



Dr. Justyna Bartoszko, Albumin

Disclaimer: This evidence may be low quality and does not replace clinical judgement

LIVER PATIENTS

- **Spontaneous bacterial peritonitis** - 25% albumin 1.5 g/kg within 6 hours of diagnosis, then 1 g/kg on day 3
- **Large volume paracentesis** - 25% albumin, 6-8 g for every litre removed, administer soon after procedure to avoid procedural complications (hypovolemia, hyponatremia, renal impairment)
- **Acute Onset Hepatorenal syndrome Type 1** – If eligible for liver transplant, 25% Albumin 1 g/kg on Day 1, 100-200 ml on days 2-14

SPECIAL POPULATIONS

- **Ovarian Hyperstimulation Syndrome** – Treatment, not prevention. 25% albumin, 50-100 g over 4 hours, q4-12 h prn
- **Plasma exchange** - 5 % albumin, titrated to plasma volume removed
- **Burns > 50% TBSA** – In general poor quality evidence supporting use and not routinely recommended. Historically was used if unresponsive to crystalloid, 5% albumin at 0.3-0.5 ml/kg/BSA (50-100 mL/hour).

Table 1. Reported Characteristics of Colloids (Albumin) vs. Balanced Crystalloids

Characteristics	Balanced Crystalloid Solution (Plasmalyte-148)	Albumin (5% or 25% Albumin)
Approximate Cost	\$2 per 1 L	\$62 per dose (25% 100 ml or 5% 500 ml)
Typical <i>in vitro</i> pH	4-6.5	6.4-7.4
Typical constituents	Sodium: 140 mEq/L Potassium: 5 mEq/L Chloride: 148 mEq/L Magnesium: 3 mEq/L Acetate: 27 mEq/L Gluconate: 23 mEq/L	Sodium: 130-160 mEq/L Chloride: 109-137 mEq/L
Oncotic Pressure Effects	Lower, with intravascular and interstitial fluid replacement effect but potential for protein dilution and greater peripheral edema	Higher, allowing for translocation of interstitial fluid into plasma volume. Less peripheral edema but potential for pulmonary edema in capillary leak states and excessive intravascular volume expansion with mobilization of fluid intravascularly.
Plasma Volume Expanding Effect	Variable depending on serum oncotic pressure	450 ml per 25 g dose
Perceived Effect on Fluid Balance	Greater interstitial edema and higher cumulative fluid balance	Lower interstitial edema and lower cumulative fluid balance
Perceived Hemodynamic Effect	Shorter lived increase in plasma volume	Sustained increase in plasma volume (likely less in critically ill patients)

Figure 1. Intravascular Volume Expansion Effect by Albumin Formulation

Source: *Bloody Easy For HealthCare Professionals, 4th edition (new version coming soon)*

