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ALBUMIN (HUMAN) U.S.P.
ALBUTEIN®
25% Solution

DESCRIPTION:

ALBUMIN (HUMAN) U.S.P., ALBUTEIN® 25% solution is a sterile aqueous solution for single dose intravenous administration containing 25% human albumin (weight/volume). ALBUTEIN® is prepared by a cold alcohol fractionation method from pooled human plasma obtained from venous blood. The product is stabilized with 0.08 millimole sodium caprylate and 0.08 millimole sodium acetyltryptophanate per gram of albumin. ALBUTEIN® 25% solution is osmotically equivalent to five times its volume of normal human plasma. ALBUTEIN® 25% solution contains 130-160 milliequivalents of sodium ion per liter and has a pH of 6.9 ± 0.5. The product contains no preservatives. ALBUTEIN® is heated at 60 °C for ten hours. No positive assertion can be made, however, that this heat treatment completely destroys the causative agents of viral hepatitis.

CLINICAL PHARMACOLOGY:

There are no known cases of viral hepatitis which have resulted from the administration of ALBUMIN (HUMAN) U.S.P., ALBUTEIN®. Albumin is a highly soluble, globular protein (MW 66,500), accounting for 70-80% of the colloid osmotic pressure of plasma. Therefore, it is important in regulating the osmotic pressure of plasma.[1,2] ALBUTEIN® 25% solution supplies the oncotic equivalent of approximately 5 times its volume of human plasma. It will increase the circulating plasma volume by an amount approximately 3.5 times the volume infused within 15 minutes, if the recipient is adequately hydrated.[3] This extra fluid reduces hemoconcentration and decreases blood viscosity. The degree and duration of volume expansion depend upon the initial blood volume. When treating patients with diminished blood volume, the effect of infused albumin may persist for many hours. The hemodilution lasts for a shorter time when albumin is administered to individuals with normal blood volume.

Albumin is also a transport protein and binds naturally occurring, therapeutic, and toxic materials in the circulation.[2]

Albumin is distributed throughout the extracellular water and more than 60% of the body albumin pool is located in the extravascular fluid compartment. The total body albumin in a 70 kg man is approximately 320 g; it has a circulating life span of 15-20 days, with a turnover of approximately 15 g per day.[1]

INDICATIONS AND USAGE:

ALBUMIN (HUMAN) U.S.P., ALBUTEIN® 25% Solution is indicated:

a. For treatment of hypovolemic shock.[2,4]
b. As an adjunct in hemodialysis for patients undergoing long-term dialysis or for those patients who are fluid-overloaded and cannot tolerate substantial volumes of salt solution for therapy of shock or hypotension.[1]
c. In cardiopulmonary bypass procedures; however, the optimum regimen of fluids has not been established.

Conditions in which Albumin (Human) U.S.P. 25% solution **MAY BE** indicated:

- Adult respiratory distress syndrome (ARDS).[1,5]
- Major injury or surgery resulting in increased albumin loss or inadequate synthesis.[1,6]
- Acute nephrosis not responding to cyclophosphamide or steroid therapy. Steroid therapy may increase edema which may respond to combined therapy of albumin with a diuretic.[1]
- Acute liver failure or ascites where the therapeutic use is regulated by the individual circumstances.[1]

Unless the pathologic condition responsible for hypoalbuminemia can be corrected, administration of albumin can afford only symptomatic relief. There is **NO** valid reason for the use of albumin as an intravenous nutrient.

Pediatric Use: Albumin (Human) U.S.P. 25% Solution is indicated in conjunction with exchange transfusion in the treatment of neonatal hyperbilirubinemia. The pediatric use of ALBUMIN (HUMAN) U.S.P., ALBUTEIN®, has not been clinically evaluated. Therefore, physicians should weigh the risks and benefits of the use of Albumin (Human) in the pediatric population.

CONTRAINDICATIONS:

ALBUTEIN® is contraindicated in patients with severe anemia or cardiac failure in the presence of normal or increased intravascular volume.

The use of ALBUTEIN® is contraindicated in patients with a history of allergic reactions to this product.

WARNINGS:

Following reports that there exists a risk of potentially fatal hemolysis and acute renal failure from the inappropriate use of Sterile Water for Injection as a diluent for Albumin (Human)[7], if dilution is required, acceptable diluents include 0.9% Sodium Chloride or 5% Dextrose in Water.[8]

Albumin (Human), U.S.P., Albutein® 25% is made from pooled human plasma. Based on effective donor screening and product manufacturing processes, it carries an extremely remote risk for transmission of viral diseases, including a theoretical risk for transmission of Creutzfeldt-Jakob disease (CJD). Although no cases of transmission of viral diseases or CJD have ever been identified for albumin, the risk of infectious agents cannot be totally eliminated. ALL infections thought by a physician possibly to have been transmitted by this product should be reported to the manufacturer at 1-888-675-2762 (US) or 1-323-225-9735 (international). The physician should weigh the risks and benefits of the use of this product and should discuss these with the patient.

Solutions of ALBUMIN (HUMAN) U.S.P., ALBUTEIN® should not be used if they appear turbid or if there is sediment in the bottle. Do not begin administration more than 4 hours after the container has been entered. Discard unused portion.

PRECAUTIONS:

ALBUMIN (HUMAN) U.S.P., ALBUTEIN® should be administered with caution to patients with low cardiac reserve.

