

Adderall® (Amphetamine-Dextroamphetamine) Toxicity.

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The American Psychiatric Association estimates that 3-7% of US school-aged children exhibit attention-deficit/hyperactivity disorder (ADHD). Adderall® (amphetamine dextroamphetamine) and a variety of brand names and generic versions of this combination are available by prescription to treat ADHD and narcolepsy. Both immediate and sustained release products are used as are single agent amphetamine medication. Knowing the exact agent ingested can provide information of dose labeled and length of clinical effects. These drugs are used off label by college students for memory enhancement, test taking ability, and for study marathons. These agents are DEA Schedule II controlled substances with high potential for abuse. For humans with ADHD or narcolepsy, standard recommended dosage is 5-60mg daily. Amphetamine and its analogues stimulate the release of norepinephrine affecting both α - and β -adrenergic receptor sites. α -Adrenergic stimulation causes vasoconstriction and an increase in total peripheral resistance. β -Adrenergic receptor stimulation leads to an increase in heart rate, stroke volume, and skeletal muscle blood flow. Clinical signs of Adderall® overdose in humans and dogs include hyperactivity, hyperthermia, tachycardia, tachypnea, mydriasis, tremors, and seizures. In addition, Adderall intoxication in dogs has been reported to cause hyperthermia, hypoglycemia, hypersegmentation of neutrophils, and mild thrombocytopenia. Diagnosis can be confirmed by detecting amphetamine in stomach contents or vomitus, or by positive results obtained in urine tests for illicit drugs. Treatment is directed at controlling life-threatening central nervous system and cardiovascular signs. Seizures can be controlled with benzodiazepines, phenothiazines, pentobarbital, and propofol. Cardiac tachyarrhythmias can be managed with a β -blocker such as propranolol. Intravenous fluids counter the hyperthermia, assist in maintenance of renal function, and help promote the elimination of amphetamine and its analogues. Prognosis after poisoning with Adderall® depends upon the severity and duration of clinical signs at presentation. Differential diagnoses that should be considered in cases of suspected amphetamine overdose are any other agents that can cause central nervous system stimulation, tremors, and seizures. This article discusses our present understanding of Adderall® intoxication and examines 3 dogs presented to our practice after ingestion of large amounts of the drug.