

Supplementary Table1 Comparison of demographic, perfusion markers, severity scores in groups 1 and 2, and within the subgroups of Group 1

	All patients	Group 2		Group 1															
		By any criteria	P value	By ScvO ₂	P value	By PCO ₂ gap	P value	By CRT	P value	By ScvO ₂ + PCO ₂	P value	By ScvO ₂ + CRT	P value	By PCO ₂ gap + CRT	P value	By all criteria	P value		
<i>n</i>	135	40	95	42	57	70	13	11	31	10									
Age	61.95 ± 14.51	61.03 ± 15.1	62.34 ± 14.31	0.843	67.19 ± 12.65	0.004	62.35 ± 13.96	0.988	61.4 ± 14.1	0.247	69.77 ± 12.12	0.046	65.73 ± 17.77	0.303	61.35 ± 13.82	0.674	64.4 ± 8.82	0.808	
APACHE II	21.7 ± 5.6	23.78 ± 5.41	20.82 ± 5.47	0.002*	20.76 ± 5.61	0.991	20.65 ± 5.52	0.645	20.91 ± 5.49	0.993	20.62 ± 7.59	0.741	21.82 ± 4.92	0.470	21.1 ± 5.33	0.861	19.6 ± 4.97	0.440	
SOFA score	9.15 ± 3.99	8.88 ± 3.44	9.26 ± 4.22	0.751	8.86 ± 4.08	0.421	9.42 ± 4.46	0.831	9.27 ± 4.2	0.956	9.23 ± 5.26	0.815	8.09 ± 3.91	0.321	9.52 ± 4.43	0.673	9 ± 3.83	0.793	
Lactate	0	4.84 ± 1.7	4.76 ± 1.75	4.87 ± 1.69	0.594	4.62 ± 1.54	0.220	5.1 ± 1.52	0.031	5.14 ± 1.69	0.005	4.76 ± 1.97	0.540	4.71 ± 1.87	0.584	5.48 ± 1.47	0.005	5.28 ± 0.88	0.142
	3h	4.1 ± 2.02	3.82 ± 2.06	4.22 ± 2.0	0.160	3.68 ± 1.34	0.060	4.5 ± 1.9	0.018	4.5 ± 2.12	0.015	3.83 ± 1.51	0.603	3.93 ± 1.43	0.903	5.08 ± 2.04	0.001	4 ± 1.38	0.976
	6h	3.9 ± 3.15	3.88 ± 3.48	3.91 ± 3.01	0.700	3.35 ± 2.43	0.102	4.25 ± 2.93	0.037	4.02 ± 2.93	0.149	3.73 ± 3.13	0.765	3.07 ± 1.64	0.439	4.49 ± 2.55	0.012	3.75 ± 2.57	0.882
