

## Alfaxalone Overdose

Alfaxalone is a synthetic steroid anesthetic used for induction and maintenance of anesthesia. Neurosteroid GABAA anesthetics reportedly have a wide therapeutic range and high therapeutic index (>30 mg/kg) in cats; however, the exact therapeutic index for alfaxalone use in cats has not yet been established. A 12-year-old cat was anesthetized for MRI using alfaxalone and maintained via continuous-rate infusion. The intended dose was 0.1 mg/kg/min; however, because of a calculation error, the cat received 1 mg/kg/min. When the cat's anesthetic plane was determined to be too deep (after >105 minutes), alfaxalone was discontinued and anesthesia maintained with isoflurane alone for the next 45 minutes. On extubation, the cat was transferred to an intensive care unit. Supplemental oxygen, IV crystalloid fluids, and rewarming care were provided. The cat had a prolonged recovery and was alert, active, and responsive ≈11 hours

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postextubation. The cat was discharged ≈24 hours postextubation.

### Commentary

Although there is no direct reversal agent for alfaxalone, this article reported the successful management of a cat that received an accidental alfaxalone overdose. The authors also suggested an additional treatment—IV lipid emulsion therapy—that could be considered for future cases.

The authors provided a thoughtful review of the management of this case and explored areas of weakness in hospital procedures. An overdose could occur at any private or academic veterinary hospital, particularly when caseload is heavy, new drugs or drug applications are introduced, or new personnel are integrated. Mechanisms to check drug calculations and delivery are of marked

importance in veterinary and human medical care. These techniques have traditionally included asking an experienced colleague to double-check calculations and setup of the delivery system. Newer methods to prevent medical error (eg, “smart” drug administration pumps with specific software that recognizes common drug doses and concentrations to verify the correct administration rate) are becoming available. Human error will never be entirely preventable, but constant review of hospital practices is necessary to keep medical errors to a minimum.—*Julie Walker, DVM, DACVECC*

### Source

Bayldon W, Carter JE, Beths T, et al. Accidental alfaxalone overdose in a mature cat undergoing anesthesia for magnetic resonance imaging. *J Feline Med Surg*. 2016. doi: 10.1177/2055116916647740.

