TRiCS III: Transfusion Requirements in Cardiac Surgery

Purpose: Assessment of the impact on outcomes of different thresholds for transfusion in moderate-high-risk cardiac surgery patients.

Trial Design: International (19 countries), multicenter (73 sites), open-label, randomized trial. Parallel transfusion strategies (within 2 hours of dropping below threshold in the OR, or 18 hours in ICU/CCU, or 40 hours on the ward):
- Liberal (Hgb < 9.5 g/dL during surgery or in the ICU, or <8.5 g/dL on the ward)
- Restrictive (red cells for Hgb < 7.5 g/dL during and after surgery)

N = 5243. Average age 72 years. 64% male.

Primary Endpoints: Composite of in-hospital mortality, MI, renal failure needing dialysis or stroke by day 28 or by discharge from the hospital.

<table>
<thead>
<tr>
<th>Primary Endpoint Composite</th>
<th>Noninferiority</th>
<th>Mortality</th>
<th>Transfusion (red cells)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Liberal</td>
<td>OR: 0.90 (CI, 0.76 to 1.07) P &lt; 0.001</td>
<td>3.6%</td>
<td>72.6%</td>
</tr>
<tr>
<td>Restrictive</td>
<td></td>
<td>3.0%</td>
<td>52.3%</td>
</tr>
</tbody>
</table>

Conclusion: For the primary composite endpoint, clinical outcomes for a restrictive red cell transfusion strategy was not inferior to a liberal strategy for cardiac surgery.

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