Lipid resuscitation therapy (LRT)  
Intralipid® / LipidRescue™ Therapy

**Indication**  
- Administration of a lipid emulsion with the intent of reducing the clinical manifestations of toxicity from excessive doses of lipid-soluble cardiotoxic medications  
- May be considered for patients with hemodynamic, or other instability (e.g., intractable seizures), not responsive to standard resuscitation measures (e.g. fluid replacement, inotropes, and pressors, etc.)

**Initial Focus**  
- Airway management: ventilate with 100% oxygen  
- Seizure suppression: benzodiazepines are preferred  
- Basic and Advanced Cardiac Life Support (BLS/ACLS): may require prolonged effort

**20% Lipid Emulsion Infusion** (values in parenthesis are for a 70 kg patient)

<table>
<thead>
<tr>
<th>Indication for ILE</th>
<th>Response?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bolus 1.5 mL/kg (lean body mass) intravenously over 2-3 minutes (~100 mL)*</td>
<td>NO</td>
</tr>
</tbody>
</table>

- May repeat bolus 1.5 mL/kg (lean body mass) intravenously over 2-3 minutes every 5 minutes up to TWO times for persistent cardiovascular collapse (arrest or pre-arrest: asystolic patients, those with pulseless electrical activity, severe hypotension etc.)

**If response to bolus(es), follow with continuous infusion at 0.25 mL/kg/min (~18 mL/min; adjust by roller clamp)**  
Continue infusion for at least 10 mins after attaining circulatory stability  
If there is an initial response to the bolus followed by the re-emergence of hemodynamic instability, the bolus could be repeated  
When possible, lipid resuscitation therapy should be terminated after 1 h, or less, if the patient’s clinical status permits.  
Recommended upper limit: approximately 12 mL/kg lipid emulsion over the first 30 mins

**If no response to boluses, discontinue lipid emulsion and consider alternative therapies**

**Monitoring**  
Blood pressure, heart rate, and other available hemodynamic parameters should be recorded at least every 15 min during the infusion  
In cases where the patient’s stability is dependent on continued lipid infusion, further treatment decisions should be made in collaboration with the Toxicologist on call.

*May be infused via peripheral or central line; in-line filter NOT required

**Avoid:**  
- vasopressin, calcium channel blockers, β-blockers, or local anesthetics  
- propofol in patients with cardiovascular instability

**Contraindications:** Hypersensitivity to fat emulsion and severe egg or legume (soybean) allergies  
**Reported possible complications:** Laboratory interference, fat overload syndrome, pancreatitis, ARDS

Revised October 2022  
Do not archive
Lipid resuscitation therapy (LRT)  
Intralipid® / LipidRescue™ Therapy

Supplemental Information

*Administration notes can be found on the Canadian Antidote Guide website or app:
  - Note that dosing recommendations may be slightly different

Why avoid vasopressin, calcium channel blockers, ß-blockers, or local anesthetics?
  - toxin-induced cardiovascular collapse is different from other causes of cardiac arrest, therefore raising peripheral vascular resistance with vasopressors (e.g. vasopressin) can impair cardiac output and impede resuscitation
  - CCB and BB reduce cardiovascular contractility and should be avoided when there is cardiovascular instability
  - the recommendation to avoid local anesthetics is in the context of treatment for local anesthetic toxicity

What about propofol?
  - should not be used when there are signs of cardiovascular instability since it has cardiovascular depressant effects and decreases systemic vascular resistance
  - the lipid content of propofol is too low (10% lipid emulsion) to provide benefit as a form of lipid rescue

How long does lab interference last?
  - since the half-life of triglycerides is short (approximately 15 minutes), laboratory interference should dissipate after a few hours
  - reports of laboratory interference from lipemia range from 1-25 hours post lipid emulsion dose

Prolonging the duration of lipid infusion
  - this decision should only be made in consultation with the Poison Centre Toxicologist on call
  - in cases where the patient’s stability is dependent on continued lipid infusion, longer periods of treatment may be appropriate
  - if additional lipid infusion is required to maintain patient stability, a reduction in rate to 0.025 mL/kg/min (i.e., 1/10 the initial rate) may be sufficient, and reduce the potential for adverse effects from prolonged high lipid infusion rates

References: