

Supplemental Digital Content 1

Table 1. Demographics According to Randomization of First Transfused Blood Product (Intention to Treat)

	Cell Salvage	Washed Allogeneic	Unwashed Allogeneic	Other	All	P Value
n (%)	35 (38.5%)	22 (24.2%)	26 (28.6%)	8 (8.8%)	91 (100.0%)	
Age (years)	53 ± 15	60 ± 8	56 ± 12	55 ± 16	56 ± 13	0.26
Gender (F/M)						0.48
Female	25 (71.4%)	17 (77.3%)	15 (57.7%)	6 (75.0%)	63 (69.2%)	
Male	10 (28.6%)	5 (22.7%)	11 (42.3%)	2 (25.0%)	28 (30.8%)	
Height (cm)	167 ± 9	162 ± 8	165 ± 9	161 ± 20	165 ± 10	0.31
Weight (kg)	81.9 ± 18.2	73.1 ± 14.9	84.1 ± 25.7	72.1 ± 19.3	79.5 ± 20.3	0.17
BMI (kg/m ²)	29.4 ± 6.3	27.8 ± 5.8	30.5 ± 8.0	28.0 ± 6.6	29.2 ± 6.7	0.54
Tobacco Use						
Any	13 (37.1%)	12 (54.5%)	10 (38.5%)	1 (12.5%)	36 (39.6%)	0.20
Current	1 (2.9%)	0 (0%)	1 (3.8%)	0 (0%)	2 (2.2%)	0.78
Ethnicity						0.71
Caucasian	28 (80.0%)	19 (86.4%)	24 (92.3%)	7 (87.5%)	78 (85.7%)	
Asian	0 (0%)	1 (4.5%)	0 (0%)	0 (0%)	1 (1.1%)	
African American	1 (2.9%)	0 (0%)	0 (0%)	0 (0%)	1 (1.1%)	
Native American/Alaskan	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	
Hawaiian/Pacific Islander	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	
Other/Multiethnic	6 (17.1%)	2 (9.1%)	2 (7.7%)	1 (12.5%)	11 (12.1%)	
Hispanic	2 (5.7%)	0 (0%)	2 (7.7%)	0 (0%)	4 (4.4%)	

Data are mean ± SD or n(%); treatment groups are all erythrocytes as described in the text; "Other" includes patients randomized to autologous blood or not randomized. BMI = body mass index; F = female; M = male.

Table 2. Baseline Blood Gas and Gas Exchange Data for the Intention-to-Treat Groups

	Cell Salvage	Washed Allogeneic	Unwashed Allogeneic	<i>P</i> Value	
	35	22	26		
	7.42 ± 0.04	7.43 ± 0.04	7.44 ± 0.04	0.066	
PaCO ₂ (mm Hg)	39.6 ± 3.6	38.8 ± 3.2	39.0 ± 4.1	0.70	
PaO ₂ (mm Hg)	366 ± 71	381 ± 60	347 ± 96	0.32	
HCO ₃ ⁻ (mmol/L)	25.7 ± 2.4	26.2 ± 1.9	26.6 ± 2.0	0.26	
Base Excess (mmol/L)	1.6 ± 2.8	2.4 ± 2.5	3.0 ± 2.0	0.12	
	100.0 ± 0.2	100.0 ± 0.2	100.0 ± 0.0	0.59	
	0.93 ± 0.08	0.90 ± 0.13 (18)	0.88 ± 0.17 (21)	0.38	
	409 ± 55	435 ± 81 (18)	380 ± 81 (21)	0.066	
	0.39 ± 0.07 (35)	0.39 ± 0.09	0.40 ± 0.07	0.92	

Data are mean ± SD, or mean ± SD (n) if n different from total; P/F ratio = PaO₂/FiO₂; V_D/V_T = measured physiological dead space; treatment groups are all erythrocytes as described in the text.

