

Supplementary Table SI. Baseline characteristics of the study cohort - treatment applied before hospitalization

Variables units (N)	Low risk [0–1] n/N (% of risk category)	Medium risk [2–3] n/N (% of risk category)	High risk [> 4] n/N (% of risk category)	Omnibus p-value	P-value (for post-hoc analysis)
Treatment applied before hospitalization					
ACEI (2184)	116/1418 (98.2%)	120/492 (24.4%)	116/274 (42.3%)	< 0.0001	< 0.0001 ^{a,b,c}
ARB (2184)	76/1418 (5.4%)	38/492 (7.7%)	30/274 (10.9%)	0.0015	0.217 ^a , 0.0024 ^b , 0.51 ^c
MRA (2184)	18/1418 (1.3%)	33/492 (6.7%)	49/274 (17.9%)	< 0.0001	< 0.0001 ^{a,b,c}
SACU/VAL (2184)	6/1418 (0.4%)	3/492 (0.6%)	1/274 (0.4%)	0.888	N/A
BB (2184)	197/1418 (13.9%)	179/492 (36.4%)	157/274 (57.3%)	< 0.0001	< 0.0001 ^{a,b,c}
Cardiac glycosides (2184)	3/1418 (0.2%)	6/492 (1.2%)	10/274 (3.6%)	< 0.0001	0.034 ^a , < 0.0001 ^b , 0.099 ^c
NonDP-CCB (2184)	1/1418 (0.8%)	13/492 (2.6%)	14/274 (5.1%)	< 0.000	0.0101 ^a , < 0.0001 ^b , 0.301 ^c
DP-CCB (2184)	103/1418 (7.3%)	84/492 (17.1%)	74/274 (27.0%)	< 0.0001	< 0.0001 ^{a,b} , 0.00467 ^c
AB (2184)	45/1418 (3.2%)	34/492 (6.9%)	39/274 (14.2%)	< 0.0001	0.0017 ^a , < 0.0001 ^b , 0.0044 ^c
ThD/ThLD (2184)	68/1418 (4.8%)	47/492 (9.6%)	35/274 (12.8%)	< 0.000	0.0006 ^a < 0.0001 ^b 0.623 ^c
LD (2184)	39/1418 (2.8%)	65/492 (13.2%)	81/274 (29.6%)	< 0.0001	< 0.0001 ^{a,b,c}
Statin (2184)	103/1418 (7.3%)	121/492 (24.6%)	126/274 (46.0%)	< 0.0001	< 0.0001 ^{a,b,c}
AA (2184)	81/1418 (5.7%)	95/492 (19.3%)	82/274 (29.9%)	< 0.000	< 0.0001 ^{a,b} , 0.0034 ^c
P ₂ Y ₁₂ inhibitor (as the 2 nd antiplatelet drug) (2184)	7/1418 (0.5%)	10/492 (2.0%)	22/274 (8.0%)	< 0.0001	0.0228 ^a , < 0.0001 ^{b,c}
LMWH (184)	74/1418 (5.2%)	41/492 (8.3%)	26/274 (9.5%)	0.0049	0.05 ^a , 0.0276 ^b , 1.0 ^c
VKA (2184)	10/1418 (0.7%)	14/492 (2.8%)	23/274 (8.4%)	< 0.0001	0.0018 ^a , 0.0016 ^b , 0.0034 ^c
NOAC (2184)	18/1418 (1.3%)	37/492 (7.5%)	52/274 (19.0%)	< 0.0001	< 0.0001 ^{a,b,c}
Insulin (2184)	62/1418 (4.4%)	29/492 (6.0%)	40/274 (14.6%)	< 0.0001	0.642 ^a , < 0.0001 ^b , 0.0003 ^c
MTF (2184)	104/1418 (7.3%)	67/492 (13.6%)	51/274 (18.6%)	< 0.0001	0.00012 ^a , < 0.0001 ^b , 0.25 ^c
SGLT2 inhibitor (2184)	11/1418 (0.8%)	7/492 (1.4%)	9/274 (3.3%)	0.0049	0.826 ^a , 0.0065 ^b , 0.336 ^c
ODD (other than SGLT2 inhibitor/MTF) (2184)	27/1418 (1.9%)	34/492 (6.9%)	28/274 (10.2%)	< 0.0001	< 0.0001 ^{a,b} , 0.424 ^c
PPI (2184)	89/1418 (6.3%)	75/492 (15.2%)	86/274 (31.4%)	< 0.0001	< 0.0001 ^{a,b,c}
Oral CCS (2184)	62/1418 (4.4%)	24/492 (4.9%)	7/274 (2.6%)	0.1819	N/A
immunosuppressive drug (other than oral CCS) (2184)	49/1418 (3.5%)	22/492 (4.5%)	2/274 (0.7%)	0.0204	1.0 ^a , 0.0793 ^b , 0.0254 ^c

Categorized variables are presented as a percentage. Information about the numbers with valid values can be found in the left column. N – valid measurements, n – number of patients with parameters above the cut-off point. ACEI – angiotensin-converting-enzyme inhibitor, ARB – angiotensin receptor blockers. AA – acetylsalicylic acid, AB – α -adrenergic blocker, BB – β -blocker, CCS – corticosteroid, DP-CCB – dihydropyridine calcium channel blocker, LD – loop diuretic, LMWH – low molecular weight heparin, MRAs - mineralocorticoid receptor antagonist, MTF – metformin, NOAC – novel oral anticoagulants, NonDP-CCB – non-dihydropyridine calcium channel blocker, ODD – oral antidiabetic drug, PPI – proton pump inhibitor, SACU/VAL – sacubitril/valsartan, SGLT2 inhibitor – sodium glucose co-transporter-2 inhibitor, ThD/ThLD thiazide/thiazide-like diuretic, VKA – vitamin K antagonists, N/A – non-applicable, a – low- risk vs. medium-risk. b – low- vs. high-risk. c – medium- vs. high-risk.

Supplementary Table SII. Patient-reported symptoms and abnormalities measured on admission during physical exam

