ศูนย์พิษวิทยารามาธิบดี
คณะแพทยศาสตร์โรงพยาบาลรามาธิบดี มหาวิทยาลัยมหิดล
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Treatment of β-blocker Poisoning

Asymptomatic

1. Activate charcoal
2. Consider orogastric lavage with the first hour postingestion.
3. Consider whole-bowel irrigation with PEG for ingested sustained-release preparations

Mild Toxicity

Mild hypotension (BP < 100 systolic) or bradycardia (HR <60) without hypotension

1. Atropine 1 mg for bradycardia
2. Fluid boluses (20-40 ml/kg of NSS) for hypotension (monitor closely to avoid pulmonary edema)

Moderate to Severe Toxicity

Failure of the above therapy, or severe bradycardia (HR <40), or hypotension (BPs < 80), or clinical evidence of hypotension: e.g. congestive heart failure or decreased consciousness

1. All of the above plus:
2. Monitor ventilation and intubate if necessary
3. Atropine for bradycardia
4. Catecholamine infusion: Very high doses of the following are typically required; invasive hemodynamic monitoring is recommended
    a. Isoproterenol (β_1, β_2 agonist---caution for β_2-mediated vasodilation);
    Start at 0.1 μg/kg/min; titrate rapidly to effect
    b. Epinephrine (α, β agonist—caution for "unopposed α " effect);
    Start at 0.02 μg/kg/min; titrate rapidly to effect
    c. Dopamine;
    Start at 2.5 μg/kg/min; titrate rapidly to effect
    d. Norepinephrine (α, β_1 agonist—caution for "unopposed α " effect);
    Start at 0.1 μg/kg/min; titrate rapidly to effect;
5. High-dose insulin: RI 0.5-1 unit/kg/hr IV with dextrose 1 g/kg/h (e.g. 10 ml/kg/h of 10% dextrose or 2 ml/kg/h of 50% dextrose); glucose should be monitored every 30 min for the first 4 h and titrated to maintain euglycemia
(Insulin increases myocardial glucose utilization or alters myocardium calcium handling)
6. Calcium salts for hypotension: 1-3 grams calcium chloride slow IV push (alternatively, 3-9 g calcium gluconate)
7. Ventricular pacing: This often increase heart rate without improving cardiac output
8. Hemodialysis for water soluble drug: **atenolol**
9. IV Fat Emulsion for lipid soluble drugs: carvedilol, propranolol, metoprolol, bisoprolol
10. Intra-aortic balloon pump or extracorporeal circulation

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