

Supplementary Online Content

Pusateri AE, Moore EE, Moore HB, et al. Association of prehospital plasma transfusion with survival in trauma patients with hemorrhagic shock when transport times are longer than 20 minutes: a post hoc analysis of the PAMPer and COMBAT clinical trials. *JAMA Surg*. Published December 18, 2019. doi:10.1001/jamasurg.2019.5085

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This supplementary material has been provided by the authors to give readers additional information about their work.

eTable 1. Harmonized Inclusion Criteria

Acutely injured patients with blunt or penetrating trauma in severe hemorrhagic shock
Transported by ground or air ambulance
Presence of electrical activity and/or measureable or palpable blood pressure at time of randomization
Age \geq 18 years
Shock definition: Acutely injured, with presumed hemorrhagic shock from acute blood loss defined as SBP \leq 70 mmHg or with SBP 71-90 mmHg and HR \geq 108 beats per minute
Either sex
Volume of crystalloid administered prior to randomization can be documented

eTable 2. Harmonized Exclusion Criteria

Age <18 years
Inability to obtain intravenous or intraosseous access
Penetrating cranial injury
Traumatic brain injury with brain matter exposed.
Visibly or verbally reported pregnant woman
Burns over 20% body surface area
Cardiac arrest or CPR prior to randomization
Known prisoner
Unsalvageable injuries
Known religious objection to blood products
Patient has an opt-out bracelet, necklace or wallet card
Patient (if lucid) or family member at scene declines participation in the study

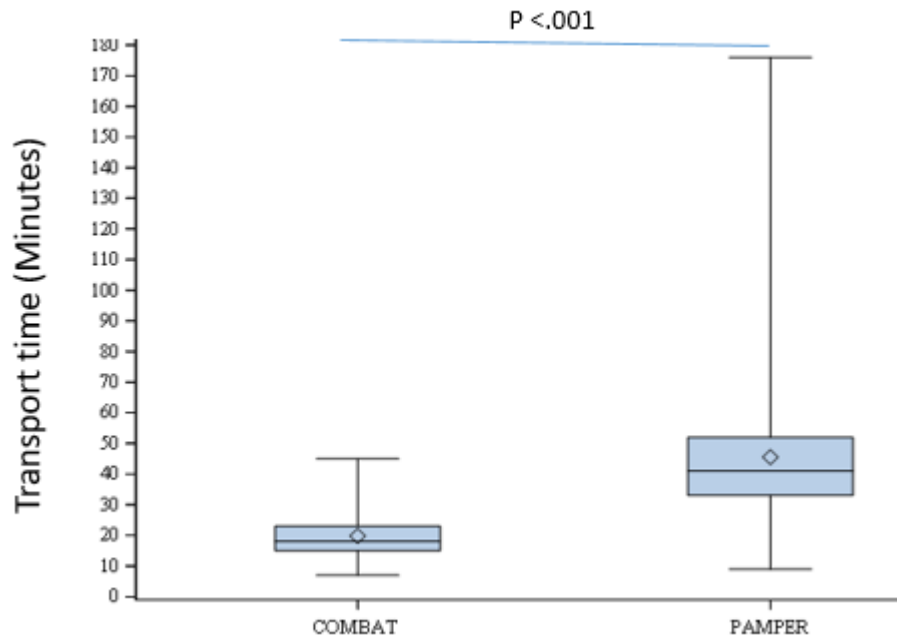
eTable 3. Interventions

Parameter	COMBAT	PAMPer
Plasma	Type AB thawed plasma (TP)	Type AB or low titer type A thawed plasma
Handling Procedures	Plasma carried frozen and thawed in the ground ambulance	TP carried refrigerated in the air ambulance
Plasma Group	Patients randomized to the plasma group receive 2 units of plasma followed by local standard care	Patients randomized to the plasma group receive 2 units of plasma followed by local standard care.
Control Group	Local Standard Care. Goal directed prehospital crystalloid resuscitation using normal saline.	Local Standard Care. Goal directed prehospital crystalloid (normal saline or lactated Ringer's solution) or uncrossmatched packed red blood cells depending on the particular air medical service.

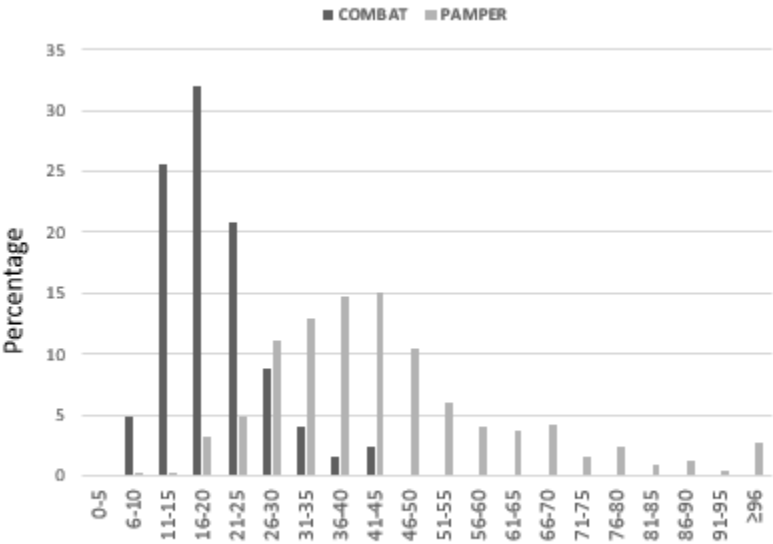
eTable 4. Mortality and Secondary Outcomes by Transport Time

