated and was 3.4 mmol/L. The animal was given 40 ml ringer's lactate and 10 ml dextrose normal saline mixed with B complex vitamins as intravenous infusion. Prescribed Potassium chloride @500 mg per day orally and Amoxycillin clavulanate combination @12 mg/ kg body weight BID orally for 5 days with an advise to give tender coconut water orally. The animal became normal within 3 days.

DISCUSSION

Hypokalaemia is commonly encoun

Fig. 1 Ventroflexion of the neck in the kitten with hypokalemic poly myopathy. Serum potassium concentration was 3.4 mmol/L.

tered in feline patients. Signs typically include generalized skeletal muscular weakness, which can be profound. Affected cats classically present with a plantigrade stance on the hind limbs, and ventroflexion of the neck. Ventroflexion of the neck occurs as the cat lacks a nuchal ligament. Other signs include reluctance to move, poor exercise tolerance and muscle pain (Fox and Jones, 2003). Early potassium defficiency causes hyperpolarization of muscle fibre membranes, increasing their resting potential and thus reducing their excitability (i.e. a larger influx of sodium is required to depolarize the cells) and thus inducing muscle weakness. More chronic and severe hypokalaemia causes muscle fibre hypopolarization, leading to extreme muscle weakness and eventual rhabdomyolysis. This can be accompanied by, sometimes very profound, elevations of circulating Creatinine Kinase concentrations.

REFERENCES

Fox, S. M. and Jones B.R. 2003. *Clincal Medicine of the dog and cat.* Ed Schaer, M. Manson Publishing Ltd. UK.

Mardell, E. and Sparkes, A. 2004. *BSAVA manual of canine and feline endocrinology.* Ed Mooney, C. Tand Peterson M. E. Third Edition. BSAVA , UK.