SUMMARY OF PRODUCT CHARACTERISTICS

1  NAME OF THE MEDICINAL PRODUCT
Intralipid 30%

2.  QUALITATIVE AND QUANTITATIVE COMPOSITION

1000 ml of the emulsion contains:

<table>
<thead>
<tr>
<th>Active ingredient</th>
<th>Quantity</th>
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<tbody>
<tr>
<td>Purified soybean oil Ph.Eur.</td>
<td>300 g</td>
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Product properties

- Energy content: 3000 kcal (12.6 mj)/l
- Osmolality: 310 mosm/kg water
- Organic phosphate content: 15 mmol
- Triglycerides: 30 g/100 ml
- pH: approx. 8

3.  PHARMACEUTICAL FORM

Lipid emulsion for intravenous infusion.

4  CLINICAL PARTICULARS

4.1  Therapeutic indications
Intralipid should be used as part of a balanced intravenous feeding regimen in patients who are unable to receive sufficient amounts of nutrients enterally. Intralipid is especially valuable in providing a high energy intake to compensate for increased energy expenditure following trauma, infections, severe burns.

4.2  Posology and method of administration

The ability to utilise and eliminate fat should govern the dosage and infusion rate. See Fat elimination (Section 4.4)
**Adults (including the elderly)**  
*For supply of energy and essential fatty acids*

The daily supplementation of 333 ml Intralipid 30% (100 g fat) is recommended for a patient weighing 70 kg with basal energy requirements and on total parenteral nutrition. On the first day of infusion it is advisable to administer 3 ml Intralipid 30% per kg bw. The recommended maximum dosage is 3 g triglycerides/kg body weight/day.

**In essential fatty acid deficiency:**

When Intralipid 30% is administered to prevent or correct essential fatty acid deficiency, 4 to 8% of non protein calories should be supplied as Intralipid 30% to provide sufficient amounts of linoleic and linolenic acids.

When EFAD is associated with stress, the amount of Intralipid 30% needed to correct the deficiency may be substantially increased.

**Infants and children.**

There are no clinical data to support the use of Intralipid 30% in infants and children. Theoretically, tolerance of Intralipid 30% is expected to be similar to Intralipid 10% and 20%, (PL 08828/0109-0110) but until data are available Intralipid 30% should be used with caution in infants and children.

**Administration:**

Intralipid 30% should be administered by slow intravenous infusion, where the rate for the first half-hour is half the final administration rate. The infusion rate should not exceed 333 ml Intralipid 30% in 5 hours.

Intralipid 30% may be given as a separate infusion or as an admixture. When separate infusion is preferred the fat emulsion may be infused into the same central or peripheral vein as carbohydrates/ amino acid solutions by means of a Y-connector near the infusion site.

Intralipid 30% can also be given as part of an All in One admixture containing carbohydrates, amino acids, electrolytes, vitamins and trace elements. The admixture must be approved for physical stability.

As with all infusions, care should be taken to avoid complications of catheterisation including air embolism and central venous thrombosis. The risk of serious thoracic complications can be avoided by the use of a peripheral catheter. The provision of intravenous nutrition via a peripheral catheter is facilitated by the near isotonicity of Intralipid. Strict asepsis should be maintained, especially in the immunosuppressed patient.

**Monitoring:**

Electrolyte, fluid, acid-base imbalance and shock should be corrected prior to commencement of intravenous nutrition. In the metabolic and nutritional management of the seriously ill patient, specific preliminary investigations and continuous monitoring are essential, particularly of electrolyte levels. Monitoring of vitamin and trace element levels should be included, especially in patients receiving long-term intravenous nutrition.
4.3 Contraindications

Intralipid is contraindicated in severe disorders of fat metabolism such as in severe liver damage and acute shock.
Severe liver insufficiency
Haemophagocytotic syndrome.
Hypersensitivity to egg, soya or peanut protein or to any of the active substances or excipients.

4.4 Special warnings and precautions for use

Intralipid 30% should be given with caution in conditions of impaired lipid metabolism as in renal insufficiency, uncompensated diabetes mellitus, pancreatitis, impaired liver function, hypo-thyroidism (if hypertriglyceridaemic) and sepsis. Fat embolism has been reported in a few cases when the recommended infusion rate has been exceeded in these patients.

If Intralipid 30% is given to patients with these conditions, close monitoring of the serum triglyceride concentration and liver function is required.

