

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

Holcomb et al.

canadiem MVP INFOGRAPHIC SERIES

PROPPR TRIAL

Pragmatic, Randomized Optimal Platelet and Plasma Ratios



PROMMTT 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 **suggest which was better**.



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

? 1:1:1 or 1:1:2 blood product ratio ?
for massive transfusion in trauma patients?

STUDY DESIGN

Phase **3**
Randomized
Control Trial

x12
Tertiary
Level 1
Trauma
Centers

Inclusion

>15 years of age
>50 kg

Direct from scene
Required massive
transfusion



No other clinical or pharmacological variables were controlled

Exclusion

- Burns >20%
- inhalation injuries
- <1 hour predicted mortality
- Pregnancy
- >5 minutes CPR
- Thoracotomy preformed

Remember! PROPPR = Pragmatic

PROPPR was a **pragmatic** RCT that used **broad inclusion criteria** to reflect outcomes in "real world" settings, rather than restricting confounding variables to prove causation.

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

640 Patients

338 Patients

342 Patients

Primary Outcome = Safety
No significant difference
in all-cause mortality
at 24 hrs and 30 days

Secondary Outcome = Effectiveness

9.2% **14.6%**

% of patients who died from exsanguination
(Primary Cause of Death in 24 Hours) P=0.03

BOTTOM LINE

The authors concluded that because of a...



Decrease
in death from
exsanguination



Without
a change
in safety

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

REFERENCES:

Holcomb JB, Tilley BC, Baraniuk S, Fox EE, Wade CE, Podbielski JM, Del Junco DJ, Brasel KJ, Bulger EM, Callcut RA, Cohen MJ. Transfusion of plasma, platelets, and red blood cells in a 1:1:1 vs a 1:1:2 ratio and mortality in patients with severe trauma: the PROPPR randomized clinical trial. *Jama*. 2015 Feb 3;313(5):471-82.

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