Purpose: To provide guidance for prescribing albumin in the Surgical Intensive Care Unit (SICU).

Background: Even though there is limited evidence to support the use of albumin in critically-ill patients, it is routinely used by practitioners for a variety of indications. One commonly used indication is for diuresis with loop diuretics. The evidence that supports this use was studied in very specific patient populations (e.g. nephrotic syndrome, cirrhosis, acute lung injury, and hypoproteinemic patients) and should not be applied to all ICU patients.\(^5,6,7\) In regards to resuscitation, The Surviving Sepsis Campaign Guidelines recommend crystalloids as the initial fluid of choice in the resuscitation of severe sepsis and septic shock.\(^2\) A recent Cochrane review found no evidence that resuscitation with colloids reduces the risk of death compared to resuscitation with crystalloids.\(^4\) Due to the cost and lack of evidence showing benefit with albumin for most indications, albumin use should be limited.

Cost Comparison:

<table>
<thead>
<tr>
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<th>Hospital Cost</th>
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</thead>
<tbody>
<tr>
<td>Normal Saline 1000mL</td>
<td>$1.18</td>
</tr>
<tr>
<td>D5LR 1000mL</td>
<td>$1.11</td>
</tr>
<tr>
<td>Plasmalyte</td>
<td>$2.12</td>
</tr>
<tr>
<td>Albumin 5% 250mL (12.5g)</td>
<td>$35.32</td>
</tr>
<tr>
<td>Albumin 25% 100mL (25g)</td>
<td>$70.63</td>
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</tbody>
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Approved Indications:

1. **Diuresis**
   *Must meet all of the following requirements:*  
   a. Patients have failed diuretic therapy and have acute severe peripheral/pulmonary edema  
   b. Serum albumin ≤ 3.0 g/dL  
   c. Adequate nutrition source such as enteral feeds or TPN  
   d. Respiratory insufficiency
2. **Large-Volume Paracentesis ≥ 4 liters**  
   a. May use 6 to 8 grams of albumin for each liter of ascetic fluid removed (round to the closest vial size)
3. **Liver Transplant/Hepatic Resection**  
   a. Albumin may be used to maintain effective circulating volume following major hepatic resection (greater than 40%)  
   b. Post-operative liver transplant patients may be given albumin for resuscitation if they have signs of hypovolemia and have failed/contraindication to crystalloid therapy
4. **Plasmapheresis**  
   o Albumin in large volume plasma exchange (>20 mL/kg) is appropriate
NOT approved Indications:

1. Resuscitation
   a. Crystalloids are the preferred agent.

Contraindications:

- Resuscitation of patients with Traumatic Brain Injury (TBI)\(^1\)

References:


Last Revised and Approved: September 2013

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