Variables, units (N)	Low risk [0-1]	Medium risk [2-3]	High risk [>4]	Omnibus p-value	P-value (for post-hoc analysis)
	Mean ± SD Min.–max. (N) or n/N (% of risk category)	Mean ± SD Min.–max. (N) or n/N (% of risk category)	Mean ± SD Min.–max. (N) or n/N (% of risk category)		
Patient-reported symptoms					
Cough (2184)	455/1418 (32.1%)	124/492 (25.2%)	69/274 (25.2%)	0.0035	0.0151 ^a , 0.0852 ^b , 1.0 ^c
Dyspnea (2184)	569/1418 (40.1%)	206/492 (41.9)	146/274 (53.3%)	0.0003	1.0 ^a , 0.0002 ^b , 0.0091 ^c
Chest pain (2184)	102/1418 (7.2%)	34/492 (6.9%)	27/274 (9.9%)	0.213	N/A
Hemoptysis (2184)	9/1418 (0.6%)	2/492 (0.4%)	4/274 (1.5%)	0.22	N/A
SMD (2184)	61/1418 (4.3%)	10/492 (2.0%)	5/274 (1.8%)	0.017	0.0937 ^a , 0.231 ^b , 1.0 ^c
TED (2184)	49/1418 (3.5%)	10/492 (2.0%)	7/274 (2.6%)	0.252	N/A
Abdominal pain (2184)	104/1418 (7.3%)	26/492 (5.3%)	17/274 (6.2%)	0.275	N/A
Diarrhea (2184)	75/1418 (5.3%)	33/492 (6.7%)	19/274 (6.9%)	0.357	N/A
Nausea/vomiting (2184)	57/1418 (4.0%)	27/492 (5.5%)	14/274 (5.1%)	0.346	N/A
Measured vital signs					
Body temperature, °C (1186)	37.1+0.88 34.4 - 40.5 (810)	36.9+0.9 35.0 - 40.0 (235)	36.9+0.86 35.2 - 40.0 (141)	0.0552	N/A
Heart rate, beats/minute (1672)	86.4 + 15.63 48 – 160 (1045)	84.1+16.48 50 – 160 (387)	84.8+18.79 36 – 170 (240)	0.0442	0.048 ^a , 0.418 ^b , 0.902 ^c
RR, breaths/minute (318)	18.4+5.78 12 – 50 (204)	18.7+5.45 12 – 45 (68)	19.3+6.09 12 – 50 (46)	0.618	N/A
SBP, mmHg (1669)	130.7+21.28 60 – 240 (1040)	134.2+25.36 50 – 270 (385)	134.5+24.7 70 – 210 (244)	0.0107	0.041 ^a , 0.071 ^b , 0.991 ^c
< 100 mmHg (1669)	45/1040 (4.3%)	18/385 (4.7%)	15/244 (6.15%)	0.479	N/A
DBP, mmHg (1661)	78.5+12.68 40 – 150 (1037)	78.1+13.67 40 – 157 (380)	75.8+15.3 40 – 143 (244)	0.0319	0.813 ^a , 0.024 ^b , 0.141 ^c
MAP, mmHg (1660)	96.0+14.25 46.7 - 179 (1037)	97.2+15.51 59.7 - 190 (379)	95.3+16.71 50 - 165.33 (244)	0.317	N/A
PP (1660)	52.3+15.3 11 - 136 (1037)	57.2+18.44 20 - 120 (379)	58.7+19.0 20 - 130 (244)	< 0.0001	< 0.0001 ^{a,b} , 0.581 ^c
SpO2 on room air, % (FiO2 = 21%) (1263)	92.8+7.12 48 – 100 (815)	89.7+9.64 50 – 100 (281)	90.2+8.54 50 – 99 (167)	< 0.0001	< 0.000 ^a , 0.0006 ^b , 0.848 ^c
	183/815 (22.5%)	102/281 (36.3%)	57/167 (34.1%)	< 0.0001	< 0.0001 ^a , 0.0058 ^b , 1.0 ^c
GCS, points (884)	14.7+1.78 3.0 - 15.0 (575)	14.5+1.68 3.0 - 15.0 (191)	14.1+2.43 3.0 - 15.0 (118)	0.0645	N/A
Abnormalities detected during physical examination					
Crackles (2184)	154/1418 (10.9%)	99/492 (20.1%)	66/274 (24.1%)	< 0.0001	< 0.0001 ^{a,b} , 0.704 ^c
Wheezing (2184)	94/1418 (6.6%)	56/492 (11.4%)	69/274 (25.2%)	< 0.0001	0.00312 ^a , < 0.0001 ^{b,c}
PC (2184)	184/1418 (13.0%)	105/492 (21.3%)	78/274 (28.5%)	< 0.0001	< 0.0001 ^{a,b} , 0.0999 ^c
PO (2184)	76/1418 (5.4%)	60/492 (12.2%)	53/274 (19.3%)	< 0.0001	< 0.0001 ^{a,b} , 0.0307 ^c
VES-13, points (90)	4.1+2.86 1 – 9 (28)	5.6+3.33 1 – 12 (37)	6.5+2.89 3 – 13 (25)	0.0155	0.132 ^a , 0.013 ^b , 0.552 ^c

Continuous variables are presented as: mean \pm SD, range (min-max), and number of non-missing values. Categorized variables are presented as a percentage. Information about numbers with valid values can be seen in the left column. Abbreviations: SD – standard deviation, ANOVA – analysis of variance, N – valid measurements, n – number of patients with parameter above cut-off point, GCS – Glasgow Coma Scale, DBP – diastolic blood pressure, MAP – mean blood pressure, PC – pulmonary congestion, PO – peripheral edema, PP - Pulse pressure, RR – respiratory rate, SBP – systolic blood pressure, SMD – smell dysfunction, TED – taste dysfunction, VES-13 – Vulnerable Elders Survey, N/A – not-applicable, a – *low-* vs. *medium-*risk, b – *low-* vs. *high-*risk, c – *medium-* vs. *high-*risk

Supplementary Table SIII. Laboratory parameters measured during hospitalization

Parameter	Assessment time	Units	Low risk [0–1]	Medium [2–3]	High risk > 4]	Omnibus <i>p</i> -value	<i>P</i> -value (for post-hoc analysis)		
			Mean ± SD Min.–max. (N) or <i>n</i> / <i>N</i> (% of risk category) (N)	Mean ± SD Min.–max. (N) or <i>n</i> / <i>N</i> (% of risk category) (N)	Mean ± SD Min.–max. (N) or <i>n</i> / <i>N</i> (% of risk category) (N)				
Complete blood count									
LEU (2050)	On admission	10 ³ /μl	9.0±12.34 0.51-304.02 (1302)	9.4±11.48 0.51-215.97 (480)	9.3±7.97 1.19-99.73 (268)	0.8003	N/A		
		>12 x10 ³ /μl	202/1302 (15.5%)	84/480 (17.5%)	53/268 (19.8%)	0.4281	N/A		
		4-12 x10 ³ /μl	971/1302 (74.6%)	345/480 (71.9%)	191/268 (71.3%)				
		<4 x10 ³ /μl	129/1302 (9.9%)	51/480 (10.6%)	24/268 (9%)				
	On discharge	10 ³ /μl	9.1±10.83 0.67-342.01 (1302)	10.6±16.33 0.44-314.44 (480)	10.1±7.18 1.19-58.49 (268)	0.0663	N/A		
		>12 x10 ³ /μl	201/1302 (15.4%)	103/480 (21.5%)	65/268 (24.3%)	0.00046	0.007 ^a , 0.006 ^b		
		4-12 x10 ³ /μl	1017/1302 (78.1%)	337/480 (70.2%)	188/268 (70.1%)		0.927 ^c		
		<4 x10 ³ /μl	84/1302 (6.5%)	40/480 (8.3%)	15/268 (5.6%)				
LYMPH (1296)	On admission	10 ³ /μl	1.65±10.81 0.03-296.61 (764)	1.2±1.09 0.11-12.1 (331)	1.4±5.51 0.09-78.58 (201)	0.4150	N/A		
		<1 x10 ³ /μl	383/764 (50.1%)	175/331 (52.9%)	118/201 (58.7%)	0.2667	N/A		
		1-5 10 ³ /μl	373/764 (48.8%)	152/331 (45.9%)	82/201 (40.8%)				
		>5 x10 ³ /μl	8/764 (1.0%)	4/331 (1.2%)	1/201 (0.5%)				
	On discharge	10 ³ /μl	1.9±4.41 0.06-114.12 (764)	1.5±1.84 0.05-26.71 (331)	1.5±4.8 0.14-66.97 (201)	0.1052	N/A		
		<1 x10 ³ /μl	176/764 (23.0%)	113/331 (34.1%)	109/201 (54.2%)	<0.0001	0.001 ^a		
		1-5 10 ³ /μl	578/764 (75.7%)	213/331 (64.4%)	89/201 (44.3%)		<0.0001 ^{b, c}		
		>5 x10 ³ /μl	10/764 (1.3%)	5/331 (1.5%)	3/201 (1.5%)				
NEUTR (1299)	On admission	10 ³ /μl	6.6±5.06 0.44-53.64 (765)	6.8±4.5 0.68-33.61 (333)	7.1±5.08 0.23-29.85 (201)	0.3951	N/A		
		<1.5 x10 ³ /μl	21/765 (2.7%)	9/333 (2.7%)	5/201 (2.5%)	0.8721	N/A		
		1.5-810 ³ /μl	550/765 (71.9%)	231/333 (69.4%)	139/201 (69.2%)				
		>8 x10 ³ /μl	194/765 (25.4%)	93/333 (27.9%)	57/201 (28.4%)				
	On discharge	10 ³ /μl	6.6±4.81 0.22-44.09 (765)	7.5±6.09 0-41.13 (333)	7.5±4.9 0.32-23.22 (201)	0.007	0.034 ^a , 0.042 ^b		
		<1.5 x10 ³ /μl	16/765 (2.1%)	7/333 (2.1%)	3/201 (1.5%)	0.0035	0.153 ^a		
		1.5-810 ³ /μl	576/765 (75.3%)	228/333 (68.5%)	127/201 (63.2%)		0.004 ^b		
		>8 x10 ³ /μl	173/765 (22.6%)	98/333 (29.4%)	71/201 (35.3%)		1.0 ^c		
Hb (2050)	On admission	g/dL	13.3±2.15 3.9-20.3 (1302)	12.6±2.31 4.5-18.9 (480)	12.0±2.48 5.3-18.8 (268)	<0.0001	<0.0001 ^{a, b} , 0.003 ^c		
		<12 (F), 13 (M) g/dL	346/1302 (26.6%)	195/480 (40.6%)	148/268 (55.2%)	<0.0001	<0.0001 ^{a, b} 0.0005 ^c		
		≥12 (F), 13 (M) g/dL	956/1302 (73.4%)	285/480 (59.4%)	120/268 (44.8%)		N/A		
		on discharge	12.7±2.23 5.3-18.7 (1302)	12.0±2.3 4.5-18.9 (480)	12.0±2.34 5.5-17.6 (268)	<0.0001	<0.0001 ^{a, b} , 0.056 ^c		
	on discharge	<12 (F), 13 (M) g/dL	511/1302 (39.2%)	258/480 (53.8%)	172/268 (64.2%)	<0.0001	<0.0001 ^{a, b} 0.021 ^c		
		≥12 (F), 13 (M) g/dL	791/1302 (60.8%)	222/480 (46.3%)	96/268 (35.8%)		N/A		
		MCV (2050)	On admission	fL	89.4 ±5.68 61.8-131.1 (1302)	89.8±6.89 60.5-124.8 (480)	90.6±6.91 62.5-116.2 (268)	0.0185	0.354 ^a , 0.022 ^b
				on discharge	90.1±5.6	91.0±6.77	91.2±6.07	0.0031	0.027 ^a

