

Blood transfusions in septic shock: is 7.0g/dL really the appropriate threshold?

Transfusões de sangue no choque séptico: 7,0g/dL é mesmo o limite adequado?

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Table S1 - Pre- and post-transfusion comparison of lactate, central venous oxygen saturation and hemoglobin levels in patients with high lactate levels at baseline

Variables	Liberal (N = 14)	Restrictive (N = 20)	p value*
Hemoglobin (g/dL)			
PreT Hb	8.4 (8.2 to 8.7)	6.8 (6.6 to 6.9)	< 0.0001
PosT Hb	9.4 (9.0 to 9.6)	7.5 (7.4 to 7.8)	< 0.0001
Difference	0.9 (0.7 to 1.0)	0.8 (0.7 to 1.1)	
p value [#]	0.001	< 0.0001	
ScvO ₂ (%)			
PreT ScvO ₂	71.0 (68.0 to 72.5)	66.0 (62.5 to 70.5)	0.03
PosT ScvO ₂	72.0 (71.0 to 74.5)	70.5 (66.5 to 73.0)	0.29
Difference	3.5 (- 2.2 to 5.5)	5.0 (2.0 to 8.0)	
p value [#]	0.13	0.001	
Lactate (mMol/L)			
PreT lactate	2.96 (2.61 to 3.69)	2.97 (2.48 to 3.78)	0.75
PosT lactate	2.62 (2.16 to 3.16)	2.60 (2.22 to 3.11)	0.84
Difference	-0.44 (- 0.68 to - 0.08)	-0.24 (- 0.52 to - 0.09)	
p value [#]	0.02	0.001	

Hb - hemoglobin; ScvO₂ - central venous oxygen saturation; PreT - pre-transfusion; PosT - post-transfusion. The results are expressed as the median values (25 - 75%). [#] p value refers to comparison within the same group (Wilcoxon rank test). * p value refers to differences between groups (Mann-Whitney test).

Table S2 - Pre- and post-transfusion comparison of lactate, central venous oxygen saturation and hemoglobin levels in patients with low central venous oxygen saturation at baseline

Variables	Liberal (N = 12)	Restrictive (N = 20)	p value*
Hemoglobin (g/dL)			
PreT Hb	8.2 (8.1 to 8.5)	6.8 (6.7 to 6.9)	< 0.0001
PosT Hb	9.2 (9.1 to 9.5)	7.5 (7.4 to 7.8)	< 0.0001
Difference	0.9 (0.7 to 1.0)	0.8 (0.7 to 0.9)	
p value [#]	< 0.0001	< 0.0001	
ScvO ₂ (%)			
PreT ScvO ₂	67.0 (64.7 to 68.2)	65.0 (60.5 to 68.0)	0.18
PosT ScvO ₂	71.5 (69.8 to 72.2)	70.5 (66.5 to 73.0)	0.53
Difference	4.5 (- 0.2 to 6.0)	5.0 (4.0 to 7.5)	
p value [#]	0.02	< 0.0001	
Lactate (mMol/L)			
PreT lactate	2.51 (1.86 to 3.22)	2.67 (2.19 to 3.27)	0.38
PosT lactate	2.24 (1.90 to 2.81)	2.42 (1.96 to 3.02)	0.34
Difference	- 0.50 (- 0.61 to - 0.09)	- 0.20 (- 0.46 to - 0.05)	
p value [#]	0.01	0.003	

Hb - hemoglobin; ScvO₂ - central venous oxygen saturation; PreT - pre-transfusion; PosT - post-transfusion. The results are expressed as the median values (25 - 75%). [#] p value refers to comparison within the same group (Wilcoxon rank test). * p value refers to differences between groups (Mann-Whitney test).

