Fresh whole blood use by forward surgical teams in Afghanistan is associated with improved survival compared to component therapy without platelets.


BACKGROUND: In Afghanistan, a substantial portion of resuscitative combat surgery is performed by US Army forward surgical teams (FSTs). Red blood cells (RBCs) and fresh frozen plasma (FFP) are available at these facilities, but platelets are not. FST personnel frequently encounter high-acuity patient scenarios without the ability to transfuse platelets. An analysis of the use of fresh whole blood (FWB) at FSTs therefore allows for an evaluation of outcomes associated with this practice.

STUDY DESIGN AND METHODS: A retrospective analysis was performed in prospectively collected data from all transfused patients at six FSTs from December 2005 to December 2010. Univariate analysis was performed, followed by two separate propensity score analyses. In-hospital mortality was predicted with the use of a conditional logistic regression model that incorporated these propensity scores. Subset analysis included evaluation of patients who received uncrossmatched Type O FWB compared with those who received type-specific FWB.

RESULTS: A total of 488 patients received a blood transfusion. There were no significant differences in age, sex, or Glasgow Coma Scale in those who received or did not receive FWB. Injury Severity Scores were higher in patients transfused FWB. In our adjusted analyses, patients who received RBCs and FFP with FWB had improved survival compared with those who received RBCs and FFP without FWB. Of 94 FWB recipients, 46 FWB recipients (49%) were given uncrossmatched Type O FWB, while 48 recipients (51%) received type-specific FWB. There was no significant difference in mortality between patients that received uncrossmatched Type O and type-specific FWB.

CONCLUSIONS: The use of FWB in austere combat environments appears to be safe and is independently associated with improved survival to discharge when compared with resuscitation with RBCs and FFP alone. Mortality was similar for patients transfused uncrossmatched Type O compared with ABO type-specific FWB in an austere setting.