

Adult Critical Care Albumin for Resuscitation Decision Support Tool

Albumin Indication and Evidence Summary:

Condition	Summary	References	Recommendation
Conditions for which albumin has EVIDENCE of BENEFIT			
Large-volume therapeutic paracentesis (≥ 5L ascitic fluid)	Decreased mortality	Meta-analysis: Hepatology 2012;55:1172	Concentration: 25% albumin Amount: 100-150 cc for first 5L, then 25cc for each additional liter
Spontaneous bacterial peritonitis	Decreased mortality	Meta-analysis: Clinic Gastroenterol Hepatol 2013;11:123	Concentration: 25% albumin Amount: 1.5g/kg day 1; 1.0g/kg day 3
Therapeutic plasmapheresis	Standard of care	Guidelines: J Clin Apher 2019;34:171–354	Prescriptions as per current standard practice for plasmapheresis
Conditions for which albumin has EVIDENCE of NO BENEFIT			
Hypovolemia	No effect on morbidity or mortality	SAFE study: NEJM 2004;350:2247 Meta-analysis: Cochrane Database Syst Rev 2011;11:CD001208	Recommend not using
Sepsis	No effect on morbidity or mortality	ALBIOS study: NEJM 2014;370:1412 Meta-analysis: BMJ 2014;349:g4561	Recommend not using
Traumatic Brain Injury	Increased mortality	SAFE-TBI study: NEJM 2007;357:874	Avoid use
Acute Ischemic Stroke	Increased morbidity	ALIAS 1 and 2 studies: Stroke 2016;47:2355	Avoid use
Conditions for which EVIDENCE IS LESS CLEAR			
Hepatorenal syndrome	Improved renal function	1 prospective, non-randomized study: Hepatology 2002;36:941	None
Diuretic resistance and hypoalbuminemia	Increased urine output after 8 hours, not sustained at 24 hours	Meta-analysis of 6 RCTs, 79 patients: J Crit Care 2014;253:259	None
Burn resuscitation	No effect on clinical outcomes	Meta-analysis 4 small RCTs, 140 patients: Burns 2017;43:17	None
ARDS	Unclear effect	2 small RCTs, albumin co-administered with furosemide infusion improved P/F Crit Care Med 2002;30:2175 Crit Care Med 2005;33:1681	None
Post-operative routine cardiac surgery	Unclear effect	2 RCTs with conflicting results: BJA 2014;112:255; Anesthesiology 2016;124:1001	None
ECLS and mechanical circulatory support	Unclear effect	Propensity matched retrospective cohort in 283 VA-ECMO patients suggests reduced mortality: Intensive Care Med 2018;44:2312	None
Post-operative heart/lung transplant	Unclear effect	No RCTs, guidelines only (JHLT 2010;29:914); no comment on albumin	None
Post-operative liver transplantation	Unclear effect	No RCTs; small observational studies with conflicting results	None

Fluid Resuscitation Costs (AHS 2019):

Albumin		Crystalloid	
Concentration, volume	Cost per bottle	Type	Cost per bag
25%, 100 mL (25 grams)	\$59.91	0.9% Saline (500 mL)	\$1.21
25%, 50 mL (12.5 grams)	\$29.96	0.9% Saline (1000 mL)	\$1.30
5%, 500 mL (25 grams)	\$59.91	Ringer's lactate (1000 mL)	\$1.66
5%, 250 mL (12.5 grams)	\$29.96	Plasmalyte A (1000 mL)	\$1.87