			61.8-120.6 (1302)	68.4-123.1 (480)	70.7-95.0 (268)		0.023 ^b , 0.933 ^c	
MCH (2050)	On admission	pg	30.0±2.25	30.0±2.88	30.0±2.76	0.865	N/A	
			16.5-46.6 (1302)	30.1-43.5 (480)	18.1-39.8 (268)			
	on discharge		29.9±2.08	29.9±2.59	29.7±2.41	0.432	N/A	
			16.5-37.3 (1302)	19.0-40.7 (480)	20.1-35.1 (268)			
MCHC (2050)	On admission	g/dL	33.6±1.42	33.3±1.72	33.0±1.66	<0.0001	0.005 ^a , <0.0001 ^b	
			24.6-39.9 (1302)	24.7-38.7 (480)	27.5-38.8 (268)		0.108 ^c	
	on discharge		33.2±1.46	32.8±1.66	32.6±1.42	<0.0001	<0.0001 ^{a, b}	
			24.9-39.9 (1302)	27.4-40.0 (480)	27.2-36.6 (268)		0.061 ^c	
RETICU (195)	On admission	x 10 ⁹ /L	59.7±33.69	55.7±34.67	59.5±35.37	0.758	N/A	
			5.3-137.6 (103)	10.1-224.4 (63)	4.5-142.3 (29)			
	on discharge		61.3±33.47	58.4±40.60	55.9±35.82	0.733	N/A	
			4.9-137.6 (103)	7.0-230.3 (63)	9.1-162.4 (29)			
PLT (2050)	On admission	x10 ³ /μl	235.9±108.85	230.1±113.91	216.8±93.38	0.0126	0.598 ^a , 0.009 ^b	
			0-1356 (1302)	3-740 (480)	8-578 (268)		0.2 ^c	
	On discharge	>450	52/1302 (4.0%)	24/480 (5.0%)	7/268 (2.6%)	0.125	N/A	
			400-450	37/1302 (2.8%)	11/480 (2.3%)	5/268 (1.9%)		
			150-400	992/1302 (76.2%)	343/480 (71.5%)	195/268 (72.8%)		
			100-150	172/1302 (13.2%)	70/480 (14.6%)	41/268 (15.3%)		
			50-100	38/1302 (2.9%)	26/480 (5.4%)	15/268 (5.6%)		
			20-50	6/1302 (0.5%)	3/480 (0.6%)	3/268 (1.1%)		
			<20	5/1302 (0.4%)	3/480 (0.6%)	2/268 (0.7%)		
	On admission	x10 ³ /μl	270.9±128.32	245.3±121.2	231.4±98.27	<0.0001	<0.0001 ^{a, b, c}	
			2-1101 (1300)	3-694 (480)	4-268.25 (268)			
			>450	124/1300 (9.5%)	30/480 (6.3%)	3/268 (1.1%)	<0.0001	0.0127 ^a , <0.0001 ^b
			400-450	72/1300 (5.5%)	20/480 (4.2%)	8/268 (3.0%)		0.0243 ^c
			150-<400	923/1300 (71.0%)	335/480 (69.8%)	185/268 (69.0%)		
100-150			117/1300 (9.0%)	51/480 (10.6%)	42/268 (15.7%)			
50-100			39/1300 (3.0%)	31/480 (6.5%)	22/268 (8.2%)			
20-50			20/1300 (1.5%)	9/480 (1.9%)	5/268 (1.9%)			
(2048)	<20	5/1300 (0.4%)	4/480 (0.8%)	3/268 (1.1%)				
Acid-base balance in the arterial blood gas								
Ph (276)	On admission		7.4±0.08	7.4±0.07	7.4±0.08	0.27	N/A	
			7.04-7.58 (121)	7.1-7.54 (88)	7.1-7.54 (67)			
		<7.35	14/121 (11.6%)	7/88 (8.0%)	10/67 (14.9%)	0.391	N/A	
	≥7.35	107/121 (88.4%)	81/88 (92.0%)	57/67 (85.0%)				
	On discharge		7.4±0.08	7.4±0.08	7.4±0.06	0.889	N/A	
			7.06-7.5 (121)	7.01-7.6 (88)	7.3-7.6 (67)			
<7.35		12/121 (9.9%)	9/88 (10.2%)	4/67 (6.0%)	0.597	N/A		
	≥7.35	109/121 (90.1%)	79/88 (89.8%)	63/67 (94.0%)				
PaO2 (276)	On admission	<60 mmHg	38/121 (31.4%)	33/88 (37.5%)	30/67 (44.8%)	0.186	N/A	
		≥60 mmHg	83/121 (68.6%)	55/88 (62.5%)	37/67 (55.2%)			
			72.2±27.29	76.3±47.63	70.6±34.56	0.679	N/A	
			12.8-100 (121)	28.3-100 (88)	23.7-100 (67)			
	On discharge	<60 mmHg	29/121 (24.0%)	30/88 (34.1%)	32/67 (47.8%)	0.0039	0.441 ^a , 0.0045 ^b	
		≥60 mmHg	92/121 (76.0%)	58/88 (65.9%)	35/67 (32.2%)		0.359 ^c	
		75.4±26.57	77.7±48.53	66.4±24.15	0.040	0.914 ^a , 0.054 ^b		
		12.8-100 (121)	23.3-100 (88)	28.5-100 (67)		0.147 ^c		
PaCO2 (276)	On admission	≥ 45 mmHg	23/121 (19.0%)	10/88 (11.4%)	12/67 (17.9%)	0.309	N/A	
		< 45 mmHg	98/121 (81.0%)	78/88 (88.6%)	55/67 (82.1%)			
			38.0±10.27	36.7±9.42	38.6±10.93	0.434	N/A	