	All	≤20 min	>20 min	P Value
Number of participants, No. (%)	626 (100)	96 (15.3)	530 (84.7)	–
Mortality, No. (%)				
28-day, Overall	155 (24.8)	20 (20.8)	135 (25.5)	0.33
24-hour, Overall	106 (16.9)	15 (15.6)	91 (17.2)	0.71
Transfusion received, Median (IQR) Units				
In first 6 hour after ED admission				
PRBC, Overall	5 (2-10)	6 (2-13)	5 (2-9)	0.26
SC	6 (2-10)	6 (2-12)	5 (3-10)	0.84
Plasma	5 (2-8)	8 (2-17)	4 (2-8)	0.06
FFP, Overall	3 (2-6)	4 (2-8)	2 (2-6)	0.03
SC	4 (2-9)	4 (2-8)	5 (2-10)	0.49
Plasma	2 (2-5)	4 (2-8)	2 (2-4)	0.002
Platelet, Overall	2 (1-3)	1 (1-2)	2 (1-3)	0.29
SC	2 (1-3)	1 (1-2)	2 (1-3)	0.19
Plasma	1 (1-2)	2 (1-2)	1 (1-2)	0.86
In first 24 hour after ED admission				
PRBC, Overall	5 (2-10)	7 (2-13)	5 (2-10)	0.26
SC	6 (3-10)	7 (2-13)	6 (3-10)	0.96
Plasma	5 (2-10)	7 (2-17)	4 (2-8)	0.10
FFP, Overall	3 (2-7)	4 (2-9)	3 (2-6)	0.04
SC	4 (2-10)	4 (2-9)	5 (2-10)	0.19
Plasma	2 (2-6)	5 (2-10)	2 (2-4)	<.001
Platelet, Overall	2 (1-3)	2 (1-2)	1 (1-3)	0.74
SC	2 (1-3)	1 (1-3)	2 (1-3)	0.50
Plasma	1 (1-2)	2 (1-2)	1 (1-2)	0.60
INR at ED arrival, Median (IQR)				
Overall	1.2 (1.1-1.4)	1.2 (1.1-1.4)	1.2 (1.1-1.4)	0.85
SC	1.3 (1.1-1.6)	1.1 (1.1-1.5)	1.3 (1.1-1.6)	0.02
Plasma	1.2 (1.1-1.3)	1.3 (1.2-1.4)	1.2 (1.1-1.3)	0.01
Ventilator-free Days 28-day follow-up				
All survivors (n=471), Median (IQR)	27 (22-28)	27 (24-28)	27 (22-28)	0.68
SC	27 (24-28)	27 (25-28)	27 (23-28)	0.51
Plasma	26 (20-28)	26 (22-28)	26 (20-28)	0.72
ICU-free days 28-day follow-up				
All survivors (n=471), Median (IQR)	23 (15-26)	24 (19-26)	23 (14-26)	0.12
SC	23 (16-26)	24 (20-26)	23 (15-26)	0.06
Plasma	23 (14-26)	23 (16-26)	23 (14-26)	0.79
Abbreviations: SC, standard care; ED, emergency department; IQR, interquartile ranges; RBC, red blood cells; FFP, fresh frozen plasma; INR, International Normalized Ratio; ICU, intensive care unit. The <i>P</i> -values were calculated with the use of a chi-square, t-test or Wilcoxon-Mann-Whitney test as appropriate.				

