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| 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. |

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| 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:
	+ 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) |

 START.

❶ Stop injecting the local anaesthetic (remember infusion pumps).

❷ Call for help and inform immediate clinical team of problem.

❸ Call for cardiac arrest trolley and lipid rescue pack.

❹ 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.

❺ Confirm or establish intravenous access.

❻ **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).

**❼** 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.

• Control seizures: give a benzodiazepine, thiopental or propofol in small incremental doses

• Assess cardiovascular status throughout

• Consider drawing blood for analysis, but do not delay definitive treatment to do this

• Recovery from LA-induced cardiac arrest may take >1 h

• Propofol is not a suitable substitute for lipid emulsion

• Lidocaine should not be used as an anti-arrhythmic therapy Manage arrhythmias using the same protocols, recognising that arrhythmias may be very refractory to treatment

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| Box B: CRITICAL CHANGES |
| Cardiac arrest → Check already done ❶ to ❺, then → ❻ |

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| 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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