

DIRECTIONS FOR USE

B. Braun Melsungen AG · 34209 Melsungen, Germany

Aminoplasma[®] Hepa – 10% Solution for Infusion

1. NAME OF THE MEDICINAL PRODUCT

Aminoplasma Hepa – 10 % Solution for Infusion

2. QUALITATIVE AND QUANTITATIVE COMPOSITION

1000 ml of solution contains

Isoleucine	8.80 g
Leucine	13.60 g
Lysine acetate (equivalent to lysine)	10.60 g 7.51 g
Methionine	1.20 g
Phenylalanine	1.60 g
Threonine	4.60 g
Tryptophan	1.50 g
Valine	10.60 g
Arginine	8.80 g
Histidine	4.70 g
Glycine	6.30 g
Alanine	8.30 g
Proline	7.10 g
Aspartic acid	2.50 g
Asparagine monohydrate (equivalent to asparagine)	0.55 g 0.48 g
Acetylcysteine (equivalent to cysteine)	0.80 g 0.59 g
Glutamic acid	5.70 g
Ornithine hydrochloride (equivalent to ornithine)	1.66 g 1.30 g
Serine	3.70 g
Acetyltyrosine (equivalent to tyrosine)	0.86 g 0.70 g

Electrolyte concentrations:

Acetate	51 mmol/l
Chloride	10 mmol/l
Total amino acids	100 g/l
Total nitrogen	15.3 g/l

Excipient(s) with known effect:

This medicinal product contains 0.3 to 2.3 mmol sodium per 1000 ml.

For the full list of excipients, see section 6.1.

3. PHARMACEUTICAL FORM

Solution for infusion.

Clear, colourless up to faintly straw-coloured aqueous solution.

Energy	1675 kJ/l \pm 400 kcal/l
Theoretical osmolarity	875 mOsm/l
pH	5.5 – 6.5

4. CLINICAL PARTICULARS

4.1 Therapeutic indications

Supply of amino acids as part of parenteral nutrition in patients with severe liver insufficiency with moderate to severe hepatic encephalopathy or acute or subacute liver failure.

For adults, adolescents and children over 2 years of age.

4.2 Posology and method of administration

Posology

The dosage has to be adjusted according to the individual need of amino acids and fluid, depending on the clinical condition of the patient (nutritional status and/or degree of nitrogen catabolism due to underlying disease).

Adults

Daily dose:

0.8 – 1.5 g of amino acids/kg body weight	\triangleq 8 – 15 ml/kg body weight
	\triangleq 560 – 1050 ml for a 70 kg patient

Maximum infusion rate:

0.1 g amino acids/kg body weight/h	\triangleq 1 ml/kg body weight/h
	\triangleq 1.17 ml/min for a 70 kg patient

Paediatric population

Newborn infants, infants and toddlers less than two years of age

Aminoplasma Hepa 10% is contraindicated in newborn infants, infants and toddlers less than 2 years of age (see section 4.3).

Children and adolescents

The safety and efficacy of Aminoplasma Hepa 10% in children have not yet been established. Currently available data are described in section 4.4 but no recommendation on a posology can be made.

Duration of use:

This solution can be administered as long as the clinical condition of the patient makes this necessary or until the amino acid imbalances of the patient have normalized.

Method of administration

Intravenous use.

For central venous infusion only.

4.3 Contraindications

- Hypersensitivity to the active substances or to any of the excipients listed in section 6.1
- Inborn errors of amino acid metabolism
- Severe circulation disorders with vital risk (e.g. shock)
- Hypoxia
- Metabolic acidosis
- Severe renal insufficiency in absence of renal replacement therapy
- Decompensated cardiac insufficiency
- Acute pulmonary oedema
- Disturbances of the electrolyte and fluid balance

The medicinal product must not be administered to newborn infants, infants and toddlers less than two years of age, because the amino acid composition does not properly meet the special requirements of this paediatric age group.

Because of the particulars of its composition, Aminoplasma Hepa – 10 % may cause marked metabolic disturbances if given outside the indications stated in section 4.1 "Unindicated use must strictly be avoided".