CRT	0h	4.3 ± 2.3	2.3 ± 0.7	5.1 ± 2.2	< 0.001	4.3 ± 2.1	< 0.001	5.1 ± 2.2	0.917	6 ± 1.8	< 0.001	3.5 ± 2.1	0.001	5.1 ± 1.8	0.920	6 ± 2.0	0.003	6.2 ± 1.5	0.050
	3h	4.4 ± 2.6	3.6 ± 2.0	4.7 ± 2.7	0.011	4.1 ± 2.4	0.055	5 ± 2.8	0.240	5.2 ± 2.7	0.001	3.3 ± 1.9	0.037	3.6 ± 1.6	0.198	5.4 ± 2.9	0.105	6.5 ± 2.3	0.014
	6h	4.3 ± 3.3	3.9 ± 3.2	4.5 ± 3.3	0.255	4 ± 3.0	0.097	4.8 ± 3.5	0.528	5 ± 3.3	0.005	3.7 ± 3.2	0.178	3.5 ± 2.4	0.258	5 ± 3.6	0.441	6.2 ± 3.2	0.04
ScvO ₂	0h	66.7 ± 8.4	71.8 ± 1.3	64.5 ± 9.1	< 0.001	55.4 ± 6.0	< 0.001	64.9 ± 9.9	0.376	66.9 ± 8.1	< 0.001	52.3 ± 6.2	< 0.001	57.7 ± 3.6	0.007	71.8 ± 1.1	< 0.001	54.6 ± 7.2	< 0.001
	3h	61.2 ± 6.6	63.8 ± 4.7	60.1 ± 7.0	0.002	55.9 ± 5.9	< 0.001	60.3 ± 7.8	0.344	60.9 ± 6.9	0.036	54.2 ± 5.5	< 0.001	57.7 ± 4.3	0.089	63.3 ± 6.7	< 0.001	54.7 ± 7.6	0.014
	6h	59.8 ± 8.6	62.4 ± 6.8	58.6 ± 9.0	0.010	55.3 ± 8.2	0.001	58.5 ± 9.8	0.737	59.1 ± 8.6	0.722	53.5 ± 8.9	0.036	56 ± 8.0	0.239	60.8 ± 10.2	0.165	54.8 ± 5.1	0.052
P(cv-a)CO ₂	0h	5.9 ± 1.9	4.2 ± 0.8	6.6 ± 1.8	< 0.001	6.4 ± 1.7	0.223	7.8 ± 1.0	< 0.001	6.6 ± 1.8	0.758	7.5 ± 1.3	0.104	4.8 ± 0.6	< 0.001	7.9 ± 0.8	< 0.001	7.9 ± 0.9	0.013
	3h	5.6 ± 1.9	5.1 ± 1.5	5.8 ± 2.0	0.035	5.7 ± 1.9	0.544	6.4 ± 2.1	0.002	6 ± 2.0	0.138	5.1 ± 1.5	0.176	5.1 ± 1.3	0.309	6.4 ± 2.2	0.084	7.7 ± 1.9	0.002
	6h	5.8 ± 4.2	5.9 ± 6.9	5.7 ± 2.3	0.059	5.4 ± 2.4	0.143	6.1 ± 2.3	0.037	5.9 ± 2.3	0.065	5.1 ± 2.0	0.280	4.7 ± 2.2	0.046	6.3 ± 2.4	0.137	7 ± 2.3	0.027

