

3-10 Local anaesthetic toxicity v.1

Signs of severe toxicity:

- Sudden alteration in mental status, severe agitation or loss of consciousness, with or without tonic-clonic convulsions.
- Cardiovascular collapse: sinus bradycardia, conduction blocks, asystole and ventricular tachyarrhythmias may all occur.
- Local anaesthetic toxicity may occur some time after an initial injection.

START

- 1 Stop injecting the local anaesthetic (remember infusion pumps).
- 2 Call for help and inform immediate clinical team of problem.
- 3 Call for cardiac arrest trolley and lipid rescue pack.
- 4 Give 100% oxygen and ensure adequate lung ventilation:
 - Maintain the airway and if necessary secure it with a tracheal tube.
 - Hyperventilation may help reduce acidosis.
- 5 Confirm or establish intravenous access.
- 6 **If circulatory arrest:**
 - Start continuous CPR using standard protocols.
 - **Give** intravenous lipid emulsion (Box A).
 - Recovery may take >1 hour.
 - Consider the use of cardiopulmonary bypass if available.

If no circulatory arrest:

- Conventional therapies to treat hypotension, brady- and tachyarrhythmia.
- **Consider** intravenous lipid emulsion (Box A).

- 7 Control seizures with small incremental dose of benzodiazepine, thiopental or propofol.

Box A: LIPID EMULSION REGIME

USE 20% Intralipid® (propofol is not a suitable substitute)

Immediately

- Give an initial i.v. bolus of lipid emulsion 1.5 ml.kg⁻¹ over 1 min (~100 ml for a 70 kg adult)
- Start an i.v. infusion of lipid emulsion at 15 ml.kg⁻¹.h⁻¹ (17.5 ml.min⁻¹ for a 70 kg adult)

At 5 and 10 minutes:

- Give a repeat bolus (same dose) if:
 - cardiovascular stability has not been restored or
 - an adequate circulation deteriorates

At any time after 5 minutes:

- Double the rate to 30 ml.kg⁻¹.h⁻¹ if:
 - cardiovascular stability has not been restored or
 - an adequate circulation deteriorates

Do not exceed maximum cumulative dose 12 ml.kg⁻¹ (70 kg: 840 ml)

Box B: CRITICAL CHANGES

If cardiac arrest, continue lipid emulsion and → 2-1

Box C: AFTER THE EVENT

Arrange safe transfer to appropriate clinical area

Exclude pancreatitis: regular clinical review, daily amylase or lipase

Report cases to MHRA: <https://yellowcard.mhra.gov.uk/>