			20.2-82.4 (121)	20.9-79.4 (88)	19.7-88.4 (67)		
	On admission	≥ 45 mmHg	20/121 (16.5%)	11/88 (12.5%)	10/67 (14.9%)	0.721	N/A
	discharge	< 45 mmHg	101/121 (83.5%)	77/88 (87.5%)	57/67 (85.1%)		
			38.4±9.81	37.9±10.96	38.7±10.13	0.896	N/A
			20.2-75.5 (121)	20.9-88.4 (88)	25.0 – 88.4 (67)		
PaO2 and PaCO2 (276)	On admission	<60 and ≥ 45 mmHg.	7/121 (5.8%)	6/88 (6.8%)	9/67 (13.4%)	0.159	N/A
			114/121 (94.2%)	82/88 (93.2%)	58/67 (86.6%)		
	On discharge	<60 and ≥ 45 mmHg.	4/121 (3.3%)	4/88 (4.5%)	6/67 (9.0%)	0.228	N/A
			117/121 (96.7%)	84/88 (95.5%)	61/67 (91.0%)		
HCO3-standard (272)	On admission	mmol/L	24.9±3.76 12.1-32.9 (120)	24.2±4.19 14.3-39.5 (85)	24.2±4.57 13.5-38.6 (67)	0.427	N/A
	On discharge		25.0±3.80 12.1-35.7 (120)	25.3±5.58 13.7-51.7 (85)	24.9±4.0 17.4-36.7 (67)	0.868	N/A
BE (108)	On admission		0.9±4.77 (-15.7–10.5 (41))	1.7±5.30 (-12.5-15.7 (43))	2.0±5.1.7 (-7.4–14.6 (24))	0.642	N/A
	On discharge		0.80±5.44 (-15.7–11.9 (41))	2.4±6.01 (-14.7–17.1 (43))	1.4 ±4.79 (-4.7–13.2 (24))	0.437	N/A
LACT (245)	On admission		2.5±1.60 0.6-12.8 (105)	2.0±0.86 0.5-5.7 (79)	2.5±1.82 0.6-12.0 (61)	0.021	0.047 ^a , 0.977 ^b 0.128 ^c
	On discharge		2.5±1.58 0.7-12.9 (105)	2.10±1.03 0.5-6.4 (79)	2.4±1.21 0.8-6.0 (61)	0.098	N/A
LA (245)		pH <7.35 and LACT >1.6 mol/L	9/105 (8.6%)	5/79 (6.3%)	8/61 (13.1%)	0.372	N/A
		pH >7.35 or/and LACT <1.6 mol/L	96/105 (91.4%)	74/79 (93.7%)	53/61 (86.9%)		N/A
Osmolarity (203)	On admission	mOsm	303.6 ±16.72 247-370 (127)	306.1±26.04 233-373 (43)	306.4 ± 25.70 245.8- 370.6 (33)	0.725	N/A
	On discharge		299.9±16.61 270-362 (127)	303.9±22.13 263-373 (43)	305.2±23.0 265-353 (33)	0.312	N/A
Electrolytes, inflammatory and iron biomarkers							
Na (2032)	On admission	mmol/L	138.3±4.36 106-159 (1289)	137.7±7.0 101-175 (475)	137.9±6.82 108-174 (268)	0.267	N/A
	On discharge		139.1±4.30 109-175 (1289)	139.1±7.28 101-172 (475)	140.2±6.68 120-172 (268)	0.026	0.983 ^a , 0.019 ^b 0.098 ^c
K (2039)	On admission	mmol/L	4.1±0.58 2.0-7.5 (1294)	4.1±0.7 2.4-7.03 (477)	4.3±0.82 2.5-8.7 (268)	<0.0001	0.104 ^a , <0.0001 ^b 0.025 ^c
	On discharge		4.2±0.59 2.0-7.4 (1294)	4.4±0.76 2.3-7.0 (477)	4.4±0.7 2.5-6.6 (268)	<0.0001	0.004 ^a , <0.0001 ^b 0.334 ^c
Mg (1483)	On admission	mg/dL	2.1±0.35 0.9-5.2 (927)	2.1±0.44 1.3-4.1 (346)	2.0±0.41 1.1-4.0 (210)	0.402	N/A
	On discharge		2.0±0.33 0.8-5.2 (927)	2.0±0.44 1.1-4.2 (346)	2.0±0.4 1.0-4.0 (210)	0.468	N/A
Cl (665)	On admission	mg/dL	103.1±5.45 80-121	102.3±6.91 66-127 (155)	103.1±8.89 79-140 (96)	0.469	N/A