Rapid infusion may cause vascular overload with resultant pulmonary edema. Patients should be closely monitored for signs of increased venous pressure.

A rapid rise in blood pressure following infusion necessitates careful observation of injured or post-operative patients to detect and treat severed blood vessels that may not have bled at a lower pressure.

Patients with marked dehydration require administration of additional fluids. ALBUTEIN® may be administered with the usual dextrose and saline intravenous solutions. However, solutions containing protein hydrolysates or alcohol must not be infused through the same administration set in conjunction with ALBUTEIN® since these combinations may cause the proteins to precipitate.

Pregnancy Category C: Animal reproduction studies have not been conducted with Albumin (Human). It is also not known whether Albumin (Human) can cause fetal harm when administered to a pregnant woman or can affect reproductive capacity. Albumin (Human) should be given to a pregnant woman only if clearly needed.

ADVERSE REACTIONS:

Allergic or pyrogenic reactions are characterized primarily by fever and chills; rash, nausea, vomiting, tachycardia and hypotension have also been reported. Should an adverse reaction occur, slow or stop the infusion for a period of time which may result in the disappearance of the symptoms. If administration has been stopped and the patient requires additional ALBUMIN (HUMAN) U.S.P., ALBUTEIN®, material from a different lot should be used. ALBUTEIN®, particularly if administered rapidly, may result in vascular overload with resultant pulmonary edema.

DOSAGE AND ADMINISTRATION:

ALBUTEIN® is administered intravenously. The total dosage will vary with the individual. In adults, an initial infusion of 100 mL is suggested. Additional amounts may be administered as clinically indicated.

In the treatment of the patient in shock with greatly reduced blood volume, ALBUTEIN® may be administered as rapidly as necessary in order to improve the clinical condition and restore normal blood volume. This may be repeated in 15-30 minutes if the initial dose fails to prove adequate. In the patient with a slightly low or normal blood volume, the rate of administration should be 1 mL per minute.

If dilution of Albutein® 25% is clinically desirable, compatible diluents include sterile 0.9% Sodium Chloride solution or sterile 5% Dextrose in Water.[8]

Pediatric Use: The pediatric use of ALBUMIN (HUMAN) U.S.P., ALBUTEIN®, has not been clinically evaluated. The dosage will vary with the clinical state and body weight of the individual. Historically, a dose one-quarter to one-half the adult dose may be administered, or dosage may be calculated on the basis of 0.6 to 1.0 gram per kilogram of body weight (2.4 to 4mL of ALBUTEIN® 25%). For jaundiced infants suffering from hemolytic disease of the newborn the appropriate dose for binding of free serum bilirubin is 1 gram per kilogram of body weight which may be administered during the procedure.[9] The usual rate of administration in children should be one-quarter the adult rate.

Parenteral drug products should be inspected visually for particulate matter and discoloration prior to administration, whenever solution and container permit.

DIRECTIONS FOR USE: (50 mL and 100 mL with Administration Set)

Flip off plastic cap on the top of the vial and expose rubber stopper. Cleanse exposed rubber stopper with a suitable germicidal solution, being sure to remove any excess. Observe aseptic technique and prepare sterile intravenous equipment as follows:

1. Close clamp on administration set (delivers approximately 19 drops/mL).
2. With bottle upright, thrust piercing pin straight through stopper center. Do not twist or angle.
3. Immediately invert bottle to automatically establish proper fluid level in drip chamber (half full).
4. Attach infusion set to administration set, open clamp and allow solution to expel air from tubing and needle, then close clamp.
5. Make venipuncture and adjust flow.
6. Discard all administration equipment after use. Discard any unused contents.

HOW SUPPLIED:

1. 50 mL vial ALBUMIN (HUMAN) U.S.P., ALBUTEIN® 25% Solution.
2. 100 mL vial ALBUMIN (HUMAN) U.S.P., ALBUTEIN® 25% Solution.

STORAGE:

ALBUTEIN® is stable for three years providing storage temperature does not exceed 30 °C. Protect from freezing.

Rx only

REFERENCES:

1. Tullis, J.L., Albumin: 1. Background and Use. 2. Guidelines for Clinical Use. *JAMA* 237:355-360, 460-463, 1977.
2. Finlayson, J.S., Albumin Products *Semin Thromb Hemo*, 6:85-120, 1980.
3. Janeway, C.A., Human Serum Albumin: Historical Review in *Proceedings of the Workshop on Albumin*, Sgouris, J.T. and Rene A. (eds), DHEW Publication No. (NIH) 76-925, Washington, D.C., U.S. Government Printing Office, 1976, pp. 3-21.
4. Hauser, C.J., et. al., Oxygen Transport Responses to Colloids and Crystalloids in Critically Ill Surgical Patients, *Surg Gyn Obs*, 150:811-816, June 1980.
5. Shoemaker, W.C., et. al., Comparison of the Relative Effectiveness of Colloids and Crystalloids in Emergency Resuscitation, *Am J Surg*, 142:73-84, July 1981.
6. Peters, T., Jr., Serum Albumin in: *The Plasma Proteins*, 2nd Ed., Putnam F.W. (ed), New York, Academic Press, 1:133-181, 1975.
7. Data on File, FDA.
8. Albumin Human. In AHFS Drug Information, 1144-1146, 1998.
9. Tsao, Y.C., Yu, V.Y.H., Albumin in the Management of Neonatal Hyperbilirubinemia, *Arch Dis Childhood*, 47:250-256, 1972.

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