

15. DOPAMINE HYDROCHLORIDE (INTROPIN)

a) Pharmacology

- (1) Alpha and beta adrenergic receptor stimulator
- (2) Dopaminergic receptor stimulator
- (3) Precursor of norepinephrine
- (4) At low doses, less than 2 mcg/kg/min
 - (a) Dilates renal and mesenteric blood vessels
 - (b) Venoconstricts
 - (c) Arterial resistance varies
- (5) At moderate doses, 2–6 **mcg**/kg/min beta1 stimulating effect on heart Results in increased cardiac output
- (6) High dose, 6–10 mcg/kg/min

Exhibits alpha1 effects; peripheral vasoconstriction including renal and mesenteric vessels, increases left and right ventricular preload

(7) Doses greater than or equal to 10 mcg/kg/min

Alpha1 stimulating effects may reverse mesenteric and renal artery dilatation resulting in decreased blood flow, causing increased preload due to effects on venous system

b) Pharmacokinetics

- (1) Extremely rapid onset of action
- (2) Extremely brief duration of action
- (3) The rate of administration may be used to control the effect of dopamine.

c) Indications

- (1) Cardiogenic shock
- (2) Septic shock
- (3) Anaphylactic shock
- (4) Hypovolemic shock (after sufficient volume replacement)

d) Contraindications

- (1) Preexisting tachydysrhythmias
- (2) Uncorrected hypovolemia



e) Adverse Effects

- (1) Anginal pain
- (2) Tachydysrhythmias
- (3) Nausea and vomiting
- (4) Hypertension
- (5) Undesirable degree of vasoconstriction

f) Precautions

- (1) Extravasation should be reported to the hospital staff on arrival.
- (2) Patients receiving monoamine oxidase (MAO) inhibitors are extremely sensitive to the effects of dopamine and should receive a much lower dosage than is usually given.
- (3) Patients with pheochromocytoma are extremely sensitive to dopamine and may develop profound hypertension in response to minimal doses.

g) Dosage

- (1) For IV/IO infusion only. The preferred route of administration is IV.
- (2) In general, the infusion rate is adjusted to blood pressure and clinical response.
- (3) Adult: Administer 2–20 **mcg**/kg/min IV drip titrated to BP of 100 systolic or medical consultation selected BP; initial infusion rate 2–5 **mcg**/kg/min
- (4) Pediatric: Administer 2–20 **mcg**/kg/min IV drip titrated age specific BP or medical consultation selected BP; initial infusion rate is 2 **mcg**/kg/min