

INTRALIPID - MANAGEMENT AND TREATMENT OF SEVERE LOCAL ANAESTHETIC TOXICITY (ADULT ONLY)

This LOP is developed to guide clinical practice at the Royal Hospital for Women. Individual patient circumstances may mean that practice diverges from this LOP.

- 1. AIM**
To guide the clinical practice in the management and treatment of local anaesthetic toxicity using Intralipid 20% intravenous infusion.

- 2. PATIENT**
Patients having regional anaesthesia/analgesia techniques such as epidural infusions, Transversus Abdominis Plane (TAP) blocks and local infiltration of local anaesthetics.

- 3. STAFF**
 - Anaesthetist
 - Nursing/Midwifery
 - Pharmacy

- 4. EQUIPMENT**
 - Lipid Rescue Kit – available in bottom drawer of all cardiac arrest trolleys with RHW (Contents - Appendix 1)
 - Standard monitoring of expiration date should occur with arrest trolley medications.

- 5. CLINICAL PRACTICE**
 - Refer to signs and symptoms of local anaesthetic toxicity to establish diagnosis. (Appendix 2)
 - **ANAESTHETISTS TO COORDINATE SET UP AND DELIVERY OF INTRALIPID 20%.**

Management of EARLY signs of Local Anaesthetic Toxicity:

- Stop injecting the local anaesthetic.
- Call for help. (Rapid Response)
- Give 100% oxygen and ensure adequate lung ventilation.
- Confirm / establish intravenous access.
- Assess cardiovascular status throughout.

Management of SEVERE Local Anaesthetic Toxicity:

- Stop injecting the local anaesthetic.
- Call for help. (CODE BLUE)
- Maintain airway (secure if necessary).
- Give 100% oxygen and ensure adequate lung ventilation.
- Confirm / establish intravenous access.
- Control of seizures: give benzodiazepine or thiopentone or propofol in small incremental doses.
- Assess cardiovascular status throughout.

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Management of CARDIAC ARREST Associated With Local Anaesthetic Toxicity.

- Start cardiopulmonary resuscitation as per protocol.
- Manage arrhythmias using Advanced Life Support (ALS) protocol: these may be refractory to standard treatment.
- Prolonged resuscitation maybe necessary.
- Consider treatment with lipid emulsion.

Treatment of Severe Local Anaesthetic Systemic Toxicity with INTRALIPID 20%

- Refer to the AAGBI Safety Guide Management of Severe Local Anaesthetic Toxicity 2010 which is available in the Lipid Rescue Kit.
- Establish 2 separate intravenous cannulas, one for bolus dosing another for infusion.

Bolus

- Connect gravity giving set with integral three-way tap to 20% Intralipid bottle. See illustration below (Appendix 2)
- Prime the set then connect to patient's IV cannula.
- Give bolus to patient using the 50 mL syringe connected to the integral three-way tap, draw up and administer the first Intralipid bolus (1.5 ml/kg) over 1 minute. See dosage guide. (Appendix 3)

Infusion

- Set up standard infusion line using an Agilia pump, second IV cannula, and the second Intralipid bottle.
- Prime the set then connect to patient's second IV cannula.
- Commence infusion (15 ml/kg/hr) (Appendix 3)
- If in cardiac arrest continue CPR to circulate Intralipid.

General

- Give a maximum of two repeat boluses (same dose) at 5 minute intervals if cardiovascular stability has not been restored or an adequate circulation deteriorates.
- At any time after 5 minutes increase the infusion rate to 30 ml/kg/hr if an adequate circulation has still not been established.
- Continue infusion until CVS stability returns or maximum dose of intralipid is given.
- The AAGBI recommendation is that a **total dose of 12ml/kg should not be exceeded (Appendix 3).**

6. DOCUMENTATION

- Integrated Clinical Notes or eMR
- eMEDs
- Observation Chart or eMR
- eMaternity
- Partogram
- Clinical Pathways

7. EDUCATIONAL NOTES

- Ensure the kit is replenished and replaced after use. Call APS for assistance.

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- 8. RELATED POLICIES / PROCEDURES / CLINICAL PRACTICE LOP**
- Prevention Infection and Control Policy
 - Medication Handling in NSW Public Health Facilitates.
 - High Risk Medicines Management Policy
 - User-applied Labelling of Injectable Medicines, fluids and lines
 - EPIDURAL ANALGESIA GUIDELINES FOR THE RHW
 - Patient Registration – Patient Administration System (pas)
 - Clinical Handover: Implementation of ISBAR Framework and Key Standard Principles
 - Patient with Acute Condition for Escalation (PACE): Management of the Deteriorating ADULT and MATERNITY Inpatient
- 9. RISK RATING**
HIGH
- 10. NATIONAL STANDARD**
4 – Medication
- 11. REFERENCES**
- AAGBI Safety Guide Management of Severe Local Anaesthetic Toxicity 2010
 - Weinberg G *et al. Reg Anesth Pain Med* 2004; **29**: 74.
 - Picard J, Meek T. *Anaesthesia* 2006; **61**:107-9
 - Rosenblatt MA *et al. Anesthesiol* 2006; **105**: 217.
 - Litz RJ *et al. Anaesthesia* 2006; **61**: 800.
 - Foxall G *et al. Anaesthesia* 2007; **62**: 516.
 - www.lipidrescue.org

REVISION & APPROVAL HISTORY

Reviewed and endorsed Therapeutic & Drug Utilisation Committee 28/4/21
Approved Quality & Patient Care Committee 16/8/18
Endorsed Therapeutic & Drug Utilisation Committee 12/7/18

FOR REVIEW : MAY 2023

APPENDIX 1

Lipid Rescue Kit contents:

