CSL Behring

Human Albumin 20% Solution

Solution for infusion

1. NAME OF THE MEDICINAL PRODUCT
   Human Albumin 20% Solution, 200 g/l, solution for infusion

2. QUALITATIVE AND QUANTITATIVE COMPOSITION
   Human Albumin 20% Solution is a solution containing 200 g/l of total human plasma protein of which at least 96% is human albumin. Human Albumin 20% Solution is hyperoncotic to normal plasma.

For a full list of excipients, see section 6.1.

3. PHARMACEUTICAL FORM
   Solution for infusion.
   A clear, slightly viscous liquid; it is almost colourless, yellow, amber or green.

4. CLINICAL PARTICULARS

4.1 Therapeutic indications
   Restoration and maintenance of circulating blood volume where volume deficiency has been demonstrated and use of a colloid is appropriate.

   The choice of albumin rather than artificial colloid will depend on the clinical situation of the individual patient, based on official recommendations.

4.2 Posology and method of administration
   The concentration of the albumin preparation, dosage and the infusion rate should be adjusted to the patient’s individual requirements.

   Posology
   The dose required depends on the size of the patient, the severity of trauma or illness and on continuing fluid and protein losses. Measures of adequacy of circulating volume and not plasma albumin levels should be used to determine the dose required.

   If human albumin is to be administered, haemodynamic performance should be monitored regularly, this may include:
   • arterial blood pressure and pulse rate
   • central venous pressure
   • pulmonary artery wedge pressure
   • urine output
   • electrolyte
   • haematocrit / haemoglobin

   Method of administration
   Human albumin should be administered by the intravenous route only. The solution can be administered either directly or it can first be diluted with an isotonic solution (e.g. 5% glucose or 0.9% sodium chloride).

   The infusion rate should be adjusted according to the individual circumstances and the indication, but should normally not exceed 1–2 ml/min. In plasma exchange the infusion rate should be adjusted to the rate of removal.

4.3 Contraindications
   Hypersensitivity to albumin preparations or to any of the excipients.

4.4 Special warnings and precautions for use
   SUSPENSION OF ALLERGIC OR ANAPHYLACTIC TYPE REACTIONS REQUIRES IMMEDIATE DISCONTINUATION OF THE INFUSION. IN CASE OF SHOCK, STANDARD MEDICAL TREATMENT FOR SHOCK SHOULD BE IMPLEMENTED.

   Albumin should be used with caution in conditions where hypervolaemia and its consequences or haemodilution could represent a special risk for the patient. Examples of such conditions are:
   • decompensated cardiac insufficiency
   • hypertension
   • oesophageal varices
   • pulmonary oedema
   • haemorrhagic diathesis
   • severe anaemia
   • renal and post-renal anuria

   The colloid-osmotic effect of human albumin 200 g/l is approximately four times that of blood plasma. Therefore, when concentrated albumin is administered, care must be taken to assure adequate hydration of the patient. Patients should be monitored carefully to guard against circulatory overload and hyperhydration.

   If comparatively large volumes are to be replaced, controls of coagulation and haematocrit are necessary. Care must be taken to ensure adequate substitution of other blood constituents (coagulation factors, electrolytes, platelets and erythrocytes).

   Hypervolaemia may occur if the dosage and infusion rate are not adjusted to the patient’s circulatory situation. At the first clinical signs of cardiovascular overload (headache, dyspnoea, jugular vein congestion), or increased blood pressure, raised venous pressure and pulmonary oedema, the infusion is to be stopped immediately and the patient’s haemodynamic parameters carefully monitored.

   Standard measures to prevent infections resulting from the use of medicinal products prepared from human blood or plasma include selection of donors, screening of individual donations and plasma pools for specific markers of infection and the inclusion of effective manufacturing steps for the inactivation/removal of viruses.

   There are no reports of proven virus transmissions with albumin manufactured to European Pharmacopoeia specifications by established processes.

   It is strongly recommended that every time that Human Albumin 20% Solution is administered to a patient, the name and batch number of the product are recorded in order to maintain a link between the patient and the batch of the product.

4.5 Interaction with other medicinal products and other forms of interaction
   No specific interactions of human albumin with other medicinal products are known.

4.6 Pregnancy and lactation
   The safety of Human Albumin 20% Solution for use in human pregnancy has not been established in controlled clinical trials. However, clinical experience with albumin suggests that no harmful effects on the course of pregnancy, or on the foetus and the neonate are to be expected. No animal reproduction studies have been conducted with Human Albumin 20% Solution. However, human albumin is a normal constituent of human blood.
4.7 Effects on ability to drive and use machines
No effects on the ability to drive and use machines have been observed.

