



GUIDELINE

Lipid Infusion

Scope (Staff):	All Emergency Department Clinicians
Scope (Area):	Emergency Department

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Lipid Infusion

Medication

This guideline can be used for the management of:

- Lipid Rescue for accidental IV administration

Intravenous lipid emulsion is a novel method for treating local anesthetic systemic toxicity that also shows promise as an effective antidote for other lipophilic drug poisonings.

Cardiovascular collapse is the most life-endangering complication of intravascular injection during regional anesthesia. Local anesthetic systemic toxicity is generally considered to be resistant to conventional modes of resuscitation.

The 'lipid sink' phenomenon is the most widely accepted mechanism of action for lipids. The lipid emulsion infusion creates an expanded lipid phase, and the resulting equilibrium drives toxic drug from tissue to the aqueous plasma phase then to the lipid phase. This draws down the content of lipid-soluble local anaesthetics from within the cardiac tissue, thereby improving cardiac conduction, contractility, and coronary perfusion.

Indications

The Intralipid brand of fat emulsion is reserved solely for the emergency management of local anaesthetics inadvertently administered intravenously.

At PMH, the kit is located:

- Emergency Department medication room
- Contained in a grey plastic box
- Stored on the bottom shelf of the medication shelving (opposite the fridge)
and should be used for this indication only.

Administration

Give Lipid Emulsion 20% (IntraLipid brand of Fat Emulsion):

- Bolus 1.5 ml/kg over 1 minute
- Start infusion at 0.25ml/kg/min
- Repeat Bolus twice at 5 minute intervals
- Increase the rate to 0.5ml/kg/min if haemodynamic stability is not restored after boluses
- Continue infusion until haemodynamic stability is restored
- Maximum total dose of 8ml/kg is recommended

	10kg	15kg	20kg	25kg	30kg
Bolus (mls)	15	22.5	30	37.5	45
Infusion Rate (ml/min)	2.5	3.75	5	6.25	7.5
Infusion Rate (ml/hour)	150	225	300	375	450
Maximum Dose (mls)	80	120	160	220	240

Special

Lipids are given in **addition** to standard Cardio-Pulmonary Resuscitation.

Prompt and effective airway management must be implemented to prevent hypoxia and respiratory acidosis, which may potentiate local anaesthetic toxicity.


Tags

emergency, fat emulsion, infusion, intralipid, lipid rescue, lipids, local anaesthetics, resuscitation

References

- Princess Margaret Hospital for Children, Perth West Australia, Anaesthetic Department Guidelines, April 2013, Dr Lisa KHOO
- Rothschild L, Bern S, Oswald S, Weinberg G. Intravenous Lipid Emulsion in Clinical Toxicology. Scandinavian Journal of Trauma, Resuscitation and Emergency Medicine 2010, 18:51 accessed on 13/05/2014 <http://www.sjtrem.com/content/18/1/51>

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