- AAGBI (The Association of Anaesthetists of Great Britain & Ireland) Safety Guideline (Endorsed by ANZCA) (copy attached)
- Bolus dose set up illustration
- 20% Intralipid dosing guide
- 20% Intralipid Product Information
- 2 × 20% Intralipid 500mL bottles (1 bottle for bolus doses plus 1 bottle for continuous infusion)
- 2 × airway needles
- 1 × 50mL syringe
- 1 × standard giving set
- 1 × 3 way tap
- 1 × extension tubing
- 1 × Agilia volumat line (for continuous infusion)

APPENDIX 2

Signs of Local Anaesthetic Toxicity:

Early signs of local anaesthetic toxicity (PACE 2)

- numbness of tongue
- restlessness
- tinnitus
- vertigo
- shivering
- muscular twitching & tremors (initially involving muscles of face & distal parts of extremities)
- generalised convulsions
- hypertension and tachycardia

Late (severe) signs of local anaesthetic toxicity (CODE BLUE)

- 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

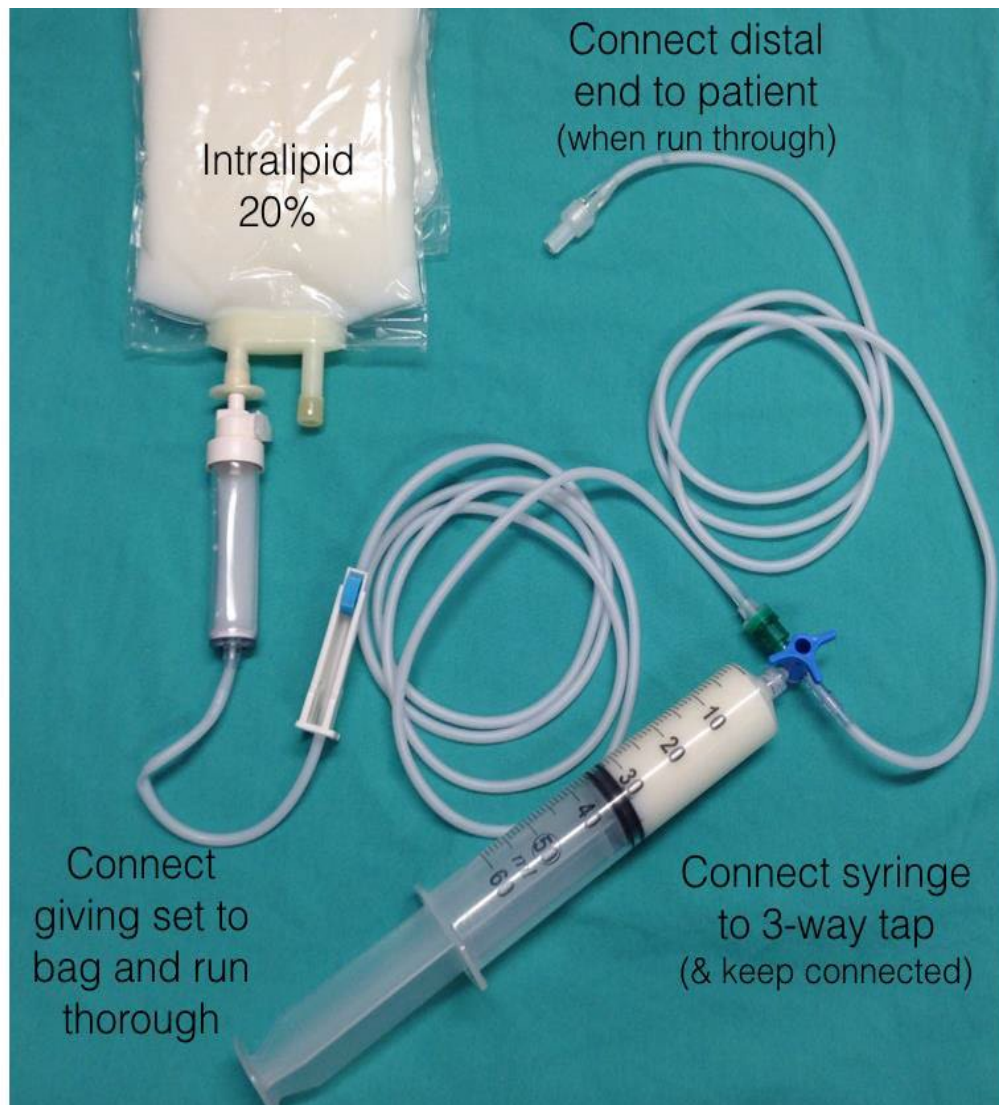
APPENDIX 3

SEVERE LOCAL ANAESTHETIC TOXICITY

20% INTRALIPID

BOLUS DOSE SET UP

Your nearest bag of Intralipid is kept _____



APPENDIX 4**SEVERE LOCAL ANAESTHETIC TOXICITY****20% INTRALIPID****BOLUS AND INFUSION DOSING**

**** A maximum dose of 12mL/Kg should not be exceeded****

WEIGHT	BOLUS	INFUSION	INFUSION	MAXIMUM
	1.5 mL/kg over one minute	Start at: 15 mL/kg/hr	Increase to: 30mL/kg/hr (after 5 min if inadequate circulation persists)	Cumulative Dose (Bolus and Infusion) 12mL/kg
Kilograms	mL/min	mL/hr	mL/hr	mL
40	60	600	1200	480
45	67.5	675	1350	540
50	75	750	1500	600
55	82.5	825	1650	660
60	90	900	1800	720
70	105	1050	2100	840
80	120	1200	2400	960
90	135	1350	2700	1080
100	150	1500	3000	1200