4.8 Undesirable effects
Mild reactions such as flush, urticaria, fever and nausea occur rarely. These reactions normally disappear rapidly when the infusion rate is slowed down or the infusion is stopped. Very rarely, severe reactions such as shock may occur. In these cases, the infusion should be stopped immediately and an appropriate treatment should be initiated. For safety with respect to transmissible agents, see section 4.4.

4.9 Overdose
Hypervolaemia may occur if the dosage and infusion rate are too high. At the first clinical signs of cardiovascular overload (headache, dyspnoea, jugular vein congestion) or increased blood pressure, raised central venous pressure and pulmonary oedema, the infusion should be stopped immediately and the patient’s haemodynamic parameters carefully monitored.

5. PHARMACOLOGICAL PROPERTIES
5.1 Pharmacodynamic properties
Pharmacotherapeutic group: plasma substitutes and plasma protein fractions, ATC code: B05AA01.
Human albumin accounts quantitatively for more than half of the total protein in the plasma and represents about 10% of the protein synthesis activity of the liver.
Physico-chemical data: human albumin 200 g/l has a corresponding hyperoncotic effect.
The most important physiological functions of albumin results from its contribution to oncotic pressure of the blood and transport function. Albumin stabilises circulating blood volume and is a carrier of hormones, enzymes, medicinal products and toxins.

5.2 Pharmacokinetic properties
Under normal conditions, the total exchangeable albumin pool is 4–5 g/kg body weight, of which 40–45% is present intravascularly and 55–60% in the extravascular space. Increased capillary permeability will alter albumin kinetics and abnormal distribution may occur in conditions such as severe burns or septic shock.
Under normal conditions, the average half-life of albumin is about 19 days. The balance between synthesis and breakdown is normally achieved by feedback regulation. Elimination is predominantly intracellular and due to lysosome proteases.

In healthy subjects, less than 10% of infused albumin leaves the intravascular compartment during the first 2 hours following infusion. There is considerable individual variation in the effect on plasma volume. In some patients the plasma volume can remain increased for some hours. However, in critically ill patients, albumin can leak out of the vascular space in substantial amounts at an unpredictable rate.

5.3 Preclinical safety data
Human albumin is a normal constituent of human plasma and acts like physiological albumin.
In animals, single dose toxicity testing is of little relevance and does not permit the evaluation of toxic or lethal doses or of a dose-effect relationship. Repeated dose toxicity testing is impracticable due to the development of antibodies to heterologous protein in animal models.
To date, human albumin has not been reported to be associated with embroyofoetal toxicity, oncogenic or mutagenic potential. No signs of acute toxicity have been described in animal models.

6. PHARMACEUTICAL PARTICULARS
6.1 List of excipients
Sodium N-acetyltryptophanate
Sodium caprylate
Sodium chloride
Water for injections

Human Albumin 20% Solution complies with the European Pharmacopoeia upper limit for aluminium content of human albumin solutions for infusions (≤ 200 µg/l).

6.2 Incompatibilities
Human albumin must not be mixed with other medicinal products (except those mentioned in 6.6), whole blood and packed red cells.

6.3 Shelf life
3 years.
The product may not be used beyond the expiration date mentioned on the container label.

6.4 Special precautions for storage
Do not store above +25 °C. Do not freeze. Keep the infusion bottle in the outer carton in order to protect from light.

6.5 Nature and contents of container
Human Albumin 20% Solution is provided in 50 ml and 100 ml infusion bottles, glass type II (Ph.Eur.). Not all pack sizes may be marketed.

6.6 Special precautions for disposal and other handling
The solution should be administered by the intravenous route only. The solution can be administered either directly or it can first be diluted with an isotonic solution (e.g. 5% glucose or 0.9% sodium chloride).
Albumin solutions must not be diluted with water for injections as this may cause haemolysis in recipients. If large volumes are administered, the product should be warmed to room or body temperature before use.
Do not use solutions which are cloudy or have deposits. This may indicate that the protein is unstable or that the solution has become contaminated.
Once the container has been opened, the contents should be used immediately. Any unused product or waste material should be disposed of in accordance with local requirements.

7. DATE OF REVISION OF THE TEXT
August 2007

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04598/609/17010