4.4 Special warnings and precautions for use

The medicinal product should only be administered after careful benefit-risk assessment in the presence of disorders of amino acid metabolism of other origin than stated under section 4.3.

Because of its composition, Aminoplasma Hepa – 10 % should be administered to patients with concomitant renal insufficiency only after individual benefit/risk assessment. The dose should be adjusted according to the serum urea and creatinine concentrations.

Care should be exercised in the administration of large volume infusion fluids to patients with cardiac insufficiency.

Caution should be exercised in patients with increased serum osmolarity.

Disturbances of fluid and electrolyte balance (e.g. hypotonic dehydration, hyponatraemia, hypokalaemia) should be corrected prior to the administration of parenteral nutrition.

Serum electrolytes, blood glucose, fluid balance, acid-base balance and renal function should be monitored regularly.

Monitoring should also include serum protein and liver function tests.

Amino acid therapy is not a substitute for established therapeutic measures, such as purging, administration of lactulose and/or gut sterilizing antibiotics, in the treatment of hepatic encephalopathy.

Amino acid solutions are only one component of parenteral nutrition. For complete parenteral nutrition, substrates for non-protein energy supply, essential fatty acids, electrolytes, vitamins, fluids and trace elements must be administered together with amino acids.

This medicinal product contains 6.9 mg to 52.9 mg sodium per 1000 ml, equivalent to 0.3 to 2.6 % of the WHO recommended maximum daily intake of 2 g sodium for an adult.

4.5 Interaction with other medicinal products and other forms of interaction

None known.

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4.6 Fertility, pregnancy and lactation

Pregnancy

There are no or limited amount of data from the use of Aminoplasmal Hepa 10% in pregnant women. The use of Aminoplasmal Hepa - 10 % may be considered during pregnancy, if necessary.

Breast-feeding

Amino acids/metabolites are excreted in human milk, but at therapeutic doses of Aminoplasmal Hepa 10% no effects on the breastfed newborns/infants are anticipated. Nevertheless, breast-feeding is not recommended for mothers on parenteral nutrition.

Fertility

No data available.

4.7 Effects on ability to drive and use machines

Not relevant.

4.8 Undesirable effects

Undesirable effects that, however, are not specifically related to the product but to parenteral nutrition in general may occur, especially at the beginning of parenteral nutrition.

Undesirable effects are listed according to their frequencies as follows:

Very common	(≥ 1/10)
Common	(≥ 1/100 to < 1/10)
Uncommon	(≥ 1/1,000 to < 1/100)
Rare	(≥ 1/10,000 to < 1/1,000)
Very rare	(< 1/10,000)
Not known	(frequency cannot be estimated from the available data)

Immune system disorders

Not known: Allergic reactions

Gastrointestinal disorders

Uncommon: Nausea, vomiting

4.9 Overdose

Symptoms of fluid overdose

Overdose or too high infusion rates may lead to hyperhydration, electrolyte imbalance and pulmonary oedema.

Symptoms of amino acid overdose

Overdose or too high infusion rates may lead to intolerance reactions manifesting in the form of sickness, vomiting, shivering, headache, metabolic acidosis, hyperammonaemia and renal amino acid losses.

Treatment

If intolerance reactions occur, the amino acid infusion must be interrupted temporarily and resumed later on at a lower infusion rate.

5. PHARMACOLOGICAL PROPERTIES

5.1 Pharmacodynamic properties

Pharmacotherapeutic group:

Blood substitutes and perfusion solutions, i.v. solutions for parenteral nutrition, amino acids.

ATC code: B05B A01

By administration of Aminoplasmal Hepa - 10 % with its amino acid composition specifically adapted to the pathologically altered metabolism of patients with liver cirrhosis, normalisation of amino acid imbalances can be achieved. Thus the cerebral manifestations of the disease, i.e. hepatic encephalopathy or hepatic precoma or coma are relieved and protein tolerance and protein biosynthesis are markedly improved.

