

## Critical Care Drugs

Class: Antiarrhythmic				
Drug	Use	Concentration	Dose	Notes
Amiodarone (Cordarone®)	Management of life-threatening recurrent VF or hemodynamically unstable VT.	<b>Standard:</b> 900 mg/500 mL D5W	<b>Bolus:</b> 150 mg/100 mL D5W over 10 min  <b>Standard:</b> 1 mg/min (33.3 mL/hr) for 6 hrs then 0.5 mg/min (16.6 mL/hr)	Adverse Effects: Hypotension, bradycardia, proarrhythmic events, peripheral neuropathy, thyroid dysfunction, nausea, vomiting, pulmonary toxicity
Procainamide (Pronestyl®)	VT, PVC, PAT, A-fib	<b>Standard:</b> 2 gm/500mL D5W, NS;  <b>Max:</b> 2 gm/250 mL	<b>Bolus:</b> 500 mg – 1 gm over 30 min  <b>Standard:</b> 1-6 mg/min	Adverse Effects: Hypotension, Av-block, bradycardia, lupus-like syndrome, fever, rash, thrombocytopenia and hemolytic anemia
Lidocaine (Xylocaine®)	ventricular arrhythmias	<b>Standard:</b> 2 gm/500 mL	1-4 mg/min	Adverse Effects: Confusion, hypotension, lightheadedness, diplopia, seizures, and tinnitus  ▶ <b>Contraindicated in complete or 2<sup>nd</sup> degree AV block</b>
Class: Beta Blockers				
Drug	Use	Concentration	Dose	Notes
Esmolol (Breviblock®)	Control of ventricular rate in atrial fib/flutter and noncompensating sinus tachycardia	<b>Standard:</b> 2500 mg/250mL NS; <b>Max:</b> 20 mg/mL in D5W, NS	<b>Loading:</b> 500 mcg/kg/min over 1 min  <b>Maint.:</b> 50 mcg/kg/min	If HR not controlled repeat loading dose and é rate by 50 mcg/kg/min (max 200 mcg/kg/min);  ▶ <b>Central line recommended for max concentration</b>  ▶ <b>Contraindications: sinus bradycardia, AVB &gt; 1°, cardiogenic shock</b>
Class: Calcium Channel Blockers				
Drug	Use	Concentration	Use	Notes
Diltiazem (Cardizem®)	HR control during atrial fib and flutter for 24 hours	<b>Standard:</b> 125 mg/125 mL D5W, NS	<b>Loading:</b> 0.25 mg/kg over 2 min; if inadequate response, 0.35 mg/kg over 2 min <b>Initial:</b> 5 mg/hr <b>Max Rate:</b> 15 mg/hr	↓HR, ↓BP, pruritis  <b>Contraindications: AVB &gt; 1°, WPW syndrome, V-tach, SSS, short PR syndrome</b>
NiCARdipine (Cardene®)	Antianginal, antihypertensive	<b>Standard:</b> 25 mg/250 mL D5W, NS	5 mg/hr, increase by 2.5 mg/hr q 15 min to a max of 15 mg/hr After response is achieved: 3 mg/hr	Adverse effects: flushing, ↑HR, palpitations, angina

