

# Parenteral Drugs for Treatment of Hypertensive Emergencies

Drug	Dose	Onset of Action	Duration of Action	Adverse Effects*	Special Indications
<b>Vasodilators</b> Sodium nitroprusside	0.25–10 µg/kg/min as IV infusion†	Immediate	1–2 min	Nausea, vomiting, muscle twitching, sweating, thiocyanate and cyanide intoxication	Most hypertensive emergencies; caution with high intracranial pressure or azotemia
Nicardipine hydrochloride	5–15 mg/hr IV	5–10 min	13–30 min, may exceed 4 hr	Tachycardia, headache, flushing, local phlebitis	Most hypertensive emergencies except acute heart failure; caution with coronary ischemia
Fenoldopam mesylate	0.1–0.3 µg/kg/min as IV infusion	<5 min	30 min	Tachycardia, headache, nausea, flushing	Most hypertensive emergencies; caution with glaucoma
Nitroglycerin	0–100 µg/min as IV infusion	2–5 min	5–10 min	Headache, vomiting, methemoglobinemia, tolerance with prolonged use	Coronary ischemia
Enalaprilat	1.25–5 mg q 6 hr IV	15–30 min	6–12 hr	Precipitous fall in pressure in high-renin states; variable response	Acute left ventricular failure; avoid in acute myocardial infarction
Hydralazine hydrochloride	10–20 mg IV	10–20 min IV	1–4 hr IV	Tachycardia, flushing, headache, vomiting, aggravation of angina	Eclampsia
	10–40 mg IM	20–30 min IM	4–6 hr IM		

\*Hypotension may occur with all agents

†Requires special delivery system

Chobanian AV et al. *Hypertension*. 2003;42:1206

# Parenteral Drugs for Treatment of Hypertensive Emergencies (cont)

Drug	Dose	Onset of Action	Duration of Action	Adverse Effects*	Special Indications
<b>Adrenergic inhibitors</b> Labetalol hydrochloride	20–80 mg IV bolus q 10 min  0–2.0 mg/min IV infusion	5–10 min	3–6 hr	Vomiting, scalp tingling, bronchoconstriction, dizziness, nausea, heart block, orthostatic hypotension	Most hypertensive emergencies except acute heart failure
Esmolol hydrochloride	250–500 µg/kg/min IV bolus, then 50–100 µg/kg/min by infusion; may repeat bolus after 5 min or increase infusion to 300 µg/min	1–2 min	10–30 min	Hypotension, nausea, asthma, 1st-degree heart block, HF	Aortic dissection, perioperative
Phentolamine	5–15 mg IV bolus	1–2 min	10–30 min	Tachycardia, flushing, headache	Catecholamine excess