

Karla R. Smith, DVM, ASPCA Poison Control Center, Urbana, Illinois

Antidepressant Toxicosis



A 2-year-old, 33 lb (15 kg), neutered male standard schnauzer presented with ataxia and mild tremor activity.

History. The owner came home from work to find the dog symptomatic and a chewed bottle of 20 mg fluoxetine (Prozac) in the dog's bed. The owner estimates 20 pills may have been ingested.

Physical Examination. The dog is agitated with mild ataxia and tremors. He is also slightly hyperthermic with a body temperature of 103.5°F, and tachycardic with a heart rate of 180 b/m.

Fluoxetine and the related drugs sertraline (Zoloft), paroxetine (Paxil), and fluvoxamine (Luvox) are known by the collective name of selective serotonin reuptake inhibitors (SSRIs). They are highly selective inhibitors of serotonin reuptake by the presynaptic neuron, causing a net increase of serotonin in the central nervous system.

These drugs are commonly used in human medicine to treat depression, panic disorders, and obsessive compulsive disorders. In veterinary medicine, they may be used to treat aggression and fear/anxiety disorders.

The SSRIs share many of the same kinetic properties. They are all well absorbed orally, with liver metabolism, high protein binding, and excretion of the metabolites in the urine. The elimination half-life of fluoxetine has large individual variation and can range from 1 to 4 days. The other drugs have half-lives that range from 16 to 26 hours. Fluoxetine and paroxetine are excreted into breast milk in people; sertraline and fluvoxamine may also be excreted in this way, although hard evidence is not available.

continues

ASK YOURSELF ...

What would be an appropriate first therapeutic step?

- A. Induce emesis.
- B. Administer activated charcoal.
- C. Administer diazepam to control agitation and tremors.
- D. Administer cyproheptadine to control agitation and tremors.
- E. Either C or D.

DISCUSSION

Correct Answer: E Administer cyproheptadine or diazepam to control agitation and tremors.

Clinical Signs of Antidepressant Toxicosis.

Common signs include depression or agitation, ataxia, tremors, mydriasis, arrhythmias (tachycardia with fluoxetine), hyperthermia, vocalization, and seizure activity.

Differential Diagnosis. Agents with similar effects include tryptophan, 5-hydroxytryptophan, tricyclic antidepressants, amphetamines, the herb St. John's Wort, and pseudoephedrine.

Treatment. Decontamination via emesis is recommended only in asymptomatic animals and would likely be effective only within the first 2 hours following a witnessed exposure. Activated charcoal is very effective in absorbing SSRIs and can be given to symptomatic animals if precautions are taken to protect the airway. Cyproheptadine is a serotonin antagonist and is often very effective in controlling the stimulatory clinical signs. It can be given orally or rectally at a dose of 1.1 mg/kg in dogs. Diazepam or phenobarbital can also be given if cyproheptadine is not effective or not available. While diuresis does not enhance excretion due to the extensive protein binding of these drugs, IV fluids will help support blood pressure and maintain renal function. Tachycardia, generally considered to be any heart rate over 180 b/m, can be controlled with propranolol at a dose of 0.04 to 0.06 mg/kg given slowly IV.

Treatment Endpoint & Prognosis. Signs generally resolve within 48 hours. The prognosis with appropriate care is generally good.



at a glance

Decontamination

- Induce emesis using apomorphine or hydrogen peroxide, if toxicant ingested within 2 hours

Symptomatic care

- Administer activated charcoal if possible
- Monitor for central nervous system stimulation
- Treat agitation or tremors with cyproheptadine at 1.1 mg/kg, diazepam at 0.25 to 0.5 mg/kg, or phenobarbital at 2.0 to 5.0 mg/kg
- Monitor heart rate and treat tachycardia with propranolol at 0.04 to 0.06 mg/kg slow IV
- Support renal function with fluid therapy

Case Presentation Follow-up. In this case, the dog was initially given 1.1 mg/kg of cyproheptadine rectally and a dose of diazepam (0.25 mg/kg). The agitation and tremors resolved, allowing a dose of activated charcoal to be administered. The dog was hospitalized and an IV catheter was placed; the dog was given a balanced crystalloid solution at a rate of 30 ml/hr. At 2 hours after treatment, the dog was quiet, his body temperature had normalized at 102.0°F, and his heart rate was 110 b/m. Approximately 6 hours after admission to the veterinary hospital, the dog began to have mild tremor activity. A second dose of cyproheptadine was given and the tremors resolved. The dog was monitored for a total of 24 hours and was asymptomatic at discharge. ■

See Aids & Resources, back page, for suggested reading.

TAKE-HOME MESSAGES

- Activated charcoal is effective in absorbing SSRIs and can be given to symptomatic animals if precautions are taken to protect the airway.
- Prognosis with appropriate care is good.