	On discharge		102.7±5.26 80-128 (414)	102.4±6.97 66-127 (155)	104.4±8.37 76-135 (96)	0.127	N/A
CRP (2020)	On admission	mg/L	76.6±84.58 0.13-531.6 (1275)	83.2±86.63 0.3-538.6 (477)	76.5±81.18 0.4-390.9 (268)	0.341	N/A
	On discharge		48.3±79.16 0.13-497 (1275)	72.6±94.48 0.22-538.6 (477)	74.4±86.84 0.4-431.9 (268)	<0.0001	<0.0001 ^{a,b} , 0.961 ^c
Procalcitonin (1275)	On admission	ng/mL	0.8±4.48 0.01-61.3 (919)	1.8±12.02 0.01-196.0 (344)	1.5±6.09 0.01-60.8 (212)	0.136	N/A
	On discharge		0.9±5.08 0.01-75.2 (919)	1.6±6.33 0.01-81.1 (344)	1.2±5.0 0.01-60.8 (212)	0.178	N/A
IL-6 (702)	On admission	pg/mL	61.3±424.31 2-9099 (480)	43.2±63.64 2-499 (143)	64.0±96.14 2-421 (79)	0.179	N/A
	On discharge		61.3±433.58 2-9099 (480)	40.0±74.16 2-499 (143)	76.6±159.21 2-1000 (79)	0.112	N/A
ESR (133)	On admission	mm/h	39.2±34.13 2-139 (67)	30.3±25.47 1-100 (39)	43.5±33.18 3-128 (27)	0.152	N/A
	On discharge		35.4±31.18 1-139 (67)	31.3±26.48 1-100 (39)	44.6±31.04 5-126 (27)	0.202	N/A
d-dimer (1579)	On admission	µg/L	3.7±12.19 0.15-132.8 (1002)	6.5±16.76 0.2-127.2 (373)	5.4±17.25 0.22-128.0 (204)	0.00951	0.01 ^a , 0.387 ^b 0.741 ^c
	On discharge		3.2±10.74 0.15-128.0 (1002)	5.6±13.29 0.21-106.02 (373)	3.7±9.24 0.21-107.54 (204)	0.00707	0.005 ^a , 0.8 ^b 0.095 ^c
PT (1925)	On admission	%	87.8±19.09 7-148 (1227)	79.7±21.3 7-131 (446)	71.5±26.47 2-124 (252)	<0.0001	<0.0001 ^{a,b,c}
	On discharge		87.9±19.25 7-148 (1227)	79.5±20.0 4-126 (446)	74.3±23.0 2-131 (252)	<0.0001	<0.0001 ^{a,b} 0.008 ^c
INR (1925)	On admission	>1.5	41/1228 (3.3%)	46/445 (10.3%)	56/252 (22.2%)	<0.0001	<0.0001
		≤1.5	1187/1228 (96.7%)	399/445 (89.7%)	196/252 (77.8%)		^{a,b,c}
			1.1±0.48 0.82-15.2 (1228)	1.3±0.6 0.87-7.8 (445)	1.8±2.44 0.89-21.1 (252)	<0.0001	<0.0001 ^{a,b,c}
	On discharge	>1.5	49/1228 (4.0%)	40/445 (9.0%)	4/252 (17.5%)	<0.0001	<0.0001 ^{a,b}
		≤1.5	1179/1228 (96.0%)	405/445 (91.0%)	208/252 (82.5%)		0.0044 ^c
			1.1±0.39 0.82-9.2 (1228)	1.27±0.76 0.88-13.1 (445)	1.4±1.44 0.87-21.1 (252)	<0.0001	0.002 ^{a,b} 0.154 ^c
aPTT (1868)	On admission		34.4±14.8 15.2-250.4 (1192)	33.5±10.0 16.8-150.1 (431)	39.2±22.7 17.2-250.7 (245)	0.001	0.355 ^a , 0.005 ^b 0.00074 ^c
		>60 s	28/1192 (2.3%)	7/431 (1.6%)	11/245 (4.5%)	0.0634	N/A
		≤60 s	1164/1192 (97.7%)	424/431 (98.4%)	234/245 (95.5%)		
	On discharge		35.7±17.5 16.6-283.2 (1192)	35.1±11.2 16.6-138.8 (431)	38.7±20.9 17.2-230.5 (245)	0.0453	0.732 ^a , 0.087 ^b 0.035 ^c
		>60 s	46/1192 (3.8%)	8/431 (1.9%)	12/245 (4.9%)	0.0718	N/A
		≤60 s	1146/1192 (96.1%)	423/431 (98.1%)	233/245 (95.1%)		
Fibrinogen (420)	On admission	g/dl	4.9±1.85 0.35-10 (285)	4.7±1.82 0.35-9.2 (81)	4.5±1.66 1.78-9.1 (54)	0.316	N/A
	On discharge		4.7±1.96 0.44-10 (285)	5.0±2.22 0.35-11.3 (81)	4.9±1.94 1.53-9.04 (54)	0.659	N/A
Ferritin (969)	On admission	ng/ml	964.7±1732.2 8-37400 (625)	806.9±965.38 8-7316 (218)	764.9±863.78 15.7-5910 (126)	0.146	N/A
	On discharge		915.2±1824.14 8-37400 (625)	808.3±1029.8 8-7970 (218)	2064.6±10327.03 17-103000 (126)	0.245	N/A
Tsat (174)	On admission	%	25.3±23.65 2.38-200 (88)	20.6±15.71 0-68.3 (50)	22.03±15.3 0-61.7 (36)	0.377	N/A

	On discharge		24.5±15.9 3.1-86.9 (88)	21.8±16.16 0-68.3 (50)	20.1±13.92 0-50.2 (36)	0.3	N/A
Fe (262)	On admission		55.7±39.58 10-178 (127)	46.6±38.73 10-197 (77)	49.07±44.1 10-314 (58)	0.251	N/A
	On discharge		58.6±47.49 10-366 (127)	47.1±37.95 10-197 (77)	48.6±45.31 5-320 (58)	0.137	N/A
sTfR (49)	On admission	mg/L	1.6±1.1 0.4-5.2 (17)	1.4±0.62 0.79-2.94 (20)	1.7±0.89 0.94-4.0 (12)	0.594	N/A
	On discharge		1.6±1.1 0.4-5.2 (17)	1.4±0.6 0.79-2.94 (20)	1.7±0.89 0.94-4.0 (12)	0.544	N/A
Vit. B12 (278)	On admission	pg/ml	742±1084.22 131-6000 (127)	563.4±755.85 109-5907 (82)	580.5±622.9 109-4344 (69)	0.315	N/A
	On discharge		703.8±912.66 1131-6000 (127)	635.0±764.43 109-5907 (82)	614.6±611.6 109-4344 (69)	0.705	N/A
FA (278)	On admission	ng/L	7.3±4.6 1.5-24 (125)	7.7±5.27 1.8-24 (81)	7.7±6.0 1-24 (72)	0.797	N/A
	On discharge		7.5±4.68 1.6-24 (125)	8.3±5.64 1.38-24 (81)	8.9±6.6 1-24 (72)	0.226	N/A
Biochemistry							
Glucose (1760)	On admission	mg/dL	134.9±74.88 28-933 (1064)	151.1±92.0 47-1026 (449)	150.7±98.49 37-1064 (247)	0.00084	0.003 ^a , 0.049 ^b 0.998 ^c
	On discharge		124.0±70.64 37-1444 (1064)	142.5±83.16 47-596 (449)	144.2±77.3 14-685 (247)	<0.0001	0.0001 ^a , 0.00057 ^b 0.961 ^c
HbA1c (263)	On admission	%	7.6±2.31 4.2-14.9 (127)	7.5±2.19 4.8-16.6 (75)	7.3±1.77 5.1-13.7 (61)	0.505	N/A
	On discharge		7.5±2.22 4.2-14.9 (127)	7.5±2.19 4.7-16.8 (75)	7.3±1.78 5.1-13.7 (61)	0.744	N/A
Urea (1859)	On admission	mg/dL	42.9±36.0 5-307 (1146)	64.4±49.48 8-353 (455)	77.2-53.6 12-369 (258)	<0.0001	<0.0001 ^{a, b} 0.005 ^c
	On discharge		40.9±31.89 5-307 (1146)	66.3±54.16 10-396 (455)	78.2±52.16 15-342 (258)	<0.0001	<0.0001 ^{a, b} 0.011 ^c
Creatinine (1963)	On admission		1.15±1.18 0.26-14.87 (1217)	1.45±1.3 0.48-12.66 (478)	1.8±1.58 0.44-11.3 (268)	<0.0001	<0.0001 ^{a, b} 0.005 ^c
		≥5 mg/dL	23/1217 (1.9%)	17/478 (3.6%)	12/268 (4.5%)	<0.0001	<0.0001 ^{a, b}
		>2.0 mg/dL	84/1217 (6.9%)	68/478 (14.2%)	69/268 (25.7%)		0.00043 ^c
		< 2.0	1133/1217 (93.1%)	410/478 (85.8%)	199/268 (74.3%)		
	On discharge		1.08±1.05 0.26-14.87 (1217)	1.43±1.36 0.43-12.35 (478)	1.66±1.42 0.43-7.27 (268)	<0.0001	<0.0001 ^{a, b} 0.09 ^c
		≥5 mg/dL	19/1217 (1.6%)	14/478 (2.9%)	11/268 (4.1%)	<0.0001	<0.0001 ^{a, b}
		>2.0 mg/dL	76/1217 (6.2%)	72/478 (15.1%)	56/268 (20.9%)		^{a, b}
		< 2.0	1141/1217 (93.8%)	406/478 (84.9%)	212/268 (79.1%)		0.162 ^c
eGFR (1958)	On admission	ml/min/ 1.73 m ²	85.0±34.34 0-433 (1212)	62.0±28.76 4-149 (478)	52.8±29.72 5-180 (268)	<0.0001	<0.0001 ^{a, b} 0.0001 ^c
		<60	236/1212 (19.5%)	214/478 (44.8%)	166/268 (61.9%)	<0.0001	<0.0001 ^{a, b, c}
		≥60	975/1212 (80.5%)	264/478 (55.2%)	102/268 (38.1%)		
	On discharge		89.3±34.71 0-433 (1212)	65.4±31.0 4-208 (478)	58.4±33.07 5-209 (268)	<0.0001	<0.0001 ^{a, b, c}
		<60	189/1212 (15.6%)	188/478 (39.3%)	145/268 (54.1%)	<0.0001	<0.0001 ^{a, b}
		≥60	1023/1212 (84.4%)	290/478 (60.7%)	123/268 (45.9%)		0.0004 ^c
TP (1958)	On admission	g/L	6.1±0.84 3.5-8.2 (332)	5.9±0.92 3.6-9.5 (152)	5.7±0.87 3.3-8.2 (123)	<0.0001	0.344 ^a , 0.002 ^b 0.165 ^c

