
HYPERKALEMIA IN EXOTIC FELIDS ANESTHETIZED WITH AN ALPHA - 2 ADRENOCEPTOR AGONIST, KETAMINE, AND ISOFLURANE

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Abstract

Hyperkalemia is a poorly understood complication associated with general anesthesia in non-domestic felids.¹ In a multi-center retrospective study, eleven cases of hyperkalemia in six tigers (*Panthera tigris*), two cougars (*Puma concolor*), one cheetah (*Acinonyx jubatus*), one lion (*Panthera leo*), and one liger (*Panthera tigris-Panthera leo* hybrid) were evaluated. Anesthesia in all cats was induced with intramuscular ketamine and medetomidine (n=7) or dexmedetomidine (n=4), and was maintained with isoflurane. Mean \pm SD total anesthesia time was 256.7 ± 87.6 min, and mean time to first evidence of hyperkalemia was 186 ± 40.1 min. Mean dosage of dexmedetomidine was 15.0 ± 4.6 mcg/kg and medetomidine was 32.15 ± 11.15 mcg/kg. Mean potassium concentration at the time when hyperkalemia (≥ 5.5 mmol/L) was recognized was 6.5 ± 1.5 mmol/L, and mean blood glucose concentration at that time was 256.5 ± 115.4 mg/dL (n=6). Treatment of hyperkalemia consisted of atipamezole (n=4), insulin (n=4), dextrose (n=4), calcium gluconate (n=4), and/or bicarbonate (n=5). Four of the eleven cases arrested and three of those died due to their hyperkalemia. Alpha-2 adrenergic agonists are known to inhibit insulin secretion, and a decreased amount of circulating insulin can have an effect on both plasma glucose and potassium concentrations. A study at the authors' institution indicated a significant increase in plasma potassium, glucose, and aldosterone concentrations over time in eleven anesthetized exotic felids (Reilly, manuscript submitted). In anesthetized exotic felids, the authors' recommend to measure blood glucose and potassium every 30 minutes, and the treatment of hyperkalemia if present.

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LITERATURE CITED

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