Table S3 - Pre- and post-transfusion comparison of perfusion parameters and hemoglobin levels considering only the first transfusion of each patient

Groups	Liberal	Restrictive	p value*
Global	(N = 24)	(N = 22)	
Hemoglobin (g/dL)			
PreT Hb	8.4 (8.1 to 8.6)	6.8 (6.7 to 6.9)	< 0.0001
PosT Hb	9.2 (9.1 to 9.5)	7.6 (7.5 to 7.8)	< 0.0001
Difference	0.9 (0.8 to 1.1)	0.8 (0.8 to 1.0)	
p value [#]	< 0.0001	< 0.0001	
ScvO ₂ (%)			
PreT ScvO ₂	71.0 (68.0 to 72.0)	67.5 (63.5 to 69.2)	0.001
PosT ScvO ₂	71.5 (69.2 to 72.7)	71.0 (67.5 to 73.0)	0.62
Difference	1.5 (- 2.0 to 3.7)	5.0 (2.7 to 6.5)	
p value [#]	0.45	< 0.0001	
Lactate (mMol/L)			
PreT lactate	1.97(1.64 to 2.66)	2.48 (1.90 to 3.20)	0.08
PosT lactate	2.06 (1.73 to 2.40)	2.30 (1.78 to 2.87)	0.23
Difference	- 0.09 (- 0.45 to 0.19)	- 0.19 (- 0.48 to - 0.05)	
p value [#]	0.42	0.003	
Hyperlactatemia group			
	(N = 09)	(N = 14)	
Hemoglobin (g/dL)			
PreT Hb	8.2 (8.1 to 8.5)	6.8 (6.6 to 6.9)	< 0.0001
PosT Hb	9.1 (9.0 to 9.5)	7.6 (7.4 to 7.9)	< 0.0001
Difference	0.9 (0.8 to 1.1)	0.8 (0.7 to 1.1)	
p value [#]	0.007	0.001	
ScvO ₂ (%)			
PreT ScvO ₂	69.0 (66.5 to 71.5)	64.0 (61.0 to 68.0)	0.01
PosT ScvO ₂	72.0 (70.0 to 72.5)	69.0 (65.7 to 73.0)	0.22
Difference	4.0 (- 1.0 to 7.0)	5.0 (4.0 to 8.0)	
p value [#]	0.19	0.001	
Lactate (mMol/L)			
PreT lactate	3.12 (2.63 to 3.88)	3.12 (2.48 to 4.10)	0.82
PosT lactate	2.51 (2.23 to 3.11)	2.76 (2.32 to 3.15)	0.85
Difference	- 0.50 (- 0.84 to - 0.14)	- 0.31 (- 0.54 to - 0.08)	
p value [#]	0.08	0.003	
Low ScvO ₂ group			
	(N = 10)	(N = 17)	
Hemoglobin (g/dL)			
PreT Hb	8.2 (8.1 to 8.5)	6.8 (6.6 to 6.9)	< 0.0001
PosT Hb	9.1 (9.0 to 9.5)	7.5 (7.4 to 7.8)	< 0.0001
Difference	0.9 (0.8 to 1.0)	0.8 (0.7 to 1.0)	
p value [#]	0.005	< 0.0001	
ScvO ₂ (%)			
PreT ScvO ₂	67.5 (64.7 to 69.7)	64.0 (61.0 to 68.0)	0.08
PosT ScvO ₂	70.5 (69.0 to 72.0)	70.0 (66.0 to 73.0)	0.82
Difference	3.5 (- 1.5 to 6.2)	5.0 (4.0 to 7.0)	
p value [#]	0.06	< 0.0001	

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Groups	Liberal	Restrictive	p value*
Lactate (mMol/L)			
PreT lactate	2.64 (1.96 to 3.40)	2.91 (2.26 to 3.56)	0.54
PosT lactate	2.34 (2.06 to 2.98)	2.43 (2.01 to 3.09)	0.52
Difference	- 0.41 (- 0.62 to - 0.01)	- 0.19 (- 0.49 to - 0.05)	
p value [#]	0.05	0.005	

Hb - hemoglobin; ScvO₂ - central venous oxygen saturation; PreT - pre transfusion; PosT - post transfusion. The results are expressed as median (25 - 75%). * p value refers to comparison within the same group (Wilcoxon rank test). # p value refers to differences between groups (Mann-Whitney test).

