



دانشگاه علوم پزشکی و خدمات بهداشتی درمانی ایران

بیمارستان فیروزآبادی

بخش مراقبت‌های دارویی

Antidotes

لیست مربوط به پادزهرها

POISON

ANTIDOTE

DOSE*

COMMENTS

Acetaminophen	N-acetylcysteine	140 mg/kg initial oral dose, followed by 70 mg/kg every 4 hr × 17 doses or intravenously as 150 mg/kg × 15 minutes then 50 mg/kg × 4 hr then 100 mg/kg × 16 hr	Most effective within 16–24 hr; may be useful after chronic intoxication
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Atropine, anticholinergics	Physostigmine	Initial dose 0.5–2 mg (IV); children, 0.02 mg/kg	Can produce convulsions, bradycardia
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Benzodiazepines	Flumazenil	0.2 mg (2 mL) (IV) over 15 sec; repeat 0.2 mg (IV) as necessary; initial dose not to exceed 1 mg	Limited indications; recommended only for reversal of pure benzodiazepine sedation
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β blockers	Glucagon	Adult: 5–10 mg (IV) initially Child: 50–150 ug/kg (IV) initially Continuous infusion as needed	Stimulates cAMP synthesis, increasing myocardial contractility
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Calcium channel blockers	Calcium chloride 10%	1 g (10 mL) (IV) over 5 min as initial dose; repeat as necessary in critical patients; doses up to 10 g may be necessary to restore blood pressure	Avoid extravasation; tissue destructive
	Insulin/glucose	0.5–1.0 U/kg initially then 0.5–1.0 U/kg/hr as needed to maintain systolic blood pressure	Monitor serum potassium and glucose

Carbon monoxide	Oxygen	1–3 atmospheres	Hyperbaric oxygen may be indicated
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Cyanide	Amyl nitrite, then sodium thiosulfate	Administer pearls every 2 min Adult: 10 mL of 3% solution over 3 min (IV) Child: 0.33 mL (10 mg of 3% solution)/kg over 10 minutes
		Adult: 25% solution, 50 mL (IV) over 10 minutes

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<p>Digitalis</p>	<p>Digoxin antibody fragments</p>	<p>Child: 25% solution, 1.65 mL/kg Varies by patient weight, serum digoxin concentration, and/or dose ingested</p>	
<p>Hydrofluoric acid</p>	<p>Calcium</p>	<p>Topical exposure: Apply calcium gluconate gel; if pain is not relieved, administer 10% calcium gluconate 10 mL in 40 mL D₅W via IV (Bier block) infusion; if pain is not relieved, administer calcium gluconate by intra-arterial infusion over 4 hr</p>	<p>Monitor for hypocalcemia; treat electrolyte disturbances aggressively</p>
<p>Iron</p>	<p>Deferoxamine mesylate</p>	<p>Ingestion: 10% calcium gluconate (IV) Initial dose: 40–90 mg/kg (IV or IM), not to exceed 1 g; Infusion: 15 mg/kg hr (IV)</p>	<p>Higher infusion doses may be needed in severe overdose to achieve chelant excess; monitor and treat hypotension</p>
<p>Metals</p>			
<p>Mercury</p>	<p>British antilewisite (BAL),</p>	<p>4-6 mg/kg IM, every 4–8 hr</p>	<p>Contraindicated if patient has a</p>
<p>Arsenic</p>	<p>also known as</p>		<p>peanut allergy or G6PD deficiency</p>
<p>Gold</p>	<p>dimercaprol</p>		
<p>Lead</p>	<p>DMSA (succimer), CaNa₂ EDTA</p>	<p>10 mg/kg/dose, bid × 28 days 35–50 mg/kg/day (maximum 1.0–1.5g), bid or as a continuous infusion</p>	<p>Monitor liver function tests, add BAL if lead level > 70 µg/dL in children, > 100 µg/dL in adults</p>
<p>Methanol</p>	<p>Ethyl alcohol</p>	<p>500 mg/kg of 10% ethanol, then continuous infusion of 100 mg/kg/hr</p>	<p>Watch for hypoglycemia, hypothermia, and lethargy in children; solution is hyperosmolar, requiring central venous catheter in children; maintain serum ethanol concentration at 100 mg/dL</p>
	<p>Fomepizole</p>	<p>15 mg/kg loading dose, 10 mg/kg every 12 hr IV</p>	<p>Significantly safer than ethanol</p>
<p>Nitrites (and other methemoglobin formers)</p>	<p>Methylene blue</p>	<p>1–2 mg/kg of 1% solution (IV) over 5 min</p>	<p>Can produce hemolysis in high dose; give no more than 7 mg/kg/day in adults, 4 mg/kg/day in children; severe or resistant cases may require exchange transfusion</p>

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Opiates and opioids	Naloxone	Adults: 0.4–2.0 mg (IV or IM) Child: 0.01–0.1 mg/kg (IV or IM)	Larger doses may be necessary after severe overdose or overdose of
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	Nalmefene	Adult: 1 mg (IV) Child: 0.25 ug/kg (IV)	synthetic agent, e.g., propoxyphene
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Organophosphates, nerve agents Carbamates (severe exposure)	Atropine	Adult: 0.5–2 mg IV Child: 0.05 mg/kg Child: 0.05 mg/kg	Enormous doses of atropine may be needed in severe cases
	Pralidoxime (2-PAM)	Adult: 1 g (IV) then 500–1000 mg/hr as needed Child 15–40 mg/kg then 15–40 mg/kg/hr	Must be added to atropine if nicotinic or central symptoms are present

Tricyclic antidepressants	Sodium bicarbonate	Sodium bicarbonate 1–2 ampules (IV), bolus or infusion	Administer if QRS interval is ≥ 100 msec; maintain serum pH at 7.45–7.55; avoid severe alkalosis
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cAMP, cyclic adenosine monophosphate; DMSA, dimercaptosuccinic acid; EDTA, ethylenediaminetetraacetic acid; G6PD, glucose-6-phosphate deficiency; IM, intramuscularly; IV, intravenously.

*Dosage listed may require modification or adjunctive therapy according to specific clinical conditions; see each specific chapter for details.

Reference:

- **Haddad and Winchester's Clinical Management of Poisoning and Drug Overdose**

BOX 2A-1

CLINICAL CONDITIONS AND EXAMPLE AGENTS IN THE POISONED PATIENT THAT MAY NECESSITATE ENDOTRACHEAL INTUBATION

Corrosive ingestion (sodium hydroxide, sulfuric acid)

Corrosive inhalation (ammonia, chlorine)

Envenomation (hymenoptera, crotalid)

Anaphylaxis (hymenoptera)

Pulmonary edema (opioids, chemical weapons [e.g., choking agents])

Bronchorrhea (organophosphates or nerve agents)

Severe central nervous system (CNS) depression (ethanol, opioids, barbiturates)

Cerebrovascular accident (cocaine)

Seizures (isoniazid, theophylline)

Aspiration (hydrocarbons)

Hypercarbia (CNS depressants, nerve agents, botulism)