Pharmacologic properties:

Dopamine is an endogenous catecholamine that exerts an inotropic effect on the myocardium resulting in increased cardiac output. It stimulates dopaminergic, beta-adrenergic and alpha- adrenergic receptors of the nervous system in a dose-dependent manner. Low to moderate doses (2-10 mcg/kg/min) have predominant beta-adrenergic receptor stimulating actions that result in increased cardiac output and heart rate with minimal vasoconstriction. At higher doses (>10 mcg/kg/min), dopamine has alpha receptor stimulating actions that result in peripheral vasoconstriction and increased blood pressure.

Indications:

- Cardiogenic, neurogenic, septic, or anaphylactic shock
- Bradycardia with hypotension refractory to Atropine
- Hemodynamically significant (SBP < 90 mmHg) overdose
- Hypotension (SBP < 90 mmHg) not secondary to hypovolemia

Contraindications:

- Shock due to hypovolemia
- Dopamine should not be administered in the presence of uncorrected tachyarrhythmias or ventricular fibrillation
- Dopamine should not be used in patients with pheochromocytoma

Precautions:

- Significant local tissue necrosis can occur with extravasation from peripheral IV
- Dopamine is inactivated in alkaline solution, do not use any alkaline diluent
- Patients who have been treated with monoamine oxidase (MAO) inhibitors will require substantially reduced dosage (1/10th of the regular dose)

Adverse Reactions:

- Headache, Ectopic beats, Tachycardia, Palpitation, Nausea, Vomiting,Dyspnea

Dosage and administration:

Adult

- Mix 800 mg of Dopamine in 500 mL of normal saline which yields 1600 mcg/mL. This will be run at 10 mcg/kg/minute (usually 30-45 drops per minute) and titrated to a BP of 100 mmHg systolic

Pediatric

- Dopamine (400mg) mixed in 500 mL of NS yields 800 mcg/mL. This will be run at 5 - 20 mcg/kg/minute (usually 15-30 drops per minute) and titrated to blood pressure.