Table 3. Data before and after Transfusion of First Erythrocyte Unit by Intention-to-Treat

	Cell Salvage	Washed Allogeneic	Unwashed Allogeneic	<i>P</i> Value (between)
P/F Ratio				
n pairs	33	20	24	
Pre	420 ± 71	417 ± 59	403 ± 72	0.61
Post	428 ± 59	426 ± 61	423 ± 71	0.96
Δ	8 ± 53	9 ± 40	20 ± 42	0.57
<i>P</i> Value (within)	0.41	0.32	0.027	
V _D /V _T				
n pairs	33	21	25	
Pre	0.38 ± 0.08	0.37 ± 0.08	0.37 ± 0.09	0.89
Post	0.37 ± 0.07	0.36 ± 0.08	0.36 ± 0.07	0.92
Δ	-0.01 ± 0.04	-0.01 ± 0.04	0.00 ± 0.06	0.90
<i>P</i> Value (within)	0.22	0.30	0.70	
PaO ₂				
n pairs	31	18	24	
Pre	356 ± 89	337 ± 93	341 ± 79	0.71
Post	361 ± 86	338 ± 91	354 ± 80	0.65
Δ	5 ± 50	1 ± 31	13 ± 29	0.61
<i>P</i> Value (within)	0.55	0.86	0.038	

Data are Mean ± SD. P/F Ratio = PaO₂/FiO₂; V_D/V_T = measured physiological dead space; data for PaO₂ only for patients at constant FiO₂; Δ is pre- to post-transfusion; treatment groups are all erythrocytes as described in the text.

Table 4. Ventilatory Data for the Intention-to-Treat Population

	Cell Salvage	Washed Allogeneic	Unwashed Allogeneic	<i>P</i> Value (between)
n	34	22	26	
Minute Ventilation Calculated (L/min)				
Pre	5.1 ± 1.2	4.6 ± 1.0	5.6 ± 1.7	0.039
Post	5.3 ± 1.1	4.5 ± 1.1	5.4 ± 1.3	0.022
<i>P</i> Value (within)	0.13	0.90	0.44	
Tidal Volume (mL)				
Pre	515 ± 106	496 ± 79	531 ± 96	0.47
Post	522 ± 106	490 ± 76	528 ± 106	0.36
<i>P</i> Value (within)	0.33	0.47	0.82	
Respiratory Rate (breaths/min)				
Pre	10 ± 2	9 ± 2	10 ± 2	0.15
Post	10 ± 2	9 ± 2	10 ± 2	0.085
<i>P</i> Value (within)	0.13	1.0	0.70	
Peak Inspiratory Pressure (cm H ₂ O)				
Pre	23 ± 5	21 ± 3	23 ± 5	0.13
Post	23 ± 5	21 ± 3	23 ± 6	0.13
<i>P</i> Value (within)	0.83	0.35	0.21	
Plateau Pressure (cm H ₂ O)				
Pre	20 ± 4 (33)	18 ± 2	20 ± 4 (25)	0.20
Post	19 ± 4 (33)	18 ± 3	20 ± 5 (25)	0.35
<i>P</i> Value (within)	0.10	0.69	0.42	
PEEP (cm H ₂ O)				
Pre	5 ± 1	5 ± 1	5 ± 1	0.63
Post	5 ± 1	4 ± 1	5 ± 1	0.17
<i>P</i> Value (within)	1.0	0.030	1.0	
Dynamic Compliance (mL/cm H ₂ O)				
Pre	29 ± 7	31 ± 7	30 ± 6	0.53
Post	29 ± 6	30 ± 6	31 ± 8	0.63
<i>P</i> Value (within)	0.36	0.82	0.32	
Static Compliance (mL/cm H ₂ O)				
Pre	39 ± 21 (33)	37 ± 8	37 ± 9 (25)	0.90
Post	40 ± 19 (33)	36 ± 8	39 ± 13 (25)	0.74
<i>P</i> Value (within)	0.20	0.62	0.40	

Data are mean ± SD, mean ± SD (n) or n (%). Minute ventilation calculated from respiratory rate and tidal volume. *P* values are for paired comparisons from before to after transfusion (within), and unpaired comparisons between transfusion groups; treatment groups are all erythrocytes as described in the text. PEEP = positive end-expiratory pressure.

