

## Part II

### Summary of Product Characteristics

#### 1 NAME OF THE MEDICINAL PRODUCT

Intralipid 30 %, 333 ml Emulsion for Infusion.

#### 2 QUALITATIVE AND QUANTITATIVE COMPOSITION

Purified soybean oil 30.0% w/v.

For excipients, see 6.1.

#### 3 PHARMACEUTICAL FORM

Emulsion for infusion.

A sterile milky white oil-in-water emulsion.

#### 4 CLINICAL PARTICULARS

##### 4.1 Therapeutic Indications

In the supply of caloric and essential fatty acid requirements in parenteral nutrition.

##### 4.2 Posology and method of administration

For intravenous infusion.

The dosage and infusion rate should be within the ranges recommended below and should be governed by the patient's ability to utilise fat.

###### *Adults (including the elderly)*

###### For supply of energy and essential fatty acids

The daily supplementation of 333 ml Intralipid 30% (100g fat) is recommended for a patient weighing 70kg 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 3g triglycerides/kg bw/day.

###### *In essential fatty acid deficiency*

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

When essential fatty acid deficiency 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 the tolerance of intralipid 30% is expected to be similar to intralipid 10% and 20% but until data are available, Intralipid 30% should be used with caution in infants and children.

The rate given are maximum rates and no attempt should be made to exceed these in order to compensate for missed doses.

*Elderly*

Age per requires no adjustment of the adult dosage. However, caution should be exercised I the “frail” elderly an indeed in all patients with poor renal, cardiac or liver function, where smaller volumes should be used depending on the individual’s requirements and condition.

*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.

**4.3 Contraindications**

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

**4.4 Special warnings and precautions for use**

Where shock, metabolic acidosis or severe dehydration is present, the condition should be corrected before commencement of intravenous feeding.

Catheters for IV feeding should be placed using strict aseptic technique with proper fixation and dressing and X-ray confirmation. Asepsis should be maintained during changes of tubing and dressing and use of catheter should be confined to IV feeding alone.

Patients receiving these infusions may suffer from air embolism, pneumothorax, central venous thrombosis, brachial plaxus or thoracic duct injury, catheter-linked sepsis, subdural haematoma (due to anti-coagulants) and infusion thrombophlebitis. Care should be taken to avoid these complications. Immunosuppressed patients are particularly prone to infections.

Abnormalities of liver function tests and cholestasis have been observed in patients including infants receiving total parenteral nutrition. Intralipid may interfere with certain laboratory measurements (bilirubin, lactate hydrogenase, oxygen saturation, Hb etc) if blood is sampled before fat is adequately cleared from the blood stream. Fat is cleared after a fat free interval of 4 to 6 hours in most patients.

Infusion of 10% fat emulsion has been associated with the development of abnormal lipoprotein, the formation of which is dependent on the dose and duration of the infusion.

Amino-acid and carbohydrate infusion should accompany that of fat emulsion to avoid acidosis.

Intralipid should be given with caution in conditions of impaired lipid metabolism such as renal insufficiency, uncompensated diabetes mellitus, pancreatitis, certain forms of liver insufficiency, hypothyroidism (if hyperglyceridaemic), metabolic disorders and sepsis. Fat embolism has been reported in a few cases when the recommended infusion rate has been exceeded in these patients. Fat elimination should be checked daily if intravenous fat is considered for administration to such patients.

In newborns with neonatal hyperbilirubinaemia, Intralipid should be used with caution, especially in low birth weight infants, because of the risk of free fatty acids displacing bilirubin from albumin.

Intralipid should be administered with caution to infants with known or suspected pulmonary hypertension.

In neonates, particularly prematures on long term parenteral nutrition, platelet count, liver function tests and serum triglyceride concentrations should be monitored.

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.

#### *Fat Elimination*

The ability to eliminate fat should be closely monitored in patients with conditions mentioned under Precautions and Warnings (this section), but also in patients given Intralipid for more than one week. This is done by collecting a blood sample after a fat-free 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 the method is such that hypertriglyceridaemia can pass undetected. Therefore, it is recommended that serum triglyceride concentrations are measured in patients who are likely to have an impaired fat tolerance.

### **4.5 Interaction with other medicinal products and other forms of interaction**

Some drugs, like insulin, may interfere with 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 due to depletion of lipoprotein lipase.

Soybean oil has a natural content of vitamin K<sub>1</sub>. This is considered important only for patients treated with coumarin derivatives which interfere with vitamin K<sub>1</sub>.

### **4.6 Pregnancy and lactation**

Animal reproduction studies have not been carried out with Intralipid. There are, however, published reports of its successful and safe administration during pregnancy in the human.

### **4.7 Effects on ability to drive and use machines**

None stated.

### **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%). Infusion of Intralipid should be discontinued in such cases. Other adverse event reports are extremely rare, occurring in less than one in one million infusions.

The following have been reported 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 transaminase, alkaline phosphatases and bilirubin have been observed in patients receiving intravenous nutrition, with or without Intralipid. If the dosage is reduced values usually return to normal. Cholestasis has also been reported.

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 patient's clinical condition, e.g. renal function impairment or infection. Fat overload syndrome is characterised by hyperlipidaemia, fever 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 are limited due to the nature of the product. Intralipid is intended to be a substitute for the naturally occurring chylomicrons which enter the blood stream after gastrointestinal absorption of the fat.

### **5.2 Pharmacokinetic properties**

Intralipid is metabolised in a similar way to chylomicrons.

### **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.

## **6 PHARMACEUTICAL PARTICULARS**

### **6.1 List of excipients**

Purified egg phospholipids  
Glycerol  
Sodium hydroxide  
Water for injections

### **6.2 Incompatibilities**

This medicinal product must not be mixed with other medicinal products except those mentioned in section 6.6.

### **6.3 Shelf Life**

2 years.

### **6.4 Special precautions for storage**

Do not store above 25°C.

Do not freeze.

### **6.5 Nature and contents of container**

Glass bottles (Type II) with butyl rubber stopper, containing 333 ml of emulsion.

### **6.6 Special precautions for disposal of a used medicinal product or waste materials derived from such medicinal product and other handling of the product**

Additives may only be added to Intralipid 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 on reconstitution).

Any fluid remaining after an infusion must be discarded.

## **7 MARKETING AUTHORISATION HOLDER**

Fresenius Kabi Limited  
Cestrian Court  
Eastgate Way  
Runcorn  
Cheshire  
WA7 1NT  
United Kingdom

## **8 MARKETING AUTHORISATION NUMBER**

PA 0566/019/007

## **9 DATE OF FIRST AUTHORISATION/RENEWAL OF THE AUTHORISATION**

Date of first authorisation: 27<sup>th</sup> April 1994

Date of last renewal: 27<sup>th</sup> April 2004

## **10 DATE OF REVISION OF THE TEXT**

October 2006