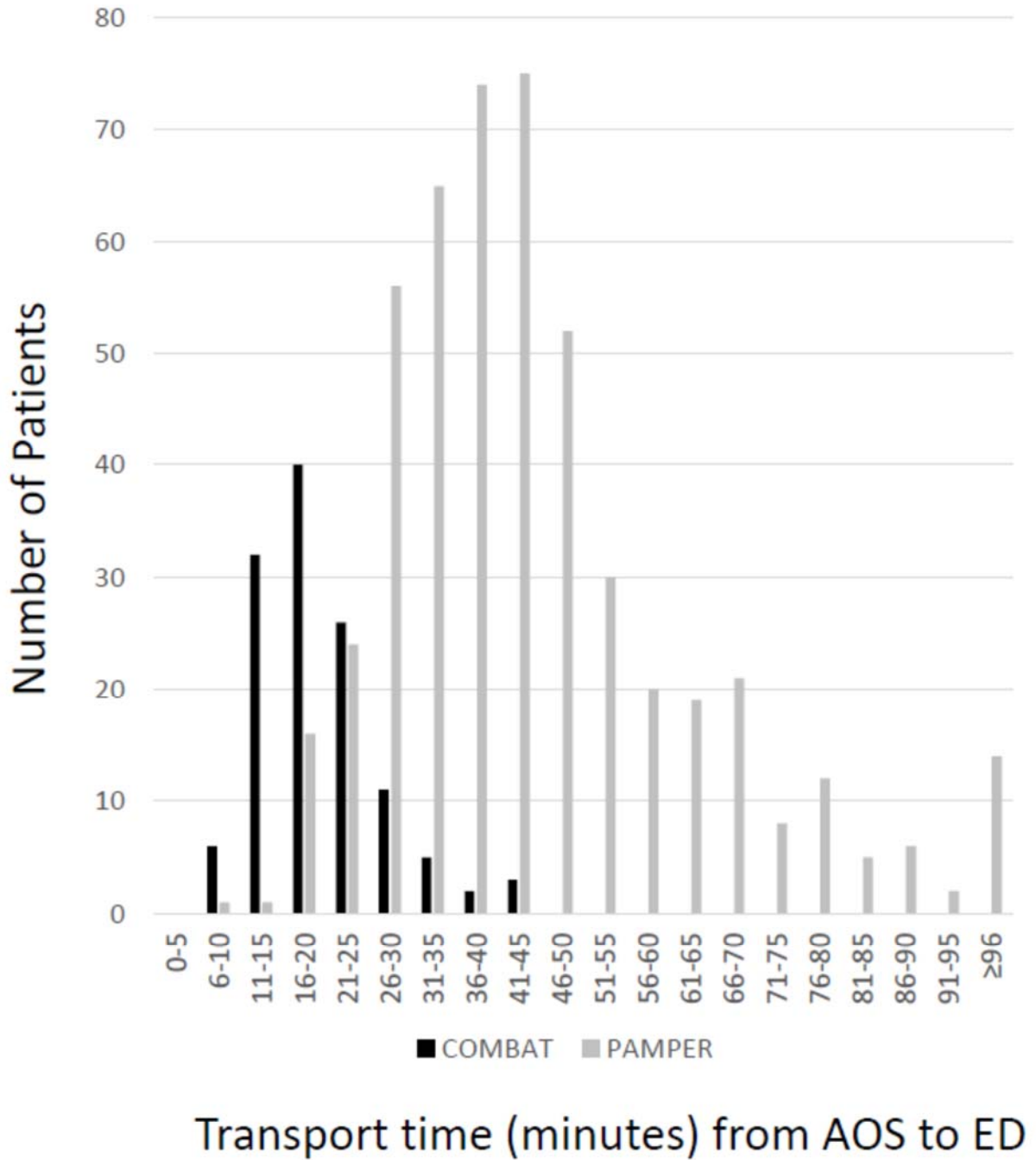
eFigure 1. Comparison of Transport Time by Cohort



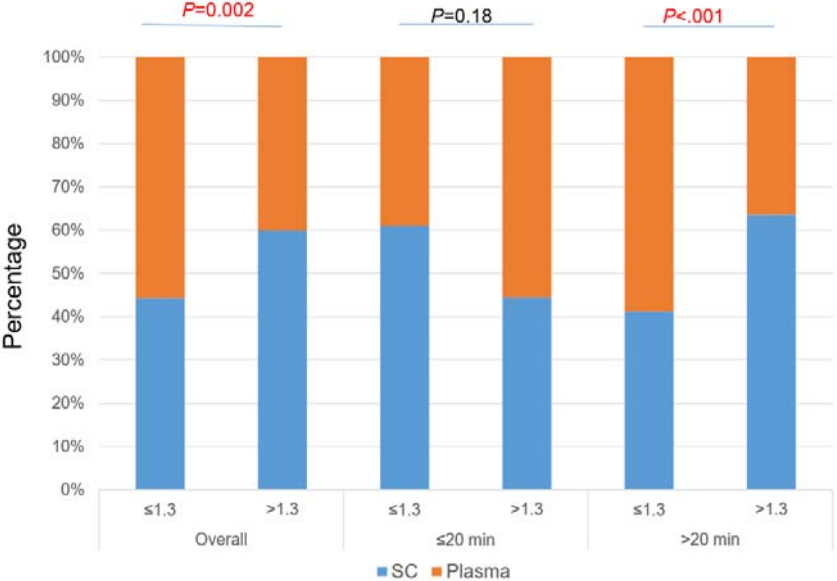
eFigure 2. Distribution of Patient Transport Time (Minutes) by Cohort



eFigure 3. Distribution of Patient Transport Time by Cohort



eFigure 4. International Normalized Ratio (INR) by Treatment (Plasma vs Standard Care [SC]) and Transport Time



Likelihood of INR >1.3 is reduced in patients who received prehospital plasma compared with SC, OR (95% CI): 0.53 (0.35-0.80); P=.002