

HIET can be used to manage cardiovascular toxicity resulting from diltiazem or verapamil overdose.

HIET is an inotrope & can be used alone or in combination with standard catecholamine inotropes

- HIET is NOT a pressor or a chronotrope
- Bradycardia or peripheral vasodilation with CVS compromise requires standard inotrope Rx

Indications

Haemodynamic compromise in:

- Verapamil / diltiazem toxicity

HIET may worsen peripheral vasodilation in amlodipine + other calcium channel blocker toxicity

HIET may be useful in select cases of:

- Beta Blocker poisoning resistant to fluid and epinephrine
- Other poisonings causing refractory shock

Adverse effects:

- Hypoglycaemia
- Hypokalaemia
- Vasodilation

Only administered in a critical care setting and in consultation with a Clinical Toxicologist.

Preparation

- 500 units short-acting insulin in 50 mL normal saline (10 units/mL)
- place in a 50 mL syringe in a syringe driver

NB: avoid using fluid bags for long insulin infusions due to absorption of insulin to the plastic

Dose and Administration

- 50 mL of 50% glucose as slow IV bolus FOLLOWED BY an initial infusion of 100 mL 10% glucose / hour (in children: 2.5 mL/kg of 10% glucose as slow IV bolus FOLLOWED BY infusion 3-5 mL/kg/hour 10% glucose)
 - if blood glucose is > 15 mmol/L, a bolus is not required
- 1 unit/kg IV short-acting insulin bolus FOLLOWED BY 1 unit/kg/hour infusion (up to 120 units /hour)
 - Titrate to effect every 15 min up to 5 units/kg/hour over first hour
 - Can be titrated up to a maximum of 10 units / kg / hour as required (max 1200 units / hour)
- Maintain glucose between 5.5 – 11.0 mmol/L (may need higher glucose concentrations via CVC)
- Maintain K⁺ between 2.8 – 3.3 mmol/L

Check glucose and K⁺ every 15 minutes initially

Therapeutic Endpoint:

Cease after cardiovascular toxicity resolves. Increasing dextrose requirements may provide an early sign of resolution of cardiovascular toxicity

Dextrose and K⁺ infusions may still be required for several hours after insulin is ceased.

Pregnancy: Insulin is safe in pregnancy