Jacob M. Chaisson

L3

LSUHSC New Orleans, LA

Mentor:

Alison Smith, MD, PhD; Department of Surgery

Comparative Outcomes of Whole Blood Plus Component Therapy Versus Component Therapy Alone in Hemorrhagic Shock: A Propensity-Matched Analysis

Introduction:
Whole blood (WB) transfusion provides red cells, plasma, and platelets in a single product and is increasingly being used in trauma resuscitation. Component therapy (CT) remains the standard, but supplementing CT with WB (CT+WB) may reduce transfusion requirements and improve outcomes. This study compared outcomes of CT+WB versus CT alone in patients with hemorrhagic shock.

Methods:
We retrospectively reviewed adult trauma patients with hemorrhagic shock at a Level 1 Trauma Center. Patients received CT+WB or CT alone. Propensity matching (1:2) was performed based on sex, race, age, BMI, mechanism of injury, head AIS, and ISS. Univariable analyses were conducted using chi-square, Mann-Whitney U, and t-tests.

Results:
Among 229 patients (85 CT; 144 CT+WB), the cohort was predominantly male (76.4%) and African American (63.7%), with a mean age of 39 years, BMI 26.9, and ISS 21.3. Median transfusion volume was lower in CT+WB (1824 mL, IQR 940–4518; including 1059 mL WB, IQR 545–1127) compared with CT alone (2035 mL, IQR 566–2279). Median length of stay was shorter in CT+WB (7 days, IQR 2–19) versus CT alone (9 days, IQR 5–26; $p=0.010$). No significant differences were observed in adverse events between groups ($p>0.05$).

Conclusion:
WB supplementation in trauma resuscitation reduces transfusion volume and hospital length of stay without increasing complications. CT+WB represents a viable strategy for managing hemorrhagic shock, particularly when WB supply is limited.