Table S4 - Pre- and post-transfusion comparison of perfusion parameters and hemoglobin levels in patients without signs of hypoperfusion

Groups	Liberal	Restrictive	p value*
Normal baseline lactate			
	(N = 25)	(N = 15)	
Hemoglobin (g/dL)			
PreT Hb	8.5 (8.2 to 8.7)	6.7 (6.7 to 6.8)	< 0.0001
PosT Hb	9.4 (9.2 to 9.5)	7.6 (7.5 to 7.8)	< 0.0001
Difference	0.9 (0.8 to 1.1)	0.9 (0.8 to 1.1)	
p value [#]	< 0.0001	0.001	
ScvO ₂ (%)			
PreT ScvO ₂	72.0 (71.0 to 74.5)	71.0 (68.0 to 72.0)	0.14
PosT ScvO ₂	71.0 (70.0 to 73.0)	74.0 (72.0 to 77.0)	0.004
Difference	- 1.0 (- 3.0 to 2.0)	3.0 (2.0 to 5.0)	
P value [#]	0.21	0.002	
Lactate (mMol/L)			
PreT lactate	1.80 (1.48 to 1.91)	1.91 (1.81 to 2.12)	0.05
PosT lactate	1.80 (1.41 to 2.02)	1.81 (1.61 to 2.12)	0.57
Difference	0.00 (- 0.10 to 0.19)	- 0.09 (- 0.30 to 0.28)	
p value [#]	0.41	0.89	
Baseline ScvO ₂ > 70%			
	(N = 21)	(N = 10)	
Hemoglobin (g/dL)			
PreT Hb	8.5 (8.2 to 8.7)	6.7 (6.6 to 6.8)	< 0.0001
PosT Hb	9.4 (9.2 to 9.5)	7.6 (7.5 to 7.8)	< 0.0001
Difference	0.9 (0.8 to 1.1)	0.9 (0.8 to 0.9)	
p value [#]	< 0.0001	0.004	
ScvO ₂ (%)			
PreT ScvO ₂	72.0 (71.0 to 74.0)	71.5 (71.0 to 72.2)	0.17
PosT ScvO ₂	72.0 (70.0 to 73.0)	73.0 (71.7 to 76.7)	0.10
Difference	- 1.0 (- 2.0 to 2.0)	2.5 (0.7 to 4.25)	
p value [#]	0.49	0.02	
Lactate (mMol/L)			
PreT lactate	1.86 (1.48 to 2.56)	2.18 (1.80 to 2.44)	0.17
PosT lactate	1.90 (1.60 to 2.21)	2.11 (1.80 to 2.47)	0.32
Difference	- 0.06 (- 0.10 to 0.19)	- 0.20 (- 0.38 to 0.28)	
p value [#]	0.71	0.38	

Hb - hemoglobin; ScvO₂ - central venous oxygen saturation; PreT - pre transfusion; PosT - post transfusion. The results are expressed as median (25 - 75%). * p value refers to comparison within the same group (Wilcoxon rank test). # p value refers to differences between groups (Mann-Whitney test).

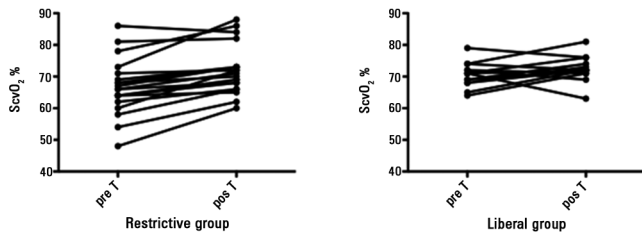


Figure S1 - Pre- and post-transfusion central venous oxygen saturation levels in the subgroup with low baseline central venous oxygen saturation levels. In both groups (i.e., liberal and restrictive), the central venous oxygen saturation levels improved after transfusion ($p < 0.05$, Wilcoxon paired test). ScvO₂ - central venous oxygen saturation; PreT - pre transfusion; PosT - pos transfusion.