Transfusion of Plasma, Platelets and RBCS in Patients with Severe Trauma

**PROPRR TRIAL**

*Pragmatic, Randomized Optimal Platelet and Plasma Ratios*

PROPRR identified most trauma patients were transfused with plasma, platelets and red blood cells in a 1:1:1 or 1:1:2 ratio, but did not support which was better.

20-40% of trauma deaths after admission involve massive hemorrhage.

**STUDY DESIGN**

**Inclusion**
- >15 years of age
- >50 kg
- Direct from scene
- Required massive transfusion
- Burns >20%
- Inhalation injuries
- <1 hour predicted mortality
- Pregnancy
- >20 minutes CPR
- Throat injury performed

**Exclusion**
- No other clinical or pharmacological variables were controlled
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**LIMITATIONS**

1. Study powered to detect a >10% difference in mortality, but did not establish a benefit >10%
2. No physician blinding once protocol began
3. Did not completely exclude patients with fatal brain injury (23-38% of deaths)

**RESULTS**

840 Patients

<table>
<thead>
<tr>
<th>Blood Product Ratio</th>
<th>Patients</th>
</tr>
</thead>
<tbody>
<tr>
<td>1:1:1</td>
<td>338</td>
</tr>
<tr>
<td>1:1:2</td>
<td>342</td>
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</tbody>
</table>

**Primary Outcome = Safety**

No significant difference in all-cause mortality at 24 hrs and 30 days

9.2% in 1:1:1 transfusion (Primary Cause of Death in 24 Hours) P=0.03

14.6% in 1:1:2 transfusion (Primary Cause of Death in 24 Hours)

**Secondary Outcome = Effectiveness**

14.6% in 1:1:2 transfusion

9.2% in 1:1:1 transfusion

**BOTTOM LINE**

The authors concluded that because of...

- Decrease in death from exsanguination
- Without change in safety

Clinicians should consider 1:1:1 transfusion protocols for level 1 trauma patients requiring rapid hemorrhage control

**REFERENCES:**

This infographic was created by Lauren Beals and edited by Alvin Chin.