3-10 Local anaesthetic toxicity v.2

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.
 - Avoid hypercarbia consider mild hyperventilation.

5 Confirm or establish intravenous access.

6 If circulatory arrest:

- Start continuous CPR using standard protocols (→ 2-1) but:
- Give intravenous lipid emulsion (Box A).
- Use smaller adrenaline dose (≤ 1µg.kg⁻¹ instead of 1 mg)
- Avoid vasopressin.
- 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:

- Small incremental dose of benzodiazepine is drug of choice.
- Thiopental or propofol can be used, but beware negative inotropic effect.
- Consider neuromuscular blockade if seizures cannot be controlled.

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 2-3 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:
 - o cardiovascular stability has not been restored or
 - o an adequate circulation deteriorates

At any time after 5 minutes:

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

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

Box B: CRITICAL CHANGES

Cardiac arrest \rightarrow Check already done **1** to **5**, then \rightarrow **6**

Box C: AFTER THE EVENT

Arrange safe transfer to appropriate clinical area Exclude pancreatitis: regular clinical review, daily amylase or lipase Report case on your local critical incident system and to the relevant national system (these vary between each devolved nation and in Ireland)

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