

ESM Table 1. Lactate values during the first 72 hours in ICU in 6 hour intervals  
 Values are presented as medians and IQR

Time of lactate measurement	Lactate (mmol/L)			
	90-day survivors	Number of patients with observations	90-day non-survivors	Number of patients with observations
0-6 hours	1.80 (1.15-3.30)	336	2.90 (1.70-5.90)	160
6-12 hours	1.60 (1.10-2.83)	307	2.50 (1.50-5.30)	138
12-18 hours	1.40 (1.00-2.47)	294	2.40 (1.30-4.60)	120
18-24 hours	1.35 (1.00-2.20)	300	2.20 (1.20-4.30)	119
24-30 hours	1.40 (1.00-2.00)	267	2.30 (1.30-5.13)	105
30-36 hours	1.38 (0.90-2.00)	264	1.90 (1.20-3.90)	107
36-42 hours	1.30 (0.90-1.80)	262	1.80 (1.10-3.60)	100
42-48 hours	1.20 (0.90-1.70)	256	1.80 (1.30-3.23)	105
48-54 hours	1.30 (0.90-1.80)	226	1.60 (1.10-2.83)	97
54-60 hours	1.20 (0.80-1.70)	223	1.58 (1.10-2.78)	97
60-66 hours	1.20 (0.90-1.70)	216	1.50 (1.10-2.40)	85
66-72 hours	1.20 (0.90-1.66)	210	1.35 (1.00-2.18)	84

During the first 72 hours, 53/513 (10.3 %) died in the ICU while 122 (23.8%) patients were discharged alive.

ESM table 2

90-day mortality rate divided by admission lactate in patients with lactate measurement at 72 hours after ICU admission

	Lactate > 2.0 mmol/L,	Lactate ≤ 2.0 mmol/L	p-value
Lactate measurement at 72 +/- 2 hours	52.0% (26/ 50)	24.3% (61/251)	< 0.001
Lactate measurement at 72 hours or last available measurement	69.4% (75/108)	21.9 % (85/388)	<0.001

ESM. Table 3. Multivariable backward regression analyses regarding associations between blood lactate and 90-day mortality in 262 patients with admission lactate >2 mmol/L according to the new criteria for septic shock (Sepsis-3 (9))

PATIENTS WITH ADMISSION LACTATE > 2 mmol/L and vasopressor treatment	Model 1 Admission lactate		Model 2 Lactate at 72 hours		Model 3 Time weighted mean lactate		Model 4 Hours to normalization of lactate		Model 5 Lactate over 2 mmol/L at 72 hours	
	OR (CI 95%)	P	OR (CI 95%)	P	OR (CI 95%)	P	OR (CI 95%)	P	OR (CI 95%)	P
Chronic liver disease	3.19 (1.21-9.71)	0.041	2.60 (0.86-7.89)	0.091	2.56 (0.92-7.09)	0.071	3.28 (1.13-9.52)	0.029	3.12 (1.05-9.31)	0.041
AKI; highest KDIGO stage	0.79 (0.57-1.09)	0.15	0.85 (0.61-1.19)	0.35	0.82 (0.61-1.09)	0.17	0.91 (0.67-1.22)	0.52	0.86 (0.60-1.24)	0.42
SAPS II; 24 hours	1.07 (1.04-1.09)	<0.001	1.03 (1.00-1.05)	0.023	1.05 (1.03-1.07)	<0.001	1.05 (1.03-1.07)	<0.001	1.03 (1.00-1.05)	0.024
SOFA score; day 1	1.11 (0.96-1.29)	0.16	1.06 (0.89-1.27)	0.51	1.10 (0.94-1.28)	0.23	1.06 (0.91-1.24)	0.46	1.05 (0.90-1.23)	0.53
Epinephrine used during first 24 hours	3.72 (1.23- 11.22)	0.020	1.55 (0.38-6.35)	0.54	2.30 (0.70-7.62)	0.17	1.68 (0.45-6.31)	0.45	1.37 (0.33-5.73)	0.67
Norepinephrine; highest dose during first 24 hours	1.60 (0.74-3.49)	0.24	1.00 (0.46-2.17)	0.99	1.17 (0.61-2.23)	0.64	1.51 (0.77-2.97)	0.23	0.93 (0.42-2.02)	0.84
Admission lactate	0.97 (0.89-1.06)	0.48								
Lactate value at 72 hours			1.47 (1.09-2.00)	0.012						
Time weighted mean lactate					1.60(1.27-2.01)	<0.001				
Normalization of lactate; hours							1.00 (0.98-1.00)	0.49		
Lactate value over 2 mmol/L at 72 hours									3.24 (1.46-7.18)	0.004