Class: Inotrope				
Drug	Use	Concentration	Dose	Notes
Milrinone (Primacor®)	↓PCWP, ↓SVR, ↓MAP	<b>Standard:</b> 40 mg/200 mL D5W  <b>Max.</b> 40 mg/200 mL	<b>Loading:</b> 50 mcg/kg over 10 min <b>Maint:</b> 0.375 – 0.75 mcg/kg/min	Adverse Effects: ↑PVC, ventricular arrhythmia, ventricular fib, SV arrhythmia, angina, hypotension, HA
DOBUtamine (Dobutrex®)	↑SV, ↑contractility, ↑CO, ↑HR	<b>Standard:</b> 500 mg/250 mL D5W <b>Max:</b> 1250 mg/250 mL D5W or NS	<b>Initial:</b> 1-5 mcg/kg/min up to 20 mcg; titrate by 1-4 mcg/kg/min q 10-30 min <b>Max Rate:</b> 50 mcg/kg/min	Note: alpha effects predominate above 10 mcg/kg/min) Adverse Effects: tachycardia, arrhythmia, HA, NV
Epinephrine (Adrenalin®)	↑HR, ↑contractility, ↑cardiac workload ↑PA pressures, can convert asystole to NSR	<b>Standard:</b> 4 mg/250 mL D5W, NS <b>Max:</b> 1 mg/10 mL	<b>Initial:</b> 0.05-10 mcg/min, then titrate	► <b>Central line administration</b>  Note: at 20 mcg/min pure alpha effects occur)  Adverse Effects: tachycardia, arrhythmia, PE, HTN, HA, resp. distress
Class: Sympathomimetics				
Drug	Use	Concentration	Dose	Notes
DOPamine (Intropin®)	↑BP, ↑PCWP, ↑HR	<b>Standard:</b> 800 mg/500 mL D5W <b>Max:</b> 800 mg/250 mL D5W	<b>Initial:</b> 1-5 mcg/kg/min up to 20 mcg; titrate by 1-4 mcg/kg/min q 10-30 min <b>Max Rate:</b> 50 mcg/kg/min	Note: alpha effects predominate above 10 mcg/kg/min) Adverse Effects: tachycardia, arrhythmia, HA, NV
Epinephrine (Adrenalin®)	↑HR, ↑contractility, ↑cardiac workload ↑PA pressures, can convert asystole to NSR	<b>Standard:</b> 4 mg/250 mL D5W, NS <b>Max:</b> 1 mg/10 mL	<b>Initial:</b> 0.05-10 mcg/min, then titrate	► <b>Central line administration</b>  Note: at 20 mcg/min pure alpha effects occur)  Adverse Effects: tachycardia, arrhythmia, PE, HTN, HA, resp. distress
Class: Sympathomimetic / Vasopressors				
Drug	Use	Concentration	Dose	Notes
Norepinephrine (Levophed®)	↑BP, ↑PA pressure, ↑SVR, ↑myocardial workload	<b>Standard:</b> 4 mg/250 mL D5W <b>only</b> <b>Max:</b> 16 mg/250mL D5W <b>only</b>	<b>Initial:</b> 0.5-1 mcg/min: titrate to desired response <b>Usual</b> 2-30 mcg/min	► <b>Central line administration</b> Adverse Effects: brady or tachycardia, peripheral vasoconstriction, HA, HTN, arrhythmia, ↓urine output, acidosis, hyperglycemia
Phenylephrine (Neo-Synephrine®)	↑BP, ↑SVRM, ↑PA pressure, ↑myocardial workload	<b>Standard:</b> 100 units/100 mL D5W, NS	<b>Initial:</b> 0.05 units/min <b>Max:</b> 360 mcg/min <b>Maint Rate:</b> 40-60 mcg/min	Adverse Effects: arrhythmias, cardiac arrest, ↓CO, angina, myocardial ischemia and periph constriction.  Doses > 0.04 units/min associated with more cardiovascular adverse effects
Vasopressin (Pitressin®)	For unlabeled use in septic shock	<b>Standard:</b> 100 units/100mL D5W, NS	<b>Initial:</b> 0.04 units/min (range 0.01-0.04 units/min)	► <b>Central line administration</b>

Class: Vasodilators				
Drug	Use	Concentration	Dose	Notes
Sodium nitroprusside (Nipride®)	↓BP, ↓SVR, ↓PCWP ↓CO	<b>Standard:</b> 50 mg/250 mL D5W  <b>Max:</b> 100 mg/250 mL D5W	<b>Average Dose:</b> 3 mcg/kg/min <b>Max:</b> 10 mcg/kg/min	► <b>Protect from light</b>  Adverse Effects: metabolic acidosis, severe hypotension, HA, nausea, dyspnea, LOC, thiocyanate toxicity (esp. with prolonged infusion > 2 mcg/kg/min)
Nitroglycerin (Tridyl®)	↓BP, ↓SVR, ↓PCWP, may ↑HR	<b>Standard:</b> 50 mg/250 mL D5W	<b>Initial:</b> 5 mcg/min, increasing by 5 mcg/min q 3-5 min up to 20 mcg/min <b>Max Rate</b> doses of up to 640 mcg/min have been used Then titrate in increments of 10-20 mcg/min up to 200 mcg/min	► <b>Non PVC tubing</b>  Adverse Effects: severe hypotension, reflex tachycardia, HA, N/V  Associated with development of tolerance over 24-48 hrs.
Class: Miscellaneous				
Drug	Use	Concentration	Dose	Notes
PENTObarbitol (Nembutal®)	Barbiturate used to induce coma	<b>Standard:</b> undiluted 50 mg/mL	10 mg/kg over 30 min, then 5 mg/kg/hr × 3 hours, then 1-2.5 mg/kg/hr thereafter If ICP > 20 mg HG and pentobarb conc < 3 mg/dL may admin additional 5 mg/kg	◆◆Must be intubated. Monitor EEG (i.e. burst suppression 30-45 sec) and hemodynamic status◆◆
Thiopental (Pentothal®)	Barbiturate used to induce coma	<b>Standard:</b> 25 mg/mL D5W, NS	20 mg/kg over 1 hour, then 10 mg/kg/hr × 6 hours, then 3 mg/kg/hr thereafter	◆◆Must be intubated. Monitor EEG (i.e. burst suppression 30-45 sec) and hemodynamic status◆◆
Methylprednisolone (Solumedrol®)	For spinal cord injury		Bolus: 30 mg/kg in 100 mL D5W NS over 30 minutes  Maint: 5.4 mg/kg in 500 mL × 23 hours	
Argatroban (ARGATROBAN®)		<b>Standard:</b> 250 mg/250 mL D5W, NS	Initial 2 mcg/kg/min (0.5 mcg/kg/min in severe hepatic dysfunction)	