This medicinal product contains soya-bean oil and egg phospholipids, which may rarely cause allergic reactions. Cross allergic reactions have been observed between soybean and peanut.

Intralipid 30% may interfere with certain laboratory measurements (bilirubin, lactate dehydrogenase, oxygen saturation, Hb etc) if blood is sampled before fat has been adequately cleared from the bloodstream. Fat is normally cleared after a period of 4 to 6 hours in most patients.

Fat elimination:
The ability to eliminate fat should be closely monitored in patients with conditions mentioned under special warnings but also in patients given Intralipid 30% for more than one week. This is done by collecting a blood sample after a fat clearance period of 4-6 hours. Blood cells are then separated from plasma by centrifugation (1200-1500 rotations per minute, rpm). If the plasma is opalescent the infusion should be postponed. The sensitivity of this method is such that hypertriglyceridaemia can pass undetected. Therefore, it is recommended that serum triglyceride concentration.

4.5 Interactions with other medicinal products and other forms of interaction
Some drugs, like insulin, may interfere with the body’s lipase system. However, this kind of interaction seems to be of only limited clinical importance.

Heparin in clinical doses, causes a transient increase in lipolysis in plasma, resulting in a transient decrease in triglyceride clearance due to depletion of lipoprotein lipase.

Soybean oil has a natural content of vitamin K₁. This is considered important only for patients treated with coumarin derivatives, which interfere with vitamin K₁.

4.6 Pregnancy and lactation

Animal reproduction studies have not been performed with Intralipid 30%. However, Intralipid 30% is expected to be tolerated similarly to Intralipid 10% and 20%, (PL 08828/0109-0110) on which there are published reports on safe and successful administration during pregnancy in the human.

4.7 Effects on ability to drive and use machines

Not applicable.

4.8 Undesirable effects

In rare instances initial administration of Intralipid has produced a rise in temperature, and less frequently, shivering, chills and nausea/vomiting (incidence < 1%).

Other adverse event reports are extremely rare, occurring in less than one in one million infusions.

The following have been described occurring immediately or soon after commencing infusion: Hypersensitivity reactions (anaphylaxis, skin rash, urticaria), respiratory symptoms (e.g.tachypnoea), circulatory effects(e.g. hyper/hypotension),haemolysis, reticulocytosis, abdominal pain, headache, tiredness and priapism.

Increased levels of transaminases, alkaline phosphatase and bilirubin have been observed in patients receiving intravenous nutrition, with or without Intralipid. Cholestasis has also been reported. These changes are reversible and usually return to normal when intravenous nutrition is interrupted.
Thrombocytopenia has been reported in association with prolonged treatment with Intralipid in infants.

4.9 Overdose

Overdose leading to fat overload syndrome may occur, acutely as a result of too rapid an infusion rate, or chronically at recommended rates of infusion in association with a change in the patients clinical condition, e.g. renal function impairment or infection. Fat overload syndrome is characterised by hyperlipaemia, fever, fat infiltration, organ dysfunction and coma. All symptoms are usually reversible if the infusion is discontinued.

5. PHARMACOLOGICAL PROPERTIES

5.1 Pharmacodynamic properties

Intralipid is a concentrated energy source for complete intravenous nutrition. Provision of a sufficient amount of energy in the form of carbohydrate is often restricted by such considerations as hypertonicity, hypervolaemia, tendency to thrombophlebitis and the limit beyond which further carbohydrate cannot be utilised. By the use of Intralipid it is possible to provide a high energy intake in a relatively small volume.

Intralipid is a rich source of the essential fatty acids, linoleic and linolenic acids. It has a protein sparing effect when given in conjunction with amino acid and carbohydrate solutions.

The pharmacodynamic effects of Intralipid 30% are limited due to the nature of the product. No significant effects were observed in cardiovascular parameters in the anaesthetised cat over 3.5 hours. In comparison, the recommended dose in man is up to 3 g fat/kg bw/24 hours. At considerably higher doses, (e.g. 9.75 g fat/kg/2 hours) blood flow was decreased to approximately 76±6% of the preinfusion flow but there was no significant effect on blood pressure. The pharmacodynamic profile is comparable with Intralipid 10% and 20%, (PL 08828/0109-0110).

