

Clonidine Overdoses

Clonidine (Catapres®) is an alpha-2 adrenergic agonist that is approved for the management of hypertension. Off-label uses include heroin or nicotine withdrawal, ethanol dependence, prophylaxis of migraines, impulse control disorder, and attention-deficit hyperactivity disorder (ADHD). Clonidine stimulates alpha₂-adrenoceptors in the brain stem which results in reduced sympathetic outflow from the CNS. The result is a decrease in peripheral resistance, renal vascular resistance, heart rate, and blood pressure.

Clonidine is rapidly absorbed through the oral route, with 75-90% absorbed within 30 minutes. Antihypertensive effects are seen within 30-60 minutes of oral administration. The transdermal formulation yields therapeutic plasma concentrations within 2-3 days of application. The absorption when applied to the skin of infants and children is unknown. Half-life is approximately 7.5-10.8 hours, with a longer half life of 16-40 hours in the presence of renal dysfunction. Approximately 50% of oral drug is metabolized in the liver.

Overdoses occur as a result of unintentional oral ingestions by children, therapeutic errors, and intentional overdoses in adolescents and adults. Transdermal patches are a danger to children as accidental application to skin or chewing the patch can cause serious toxicity. Even discarded clonidine patches contain significant amounts of drug. As little as one 0.1 mg tablet has caused signs and symptoms of toxicity in children. Toxic effects usually occur within 30 minutes to 4 hours of exposure and resolve within 24-72 hours. Tachycardia and hypertension may be present early on and progress to bradycardia and hypotension. Other clinical effects include lethargy, coma, seizures (rare), hypotonia and hyporeflexia, miosis, respiratory depression and apnea, and hypothermia. Cardiac dysrhythmias such as AV block may occur.

Following an overdose, activated charcoal may be administered if the patient is able to protect the airway. Patients may require respiratory and blood pressure support. Bradycardia can be treated with atropine. Naloxone has been used successfully to reverse clonidine-induced respiratory depression, hypotension, and coma, but results are inconsistent.

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DID YOU KNOW THAT... there were 80,426 exposures involving cardiovascular drugs reported to U.S. poison centers in 2006?

Children under the age of six accounted for 22,868 of those cases. Although most of the exposures in toddlers were to beta blockers, ACE inhibitors and antihyperlipidemics, there were 1,777 cases of children less than six years old who ingested clonidine. Call the Specialists at the Maryland Poison Center for assistance in the assessment and management of overdoses with cardiovascular drugs.



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If you do not wish to receive faxes or emails from the Maryland Poison Center, call 410.706.7604 or circle your fax number and fax this back to 410.706.7184. Supported by Maryland Department of Health and Mental Hygiene

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