P-value < 0.05 denotes statistical significance. Values are expressed as Mean ± SD. APACHE: Acute Physiology and Chronic Health Evaluation; CRT: Capillary refill time; NORAD: Noradrenaline; P(cv-a)CO₂: Central venous-arterial pCO₂ gradient; ScvO₂: Central venous oxygen saturation; SOFA: Sequential Organ Failure Assessment.

Supplementary Table2 Comparison primary and secondary outcomes in groups 1 and 2, and within the subgroups of Group 1

		All patients	Group 2	Group 1															
				By any criteria	P value	By ScvO ₂	P value	By PCO ₂ gap	P value	By CRT	P value	By ScvO ₂ + PCO ₂	P value	By ScvO ₂ + CRT	P value	By PCO ₂ gap + CRT	P value	By all criteria	P value
<i>n</i>		135	40	95		42		57		70		13		11		31		10	
Fluids administered	0 h	1349.84 ± 170.01	1307.3 ± 3	1367.75 ± 180.52	0.045	1372.33 ± 174.51	0.559	1373.3 ± 184.47	0.997	1361.9 ± 189.41	0.375	1446.54 ± 144.6	0.053	1346.82 ± 210.68	0.767	1354.84 ± 203.12	0.315	1349.6 ± 174.23	0.698
	6 h	2943.64 ± 580.92	2737.2 ± 3	3030.56 ± 585.47	0.008	2949.5 ± 580.13	0.244	3042.4 ± 617.15	0.900	3116.5 ± 569.34	0.013	2841.62 ± 533.09	0.201	2946.82 ± 636.58	0.675	3077.35 ± 626.21	0.694	3269 ± 542.75	0.152
	24 h	6904.67 ± 1574.54	6626.1 ± 8	7021.93 ± 1600.52	0.179	7040.1 ± 1635.98	0.964	7043.12 ± 1650.49	0.958	7178 ± 1515.75	0.073	6987.31 ± 1725.79	0.803	6968.36 ± 1575.68	0.944	6903.32 ± 1647.87	0.557	7857.9 ± 1203.38	0.057
NORAD dose (mcg/kg/min)	0 h	0.19 ± 0.14	0.17 ± 0.1	0.2 ± 0.15	0.4	0.19 ± 0.14	0.504	0.23 ± 0.18	0.093	0.22 ± 0.16	0.006	0.17 ± 0.11	0.676	0.16 ± 0.11	0.358	0.24 ± 0.2	0.543	0.32 ± 0.16	0.002
	3 h	0.28 ± 0.27	0.24 ± 0.17	0.29 ± 0.3	0.739	0.23 ± 0.21	0.083	0.35 ± 0.35	0.043	0.33 ± 0.32	0.005	0.17 ± 0.08	0.145	0.17 ± 0.18	0.056	0.42 ± 0.42	0.044	0.41 ± 0.25	0.015
	6 h	0.24 ± 0.26	0.21 ± 0.18	0.26 ± 0.29	0.855	0.21 ± 0.24	0.133	0.3 ± 0.34	0.227	0.29 ± 0.32	0.013	0.15 ± 0.14	0.192	0.15 ± 0.18	0.118	0.33 ± 0.39	0.395	0.4 ± 0.32	0.018
Vasopressor free days within 28 d		19.53 ± 8.98	21.08 ± 8.76	18.88 ± 9.04	0.011	20.31 ± 8.24	0.055	17.91 ± 9.71	0.311	18.3 ± 9.24	0.055	21.46 ± 7.76	0.079	21.27 ± 6.5	0.413	16.65 ± 10.5	0.203	17.9 ± 9.77	0.396
Days free-of mv within 28		19.93 ± 11.28	21.8 ± 10.76	19.14 ± 11.46	0.163	20.6 ± 11.09	0.186	18.21 ± 11.8	0.350	18.34 ± 11.84	0.261	22.15 ± 10.22	0.277	18.27 ± 12.51	0.893	16.13 ± 12.13	0.051	20.4 ± 12.43	0.543
Days on MV		5.21 ± 10	3.25 ± 6.8	6.04 ± 11	0.123	4.81 ± 8.88	0.221	5.46 ± 9.09	0.710	6.79 ± 12.11	0.362	4.08 ± 8.2	0.353	9.09 ± 12.85	0.552	6.68 ± 10.33	0.156	2.7 ± 6.25	0.292
RRT free days within 28 d		25.02 ± 7.88	25.45 ± 7.78	24.84 ± 7.96	0.442	25.12 ± 7.86	0.772	24.21 ± 8.83	0.499	25.2 ± 7.48	0.48	24.15 ± 9.4	0.959	26.91 ± 3.62	0.464	24.23 ± 8.71	0.511	25.3 ± 8.54	0.674
Hospital stay		17.56 ± 11.67	16.28 ± 8.21	18.11 ± 12.86	0.927	16.02 ± 9.57	0.324	17.51 ± 12.42	0.695	19.03 ± 14.16	0.496	15.31 ± 8.73	0.484	17.45 ± 10.82	0.930	18.29 ± 14.66	0.830	16.7 ± 11.45	0.860
ICU stay		9.3 ± 6.27	8.65 ± 4.8	9.57 ± 6.8	0.942	9.1 ± 6.46	0.555	9.11 ± 6.82	0.288	9.84 ± 7.17	0.653	8.85 ± 6.79	0.536	10.18 ± 6.05	0.575	8.94 ± 6.81	0.412	9.1 ± 8.28	0.644
28-d mortality		29 (21.4%)	23 (24.2%)	6 (15%)	0.234	16.7%	0.127	29.8%	0.118	25.7%	0.567	7.7%	0.135	18.2%	0.620	38.7%	0.022	20.0%	0.742

P-value < 0.05 denotes statistical significance. Values are expressed as Mean ± SD. ICU: Intensive care unit; MV: Mechanical ventilation; NORAD: Noradrenaline; P(cv-a)CO₂: Central venous-arterial pCO₂ gradient; RRT: Renal replacement therapy; ScvO₂: Central venous oxygen saturation.