

Outcomes of Military Casualties With Borderline Blood Pressure Treated with Blood Product Transfusion

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Introduction

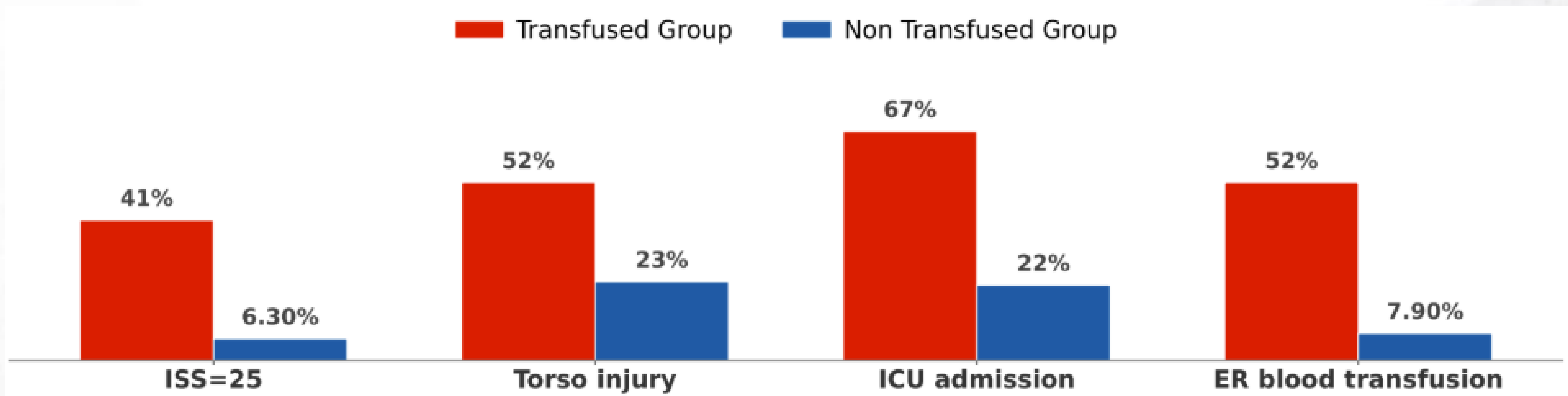
- Hemorrhage is the leading cause of preventable battlefield death.
- Current IDF indications for prehospital blood product transfusion are systolic blood pressure (SBP) threshold of 90mmHg, or if unavailable, absent radial pulse or decreased consciousness without head trauma.
- Other systems use different criteria such as SBP<100 mmHg and location of injury, specifically torso.
- This study examines outcomes of casualties with SBP 90-110 mmHg who recieved blood transfusion in order to evaluate if SBP threshold for blood transfusion should be increased.

Methods

- Retrospective cohort.
- Data were extracted from the IDF Trauma Registry and Israel National Trauma Registry during the “Swords of Iron” war (Oct 27, 2023–Jul 30, 2025).
- Study population: hospitalized milillitary casualties not indicated for blood products with prehospital SBP 90–110 mmHg. They were devided to those who received prehospital blood products and those who did not.
- The association between prehospital blood products and unfavorable outcomes were assessed.

Results

- Among 217 casualties with SBP 90–110 mmHg, 27 (12.4%) received prehospital blood products and 190 (87.6%) did not.
- Receipt of prehospital blood products was associated with **significantly higher rates of critical injury** (ISS $\geq$ 25: 41% vs. 6.3%, $p<0.001$), **torso trauma** (52% vs. 23%, $p=0.002$), and **ICU admission** (67% vs. 22%, $p<0.001$), as well as **prolonged ICU stays** (6 vs. 1 days, $p=0.014$) and **increased need for emergency department transfusion** (52% vs. 7.9%, $p<0.001$).



Conclusions

- The casualties treated with blood products had less favorable outcomes.
- This appears to be associated with greater injury severity in the transfused group (higher ISS and a higher rate of torso injuries) rather than an effect of prehospital blood product administration.
- Other military trauma systems incorporate injury location into transfusion decision-making, specifically torso injury.
- Further investigation is needed to evaluate if injury location should be incorporated into our prehospital transfusion guidelines as well.



Disclaimer This study was performed as part of the Israel Defense Forces Trauma and Combat Medicine Branch effort to improve the quality of combat casualty care and received no external funding or support.



At the moment of truth,
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