



Low dose Intravenous Lipid Emulsion as a safe treatment for lipophilic intoxications in five cats



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Complete History and Signalment

The use of a low dose CRI of intravenous lipid emulsion (ILE) in 5 young cats presented with acute neurotoxicity by antiparasitic drugs is reported. Causes of intoxications witnessed by the owners were the following: dermal application of anti-flea drugs containing permethrin, registered for dogs (Frontline-Triact[®], Merial, n=3), overdose by oral ingestion of fipronil/eprinomectin/praziquantel (Broadline[®], Merial, n=1) and milbemycin (Milbemax[®], Novartis, n=1), respectively.

Complete Diagnostic Investigation

Clinical suspicion of acute neurotoxicity was based on the following symptoms: acute onset of generalized tremors in all cats and seizures (n=2). Laboratory minimum database results were within the reference intervals.

Therapy

Initial treatment included toxic decontamination, whenever possible, and control of neurologic signs. Sedation protocol included IV administration of diazepam (up to 1 mg/kg). In case of persisting clinical signs, cats were managed by a CRI of propofol (0.1-0.4 mg/kg/min) and a low dose of ILE (Intralipid 20%, Fresenius Kabi Srl) infusion: 1.5 mL/kg over 30 minutes, followed by 0.25 mL/kg/min for 3 minutes, then 0.025 mL/kg/min, up to a maximum dose of 12.5 mL/kg. Discontinuation of propofol and ILE infusions due to the resolution of the neurologic signs were achieved at 3 hours (n=1: milbemycin intoxication) and 6 hours (n=3: 2 permethrin, 1 fipronil/eprinomectin/praziquantel intoxications). Only 1 cat (n=1: permethrin intoxication) received the maximum dose of ILE and was weaned by propofol at 18 hours. Four out of 5 cats were discharged from the hospital within 48 hours; the last cat was sent home at 72 hours. No side effects were reported and clinical follow-up was normal at 1 week and 6-month in all cats.



Photo: Two cats with permethrin toxicosis presented to the Emergency of our Veterinary University Hospital

Discussion

ILE shows promise for management of lipophilic drug poisonings. However, major potential side effects reported for ILE infusion are: hypertriglyceridemia, pancreatitis, fat overload syndrome, hypertension and ARDS. We report the use of a low dose rate infusion of ILE as an adjunctive and safe treatment for the management of lipophilic intoxications in 5 cats. Present data need to be confirmed in a large randomized controlled clinical trial.