Mechanism of action

The aim of parenteral nutrition is the supply of all nutrients necessary for the growth, maintenance and regeneration of body tissues etc.

Amino acids are of special importance as they partly are essential for protein synthesis. Intravenously administered amino acids are incorporated in the respective intravascular and intracellular amino acid pools.

Both endogenous and exogenous amino acids serve as substrate for the synthesis of functional and structural proteins.

To prevent the metabolisation of amino acids for energy production, and also to fuel the other energy-consuming processes in the organism, simultaneous non-protein energy supply (in the form of carbohydrates or fats) is necessary.

5.2 Pharmacokinetic properties

Absorption

Because this medicinal product is infused intravenously, the bio-availability of the amino acids contained in the solution is 100%.

Distribution

Amino acids are incorporated in a variety of proteins in different tissues of the body. In addition each amino acid is present as free amino acid in the blood and inside cells.

The composition of the amino acid solution is based upon the results of clinical investigations of the metabolism of intravenously administered amino acids. The quantities of the amino acids contained in the solution have been chosen so that a homogenous increase of the concentrations of all plasma amino acids is achieved. The physiological ratios of plasma amino acids,

i.e. the amino acid homeostasis, are thus maintained during infusion of the medicinal product.

Normal foetal growth and development depend on a continuous supply of amino acids from the mother to the foetus. The placenta is responsible for the transfer of amino acids between the two circulations.

Biotransformation

Amino acids that do not enter protein synthesis are metabolised as follows: The amino group is separated from the carbon skeleton by transamination. The carbon chain is either oxidised directly to CO₂ or utilised as substrate for gluconeogenesis in the liver. The amino group is also metabolised in the liver to urea.

Elimination

Only minor amounts of amino acids are excreted unchanged in the urine.

5.3 Preclinical safety data

Non-clinical data available for the single components of the medicinal product reveal at common dosages no special hazard for humans based on conventional data of safety pharmacology, repeated dose toxicity, genotoxicity, carcinogenic potential, toxicity to reproduction and development. Therefore, no toxic reactions are expected to occur as long as the indications, contraindications and dosage recommendations are duly observed.

6. PHARMACEUTICAL PARTICULARS

6.1 List of excipients

Sodium hydroxide or hydrochloric acid (for pH adjustment)
Disodium edetate
Water for injections

6.2 Incompatibilities

Aminoplasmal Hepa 10% can only be mixed with other nutrients such as carbohydrates, lipids, vitamins and trace elements for which compatibility has been documented.

Compatibility data for different additives (e.g. electrolytes, trace elements, vitamins) and the corresponding shelf life of such admixtures can be provided on demand by the manufacturer. See also section 6.6.

6.3 Shelf life

Unopened

3 years

After first opening the container

The medicinal product should be used immediately.

After admixture of additives

From a microbiological point of view, mixtures should be administered immediately after preparation. If not administered immediately, storage times and conditions of mixtures prior to use are the responsibility of the user and would normally not be longer than 24 hours at 2°C – 8°C, unless mixing has taken place under controlled and validated aseptic conditions.

6.4 Special precautions for storage

Do not store above 25 °C.

Keep the bottle in the outer carton in order to protect from light.

Do not freeze.

6.5 Nature and contents of container

Bottles of colourless glass (type II) sealed with elastomeric stoppers, containing 500 ml of solution.

Pack sizes: 10 x 500 ml

Not all pack sizes may be marketed.

6.6 Special precautions for disposal and other handling

No special requirements for disposal.

Containers are for single use only. Discard container and any unused contents after use.

Only to be used if the solution is clear and colourless up to faintly straw-coloured and the bottle and its closure are undamaged.

Use a sterile giving set for administration.

If in the setting of complete parenteral nutrition it is necessary to add other nutrients such as carbohydrates, lipids, vitamins, electrolytes and trace elements to this medicinal product, admixing must be performed under strict aseptic conditions. Mix well after admixture of any additive. Pay special attention to compatibility.

7. DATE OF REVISION OF THE TEXT

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