	On discharge		6.0±0.87 3-8.2 (332)	5.8±0.91 3.7-9.1 (152)	5.6±0.9 3.3-8.1 (123)	<0.0001	0.09 ^a <0.0001 ^b , 0.07 ^c
Albumin (665)	On admission	g/L	3.2±0.6 1.5-5.1 (375)	3.1±0.55 1.1-4.4 (160)	3.0±0.61 0.7-4.9 (130)	0.00652	0.488 ^a , 0.005 ^b 0.123 ^c
	On discharge		3.1±0.67 0.4-5.1 (375)	3.0±0.56 1.7-4.4 (160)	2.8±0.61 0.9-4.5 (130)	0.0009	0.632 ^a , 0.00059 ^b 0.019 ^c
UA (623)	On admission	mg/dL	5.5±2.54 1.4-23.6 (348)	6.5±3.0 1.7-18.4 (160)	6.6±2.44 1.7-13.6 (115)	<0.0001	0.0008 ^a , 0.0001 ^b 0.934 ^c
	On discharge		5.2±2.28 1.1±20.4 (348)	6.2±3.03 1.9-18.6 (160)	6.3±2.32 1.7-13.2 (115)	<0.0001	0.001 ^a , 0.0001 ^b 0.97 ^c
AST (1443)	On admission	IU/L	60.1±113.94 5-2405 (884)	66.5±258.19 7-4776 (347)	86.1±324.26 8-3866 (212)	0.477	N/A
	On discharge		92.2±842.08 5-23896 (884)	71.8±360.57 8-6591 (347)	122.4±568.21 7-6088 (212)	0.485	N/A
ALT (1590)	On admission	IU/L	54.9±92.79 4-1411 (973)	49.0±190.0 4-3700(391)	51.7±143.3 5-1361 (226)	0.813	N/A
	On discharge		70.4±193.78 4-5163 (973)	50.2±90.43 5-1247 (391)	72.7±261.64 5-2985 (226)	0.0229	0.024 ^a , 0.992 ^b 0.425 ^c
ALP (829)	On admission	U/L	94.2±109.9 22-1503 (503)	81.3±71.0 28-723 (194)	91.9±73.9 13-500 (129)	0.169	N/A
	On discharge		94.0±111.0 22-1467 (503)	81.6±56.82 28-526 (194)	91.8±63.51 28-417 (129)	0.113	N/A
GGTP (1352)	On admission	U/L	91.7±161.74 6-2532 (828)	74.6±105.73 8-975 (333)	73.0±108.17 9-687 (191)	0.0538	N/A
	On discharge		95.1±136.28 6-1771 (828)	82.4±120.44 7-1091 (333)	76.1±115.87 6-1207 (191)	0.0843	N/A
LDH (1232)	On admission	U/L	430.0±378.19 50-7100 (776)	391.3±201.86 44-1357 (286)	441.3±733.17 71-9505 (170)	0.0869	N/A
	On discharge		388.4±566.69 50-11227 (776)	370.6±207.76 44-1584 (286)	457.7±814.13 97-9505 (170)	0.327	N/A
Cardiac biomarkers							
BNP (359)	On admission	pg/ml	220.0±638.68 1.7-6924.2 (161)	444.4±808.15 3-4890.6 (100)	1020.7±239.36 5.9-13368.4 (98)	0.0002	0.051 ^a , 0.0008 ^b 0.028 ^c
	On discharge		219.0±368.79 1.7-6924.2 (161)	466.2±1206.0 3-10662.8(100)	933.8±1911.84 11.9-13368.4 (98)	0.000716	0.145 ^a , 0.001 ^b 0.103 ^c
NT-proBNP (379)	On admission	ng/ml	1888.8±7779.04 12-70000 (172)	8483.2±14594.98 18.2-70000 (109)	14121.7±19061.73 119.6-70000 (98)	<0.0001	<0.0001 ^{a, b} 0.049 ^c
	On discharge		1821.5±6819.5 12-70000 (172)	9269.8±15684.9 18.2-70000 (109)	13186.2±17523.6 119.6-70000 (98)	<0.0001	<0.0001 ^{a, b} 0.213 ^c
Troponin T (1176) (F ≤ 15.6 M ≤ 34.2)	On admission	pg/ml	136.6±807.93 0-11758.2 (678)	1706.7±1163.78 1-125593 (305)	761.7±2633.94 3.3-21022.9 (191)	0.00043	0.05 ^a , 0.004 ^b 0.361 ^c
		≤5-fold upper range	611/678 (90.1%)	239/305 (78.4%)	138/191 (72.3%)	<0.0001	<0.0001 ^{a, b} 0.448 ^c
		>5-fold upper range	67/678 (9.9%)	66/305 (21.6%)	53/191 (27.7%)		
	On discharge		116.9±827.21 0.2-12391.6 (678)	1864.3±1329.37 0.8-174653 (305)	662.9±2784.48 1.8-29828.3 (191)	0.00237	0.058 ^a , 0.022 ^b 0.28 ^c
During hospitalization	≤5-fold upper limit		588/678 (86.7%)	232/305 (76.1%)	129/191 (67.5%)	<0.0001	0.0001 ^a , <0.000 ^b 0.146 ^c
	>5-fold upper limit		90/678 (13.3%)	73/305 (23.9%)	62/191 (32.5%)		
cLDL (456)			99.8±50.97	87.2±40.59	74.8±42.29	<0.0001	0.028 ^a , <0.0001 ^b

	On admission		6-510 (233)	17-230 (129)	6-210 (88)		0.085 ^c
		>115 mg/dL	74/233 (31.8%)	30/129 (23.3%)	14/88 (15.9%)	0.0105	0.335 ^a , 0.0208 ^b
		≤115 mg/dL	159/233 (68.2%)	97/129 (76.7%)	74/88 (84.1%)		0.751 ^c
cHDL (452)	On admission	mg/dl	39.9±16.1	40.2±15.37	37.2±15.0	0.306	N/A
			2-120 (237)	7-110 (129)	8-79 (86)		
TG (641)	On admission		178.9±123.96	144.5±96.41	129.6±61.6	<0.0001	0.002 ^a , <0.0001 ^b
			40-1100 (360)	48-595 (164)	46-413 (117)		0.258 ^c
		>150 mg/dL	177/360 (49.2%)	50/164 (30.5%)	37/117 (31.6%)	<0.0001	0.0003 ^a , 0.004 ^b
		≤150 mg/dL	183/360 (50.8%)	114/164 (69.5%)	80/117 (68.4%)		1.0 ^c
Hormones							
25-OH-vit.D (474)	on admission	ng/mL	24.7±17.57	24.8±16.5	19.2±14.72	0.0296	0.999 ^a , 0.029 ^b
			3.5-146.1 (305)	3.5-77.7 (108)	3.5-63.5 (61)		0.063 ^c
TSH (820)	on admission	mIU/L	1.3±1.54	1.6±2.46	2.2±3.96	0.02904	0.47 ^a , 0.035 ^b
			0-18.6 (441)	0.01-28.81 (232)	0-38.24 (147)		0.197 ^c
ft4 (339)	on admission	pmol/L	12.7±2.91	12.8±3.39	13.4±4.06	0.430	N/A
			6.68-33.47 (184)	5.92-36.6 (92)	7.87-35.46 (63)		
ft3 (315)	on admission	pmol/L	2.3±1.89	1.85±0.76	1.76±1.02	0.015	0.01 ^a , 0.156 ^b
			0.95-25.25 (177)	0.95-4.45 (84)	0.95-6.85 (54)		0.755 ^c
ACTH (10)	on admission		12.0±11.58	19.4±4.21	19.2±10.96	0.589	N/A
			5-32.2 (5)	16.5-24.2 (3)	11.4-26.9 (2)		
Cortisol (120)	on admission	µg/dL	13.5±16.11	15.0±13.46	12.4±7.83	0.743	N/A
			0.1-119.6 (80)	1-59.8 (23)	0.9-29.6 (17)		

