Synonyms

SMOF (20%) stands for Soya oil (6%), Medium chain triglycerides (6%), Olive oil (5%), Fish oil (3%)

Final volume contains 17% fat providing 1.7kcal/mL. 1mL of fat emulsion is equivalent to 0.17g of fat

Dose and Indications

Supply of energy, essential fatty acids and omega-3 fatty acids as part of a parenteral nutrition regimen, when oral or enteral nutrition is impossible, insufficient or contraindicated

Intravenous infusion

Commence at 1g/kg/day, and increase daily as tolerated up to 3g/kg/day.

Infusion should be run over 24hrs.

Should be given with parenteral nutrition.

Table 1: Guide for Dose & infusion rate

<table>
<thead>
<tr>
<th>Dose (gram/kg/day)</th>
<th>Approximate infusion rate (mL/kg/hour)</th>
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<tbody>
<tr>
<td>1</td>
<td>0.25</td>
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<tr>
<td>2</td>
<td>0.5</td>
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<tr>
<td>3</td>
<td>0.75</td>
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Preparation and Administration

25ml syringes contain: SMOF lipid (18ml), SoluVit (1.4ml), Vitalipid (5.6ml)
*Used for infusion rate <1ml/hr*

50ml syringes contain: SMOF lipid (36ml), SoluVit (2.8ml), Vitalipid (11.2ml)
*Used for infusion rate ≥1ml/hr*

Store syringes in fridge.
Syringes are stable at room temperature for 24 hours.

Adverse Effects

Common
Hypertriglyceridemia, hyperglycaemia, hyperbilirubinemia, abnormal LFTs, hypersensitivity reactions

Monitoring

- Serum triglyceride should be measured at baseline. Levels may be considered 1-2 days after initiation or adjustment of lipid infusion, and then performed weekly thereafter if required. More frequent monitoring may be warranted in patients at high risk of hyperlipidaemia.
- Liver function test
- Platelet count
- Glucose

Practice Points

- ESPGHAN 2018 recommends regular triglyceride monitoring in patients receiving intravenous lipid emulsion, and more frequent monitoring in cases with marked risk for hyperlipidaemia (e.g. patient with high lipid or glucose dosage, sepsis, catabolism, extremely low birth weight infants).
- ESPGHAN 2018 suggests a triglyceride concentration of 3mmol/L, taken *during infusion*, as the upper limit. Reduction of the dosage can be considered if concentrations exceed this.
- Should be given with parenteral nutrition.
- SMOFlipid® is compatible via Y-site with total parenteral nutrition, fentanyl, midazolam, morphine, dopamine.
- Use with caution in patients with sepsis or hyperbilirubinemia. Septic, acidotic and post-operative neonates will have lower requirements.
- 14%SMOFlipid with vitamins may be required in neonates with lipid intolerance. It may be ordered on request only from Fresenius Kabi® with approximate 2 day turnaround time (speak with your pharmacist).
South Australian Neonatal Medication Guidelines

SMOFlipid with vitamins
SMOF20%, SoluVit N, Vitalipid N infant (Fresenius Kabi®)

References

> Lapillonne A, ESPGHAN/ESPEN/ESPR/CSPEN guidelines on pediatric parenteral nutrition: Lipids, 2018, Clinical Nutrition

Document Ownership & History

Developed by: SA Maternal, Neonatal & Gynaecology Community of Practice
Contact: Health.NeoMed@sa.gov.au
Endorsed by: SA Health Safety and Quality Strategic Governance Committee
Next review due: 12/02/2024
ISBN number: 978-1-76083-058-8
PDS reference: CG307
Policy history:

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<th>Version</th>
<th>Who approved New/Revised Version</th>
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