Table 5. Vital Signs for the Intention-to-Treat Population

	Cell Salvage	Washed Allogeneic	Unwashed Allogeneic	<i>P</i> Value (between)
n	34	22	26	
Heart Rate (beats/min)				
Pre	70 ± 15	67 ± 12	68 ± 10	0.68
Post	68 ± 12	66 ± 11	70 ± 12	0.40
<i>P</i> Value (within)	0.30	0.043	0.18	
BP Systolic (mm Hg)				
Pre	108 ± 16	102 ± 14	108 ± 15	0.29
Post	113 ± 17	105 ± 12	111 ± 19	0.20
<i>P</i> Value (within)	0.070	0.45	0.30	
BP Diastolic (mm Hg)				
Pre	59 ± 11	54 ± 7	60 ± 11	0.08
Post	63 ± 11	56 ± 8	62 ± 9	0.026
<i>P</i> Value (within)	0.041	0.35	0.25	
BP Mean (mm Hg)				
Pre	76 ± 12	74 ± 13	78 ± 12	0.52
Post	82 ± 13	76 ± 9	80 ± 16	0.27
<i>P</i> Value (within)	0.013	0.56	0.52	
CVP (mm Hg)				
Pre	10 ± 4 (24)	11 ± 4 (17)	10 ± 3 (19)	0.51
Post	11 ± 4 (24)	11 ± 4 (17)	10 ± 4 (19)	0.69
<i>P</i> Value (within)	0.0081	0.82	0.78	
Temperature (°C)				
Pre	36.1 ± 0.6	36.1 ± 1.0	36.3 ± 0.7 (25)	0.52
Post	36.2 ± 0.6	36.2 ± 1.0	36.5 ± 0.7 (25)	0.32
<i>P</i> Value (within)	< 0.0001	0.039	0.0014	

Data are mean ± SD or mean ± SD (n) if n differs. *P* values are for paired comparisons from before to after transfusion (within), and unpaired comparisons between transfusion groups; treatment groups are all erythrocytes as described in the text. BP = arterial blood pressure; CVP = central venous pressure.

Table 6. Arterial Blood Gas Values for the Intention-to-Treat Population

	Cell Salvage	Washed Allogeneic	Unwashed Allogeneic	<i>P</i> Value (between)
n	33	20	24	
pH				
Pre	7.41 ± 0.04	7.41 ± 0.05	7.42 ± 0.04	0.53
Post	7.40 ± 0.04	7.39 ± 0.04	7.41 ± 0.04	0.51
<i>P</i> Value (within)	0.28	0.061	0.14	
PaCO ₂ (mm Hg)				
Pre	38.8 ± 3.5	40.1 ± 3.9	38.8 ± 2.7	0.32
Post	38.9 ± 3.5	40.0 ± 4.3	39.8 ± 3.3	0.50
<i>P</i> Value (within)	0.62	0.91	0.21	
PaO ₂ (mm Hg)				
Pre	355 ± 87	343 ± 90	341 ± 79	0.81
Post	365 ± 85	327 ± 95	354 ± 80	0.29
<i>P</i> Value (within)	0.25	0.26	0.038	
HCO ₃ ⁻ (mmol/L)				
Pre	24.5 ± 2.1	25.2 ± 2.5	25.7 ± 3.2	0.21
Post	24.2 ± 2.1	24.2 ± 2.0	25.2 ± 2.5	0.21
<i>P</i> Value (within)	0.13	0.0021	0.32	
Base Excess (mmol/L)				
Pre	0.4 ± 2.4	1.3 ± 2.7	1.4 ± 2.3	0.22
Post	0.1 ± 2.3	-0.1 ± 2.4	1.0 ± 2.7	0.26
<i>P</i> Value (within)	0.17	0.0010	0.12	
SaO ₂ (%)				
Pre	100.0 ± 0.2	99.9 ± 0.4	99.9 ± 0.4	0.73
Post	100.0 ± 0.2	100.0 ± 0.2	99.9 ± 0.4	0.78
<i>P</i> Value (within)	1.0	0.67	1.0	
FIO ₂				
Pre	0.85 ± 0.19	0.83 ± 0.19	0.85 ± 0.14	0.88
Post	0.86 ± 0.19	0.78 ± 0.22	0.84 ± 0.16	0.27
<i>P</i> Value (within)	0.30	0.16	0.28	

Data are mean ± SD. *P* values are for paired comparisons from before to after transfusion (within), and unpaired comparisons between transfusion groups; treatment groups are all erythrocytes as described in the text.