Continuous variables are presented as: mean ± SD, range (minimum -maximum) and number of non-missing values. Categorized variables are presented as: a number with a percentage. Information about the numbers with valid values is provided in the left column. Abbreviations: N-valid measurements, n - number of patients with parameter above cut-off point, SD - standard deviation, FA - folic acid, Hb - hemoglobin, HbA1c - glycated hemoglobin, LA - lactate acidosis, LACT - lactates, LEU - leucocytes, LYMPH - lymphocytes, MCV - mean corpuscular volume, MCH - mean corpuscular hemoglobin, MCHC - mean corpuscular hemoglobin concentration, NEUTR - neutrophils, PLT - platelets, PT - prothrombin rate, RETICU - reticulocytes, UA - uric acid, TP - total protein, N/A - non-applicable. a - low- vs. medium-risk, b - low- vs. high-risk, c - medium- vs. high-risk

Supplementary Table SIV. Therapies used during hospitalization

variables. Units (N)	Low risk [0-1]	Medium risk [2-3]	High risk [>4]	Omnibus <i>p</i> -value	<i>p</i> -value (for post-hoc analysis)
	n/N (% of risk category)	n/N (% of risk category)	n/N (% of risk category)		
Applied treatment and procedures					
systemic CCS (2184)	708/1418 (49.9%)	246/492 (50.0%)	142/274 (51.8%)	0.844	N/A
Convalescent plasma (2184)	167/1418 (11.8%)	41/492 (8.3%)	31/274 (11.3%)	0.106	N/A
TCZB (2184)	22/1418 (1.6%)	2/492 (0.4%)	1/274 (0.4%)	0.063	N/A
RDV (2184)	236/1418 (16.6%)	72/492 (14.6%)	356/274 (12.8%)	0.208	N/A
Antibiotic (2184)	747/1418 (52.7%)	303/492 (61.6%)	191/274 (69.7%)	<0.0001	0.0023 ^a , <0.0001 ^b 0.0893 ^c

Categorized variables are presented as: a number with a percentage. Information regarding the numbers with valid values is provided in the left column.

Abbreviations: N-valid measurements. n - number of patients with parameters above cut-off point. SD – standard deviation. N/A – non-applicable, CCS – corticosteroid, TCZB – tocilizumab, RDV – remdesivir, a – *low-* vs. *medium-risk*, b – *low-* vs. *high-risk*, c – *medium-* vs. *high-risk*

Supplementary Table SV. Applied treatment and procedures

variables, units (N)	Low risk [0-1] mean±SD min-max (N) or n/N (% of risk category)	Medium risk [2-3] mean±SD min-max (N) or n/N (% of risk category)	High risk [>4] mean±SD min-max (N) or n/N (% of risk category)	Omnibus <i>p</i> -value	<i>p</i> -value (for post- hoc analysis)
Applied treatment and procedures					
The most ARS during hospitalization (2181)					
• no oxygen	742/1416 (52.4%)	202/491 (41.1%)	89/274 (32.5%)	<0.0001	<0.0001 ^{a, b} 0.212 ^c
• high-flow nasal cannula (non-invasive ventilation)	65/1416 (4.6%)	39/491 (7.9%)	27/274 (9.9%)		
• invasive ventilation	141/1416 (10.0%)	49/491 (10.0%)	22/274 (8.0%)		
Oxygenation parameters from the qualification period for ARS:					
	90.6±7.9	86.5±9.7	85.6±9.96		<0.0001 ^{a, b}
• SpO ₂ (632)	50 – 100 (411)	55 – 99 (133)	59 – 99 (88)	<0.0001	0.78 ^c
• RR, breaths/minute (105)	26.5±8.5 14 – 50 (55)	29.7±13.9 13 – 66 (28)	29.5±12.87 14 – 72 (22)	0.3799	N/A
Duration of MV, days (1389)	2.1±7.65 0 – 91 (925)	1.4±5.19 0 – 51 (296)	1.2±4.12 0 – 29 (168)	0.051	N/A
Therapy with CA (2184)	131/1418 (9.2%)	45/492 (9.1%)	42/274 (15.3%)	0.0068	1.0 ^a , 0.0099 ^b , 0.041 ^c
Coronary angiography (2184)	10/1418 (0.7%)	12/492 (2.4)	8/274 (2.9)	0.00092	<0.0148 ^a , <0.0127 ^b 1.0 ^c
Coronary revascularization (2184)	8/1418 (0.6%)	11/492 (2.2%)	7/274 (2.6%)	0.00069	<0.0085 ^a , <0.0162 ^b 1.0 ^c
Hemodialysis (2184)	47/1418 (3.3%)	12/492 (2.6%)	12/274 (4.4%)	0.434	N/A

Continuous variables are presented as mean ± SD, range (min-max), and non-missing values. Categorized variables are presented as a percentage. Information about the numbers with valid values is provided in the left column.

Abbreviations: N – valid measurements, n – number of patients with parameter above cut-off point, SD – standard deviation, ANOVA – analysis of variance, ARS – advanced respiratory support, CA – catecholamines MV – mechanical ventilation, RR – respiratory rate, N/A – non-applicable, a – *low*- vs. *medium*-risk, b – *low*- vs. *high*-risk, c – *medium*- vs. *high*-risk

Supplementary Table SVI. The Log-rank statistics for best matching the C2HEST risk strata for a total mortality

	h2	h3	h4	h5	h6	h7	h8
m1	293.6412	262.6541	248.5854	218.7096	185.0598	174.1676	13.13543
m2		288.5471	300.8929	295.2091	283.35	281.2464	16.7678
m3			224.9257	221.4446	213.1684	212.2898	14.57013
m4				156.288	155.0826	155.259	12.44789
m5					92.64759	92.03033	9.556165
m6						29.7152	5.43322
m7							2.190821

m-medium. h-high, bold text – statistically significant values

Supplementary Table SVII. The Log-rank statistics for the best matching the C2HEST risk strata for a in-hospital mortality

	h2	h3	h4	h5	h6	h7	h8
m1	76.14871	73.07586	62.72731	54.0316	41.54258	34.21328	5.393144
m2		83.28625	86.20881	85.94467	81.30488	78.90106	8.726322
m3			74.88727	76.14353	73.52639	72.42844	8.393051
m4				54.07173	53.20158	53.21931	7.21509
m5					37.01716	37.47576	6.072637
m6						18.82582	4.28475
m7							2.635721

m-medium, h-high, bold text – statistically significant values

Supplementary Table SVIII. Odds ratios for quantifying the strength of the association between CH2EST-score and study endpoints and adverse events