5.2 Pharmacokinetic properties

The elimination of Intralipid 30% is comparable with Intralipid 10% and 20%, (PL08828/0109-0110). Intralipid, which is administered intravenously, is distributed within the blood vessels. It is eliminated from the blood stream by the enzyme lipoprotein lipase (LPL) and after association with apolipoproteins
is metabolised in a similar way to chylomicrons. The half-life is approximately 9.00 ± 0.64 minutes and the clearance mechanism is concentration dependent, with saturation above 1.1 mm in blood, which corresponds to a dose of approximately 0.1 g fat/kg bw. Below this concentration elimination follows first order kinetics. Intralipid as such is not excreted. The metabolites, carbon dioxide, water and phosphate are excreted via lungs, lungs and urine and urine respectively.

5.3 Preclinical safety data

During the preclinical animal studies there were no findings, which were of relevance to the prescriber, in relation to the safety profile of Intralipid 30%. The pharmaco-toxicological properties of Intralipid 30% are comparable to Intralipid 10% and 20%, (PL 08828/0109-0110).

6. PHARMACEUTICAL PARTICULARS

6.1 List of excipients

Purified egg phospholipids
Glycerol
Sodium hydroxide
Water for injections

6.2 Incompatibilities

Additives may only be added to Intralipid 30% where compatibility is known. Such mixing must follow defined formulae and mixing techniques, details of which are available on request from the manufacturer. The following additions can be recommended: Vitlipid N Adult or Vitlipid N Infant, Solivito N (see Solivito N data sheet for details of reconstitution).

6.3 Shelf life

The shelf life is 24 months.

6.4 Special precautions for storage
Store below 25°C. Do not freeze.

6.5 **Nature and contents of container**

**Infusion bottle**

Type II glass and butyl rubber stopper.

- All packaging components are latex- and PVC-free.

Package sizes:
- 100 ml (12x100 ml)
- 333 ml (12x333 ml)
- 500 ml (12x500 ml)

**Infusion bag**

The container consists of an inner bag and an overpouch. An oxygen absorber and integrity indicator are placed between the inner bag and the overpouch. The inner bag is the primary container for Intralipid. The overpouch provides protection during storage by contributing with barrier properties towards water and oxygen to the Intralipid container system. The oxygen absorber will absorb and bind oxygen remaining between the inner bag and the overpouch. The integrity indicator will react with free oxygen and change from clear to black in case of a damaged overpouch.

The inner bag is made of a multilayer polymer film, alternatively Excel or Biofine

- The Excel inner bag film consists of poly(propylene/ethylene) copolymer, thermoplastic elastomer (SEBS) and copolyester. The port system consists of poly(propylene/ethylene) copolymer and thermoplastic elastomer (SEBS). The infusion port is equipped with a polyolefin cap. The additive port is equipped with a synthetic polyisoprene (latex-free) stopper.

- The Biofine inner bag film consists of poly(propylene/ethylene) copolymer and thermoplastic elastomers (SEBS and SIS). The infusion and additive ports are made of polypropylene and a thermoplastic elastomer (SEBS) equipped with synthetic polyisoprene stoppers.

The oxygen barrier overpouch consists of polyolefin and polyethylene terephthalate or polyolefin, polyethylene terephthalate and poly(ethyl vinyl) alcohol (EVOH).

The oxygen absorber consists of iron powder in a polymer sachet.

The integrity indicator (OxalertTM) consists of an oxygen sensitive solution in a polymer sachet.

All packaging components are latex- and PVC-free.
6.6 Special precautions for disposal

Do not use the if package is damaged.

For infusion bag: The integrity indicator (OxalertTM) should be inspected before removing the overpouch. If the indicator is black, oxygen has penetrated the overpouch and the product should be discarded. The overpouch, the oxygen absorber and the integrity indicator should be discarded after opening of the overpouch.

Additions should be made aseptically. Single administration of electrolyte solutions to INTRALIPID should not be made. Only medicinal, nutritional or electrolyte solutions for which compatibility has been documented may be added as directed. Compatibility data are available from the manufacturer for a number of mixtures.

The left over contents of opened bottles / bags should be discarded and not saved for later use.

Apart from information provided elsewhere in the SPC, there are no special instructions on handling of the product.

Discard any unused portion.

Do not reconnect partially used bags

7 MARKETING AUTHORISATION HOLDER

Fresenius Kabi Limited
Cestrian Court
Eastgate Way
Manor Park
Runcorn
Cheshire
WA7 1NT

8. MARKETING AUTHORISATION NUMBER

PL 08828/0111

9. DATE OF FIRST AUTHORISATION/RENEWAL OF THE AUTHORISATION

3rd June 1999 Date of Grant
DATE OF REVISION OF THE TEXT

14/05/2012