Endpoint	Comparison	OR	CI min.	CI max.	P-value
End of hospitalization - death	overall	1.502	1.408	1.603	< 0.0001
	low vs medium	3.143	2.367	4.173	< 0.0001
	low vs high	5.982	4.383	8.164	< 0.0001
End of hospitalization – deterioration	overall	1.160	1.081	1.242	< 0.0001
	low vs medium	2.260	1.700	2.994	< 0.0001
	low vs high	1.760	1.209	2.522	0.0025
End of hospitalization - rehabilitation	overall	1.005	0.928	1.084	0.9067
	low vs medium	1.140	0.834	1.543	0.4017
	low vs high	0.921	0.600	1.371	0.6956
End of hospitalization – full recovery	overall	0.712	0.673	0.752	< 0.0001
	low vs medium	0.346	0.280	0.427	< 0.0001
	low vs high	0.258	0.196	0.337	< 0.0001
Shock – all-cause	overall	1.137	1.046	1.233	0.0022
	low vs medium	1.239	0.856	1.766	0.2453
	low vs high	1.644	1.074	2.459	0.0182
Cardiogenic shock	overall	1.632	1.384	1.928	< 0.0001
	low vs medium	4.610	1.805	12.590	0.0017
	low vs high	10.854	4.471	28.878	< 0.0001
Septic shock	overall	1.088	0.986	1.196	0.0848
	low vs medium	0.970	0.623	1.469	0.8875
	low vs high	1.304	0.784	2.081	0.2846
PE	overall	1.041	0.932	1.155	0.4631
	low vs medium	1.037	0.654	1.597	0.8738
	low vs high	0.995	0.543	1.707	0.9861
DVT	overall	1.027	0.922	1.138	0.6139
	low vs medium	1.044	0.669	1.589	0.8432
	low vs high	0.932	0.510	1.593	0.8059
MI	overall	1.413	1.170	1.696	0.0002
	low vs medium	3.657	1.434	9.629	0.0066
	low vs high	5.301	1.935	14.525	0.0009
Myocardial injury	overall	1.367	1.271	1.472	< 0.0001
	low vs medium	2.367	1.729	3.241	< 0.0001
	low vs high	4.183	2.951	5.937	< 0.0001
Acute HF	overall	2.036	1.805	2.312	< 0.0001
	low vs medium	8.250	3.795	19.863	< 0.0001
	low vs high	35.559	17.502	82.275	< 0.0001
Stroke/TIA	overall	1.243	1.062	1.441	0.0049
	low vs medium	3.124	1.620	6.047	0.0006
	low vs high	2.039	0.786	4.731	0.1137
Complete RF	overall	1.193	1.048	1.364	0.0083

	low vs medium	1.230	0.710	2.136	0.4611
	low vs high	2.012	1.096	3.754	0.0256
SIRS	overall	1.024	0.942	1.110	0.569
	low vs medium	0.801	0.553	1.139	0.229
	low vs high	1.295	0.865	1.896	0.1949
Sepsis	overall	1.358	1.115	1.643	0.0018
	low vs medium	2.506	0.884	6.821	0.0424
	low vs high	3.737	1.312	10.228	0.0103
AKI	overall	1.317	1.226	1.413	< 0.0001
	low vs medium	1.856	1.340	2.555	0.0002
	low vs high	3.231	2.274	4.558	< 0.0001
ALD	overall	1.258	1.107	1.423	0.0003
	low vs medium	2.031	1.147	3.544	0.0133
	low vs high	2.396	1.216	4.504	0.0084
MODS	overall	1.169	0.977	1.379	0.0743
	low vs medium	1.100	0.455	2.406	0.8207
	low vs high	2.001	0.825	4.397	0.0994
All-cause bleedings	overall	1.172	1.057	1.294	0.002
	low vs medium	1.133	0.693	1.796	0.6068
	low vs high	2.124	1.291	3.396	0.0022
Intracranial bleeding	overall	1.076	0.828	1.351	0.5528
	low vs medium	1.937	0.755	4.710	0.1503
	low vs high	0.429	0.024	2.191	0.4173
Respiratory-tract bleeding	overall	1.066	0.868	1.280	0.5164
	low vs medium	0.497	0.145	1.300	0.1991
	low vs high	1.590	0.625	3.562	0.2883
Upper-GI-tract bleeding	overall	1.315	1.101	1.555	0.0017
	low vs medium	1.658	0.659	3.894	0.2575
	low vs high	3.799	1.622	8.581	0.0015
Lower-GI-tract bleeding	overall	1.129	0.759	1.567	0.5014
	low vs medium	0.479	0.025	2.815	0.4963
	low vs high	1.730	0.253	7.555	0.5032
Urinary tract bleeding	overall	1.273	0.998	1.591	0.0402
	low vs medium	1.283	0.346	3.960	0.6793
	low vs high	2.910	0.888	8.491	0.0572
Pneumonia	overall	1.28	1.21	1.36	<0.001
	low vs medium				
	low vs high	2.28	1.74	3.01	<0.0001

Abbreviations: AKI – acute kidney injury, ALD – acute liver dysfunction, DVT – deep vein thrombosis, HF – heart failure, MI – myocardial infarction, MODS – multiple organ dysfunction syndrome, PE – pulmonary embolism, RF – respiratory failure, TIA – transient ischemic attack, SIRS – systemic inflammatory response syndrome GI – gastrointestinal.

Supplementary Table SIX. Components of C₂HEST score and the risk of outcomes in the univariate Cox proportional hazard model (all-cause death) and competing risk regression model (other outcomes).

Endpoint	Component	OR	CI min.	CI max.	P value
End of hospitalization - death	CAD	2.244	1.573	3.185	< 0.0001
	COPD	1.013	0.549	1.787	0.9659
	Age>75	2.759	2.115	3.596	< 0.0001
	Thyroid disease	0.465	0.283	0.731	0.0015
	Hypertension	1.683	1.280	2.218	0.0002
	HFrEF	1.796	1.267	2.533	0.0009
End of hospitalization - rehabilitation	CAD	0.852	0.517	1.361	0.5164
	COPD	2.193	1.199	3.828	0.0077
	Age>75	0.602	0.419	0.849	0.0048
	Thyroid disease	1.279	0.851	1.874	0.2203
	Hypertension	1.434	1.085	1.896	0.0112
	HFrEF	0.980	0.607	1.543	0.9318
End of hospitalization - full recovery	CAD	0.593	0.429	0.817	0.0014
	COPD	0.533	0.319	0.878	0.0146
	Age>75	0.398	0.320	0.495	< 0.0001
	Thyroid disease	1.485	1.100	2.019	0.0107
	Hypertension	0.675	0.557	0.818	< 0.0001
	HFrEF	0.703	0.514	0.961	0.0275
All-cause shock	CAD	1.001	0.605	1.608	0.9976
	COPD	0.771	0.313	1.628	0.531
	Age>75	0.682	0.461	0.990	0.049
	Thyroid disease	0.791	0.459	1.287	0.37
	Hypertension	2.005	1.440	2.804	< 0.0001
	HFrEF	1.839	1.161	2.867	0.0082
Hypovolemic shock	CAD	NA	0.000	NA	NA
	COPD	2.001	0.314	7.089	0.3588
	Age>75	1.000	0.414	2.221	0.9998
	Thyroid disease	1.839	0.678	4.226	0.1842
	Hypertension	1.151	0.552	2.386	0.7043
	HFrEF	2.504	0.868	6.324	0.0656
Cardiogenic shock	CAD	1.667	0.666	4.039	0.2633
	COPD	2.742	0.852	7.348	0.062
	Age>75	2.451	1.145	5.290	0.0207
	Thyroid disease	0.642	0.149	1.894	0.4791
	Hypertension	0.816	0.369	1.852	0.6178
	HFrEF	4.653	1.896	11.423	0.0007
Septic shock	CAD	1.182	0.674	2.001	0.5458
	COPD	0.566	0.168	1.426	0.2847
	Age>75	0.490	0.302	0.768	0.0026
	Thyroid disease	0.680	0.350	1.208	0.2193
	Hypertension	2.762	1.885	4.089	< 0.0001
	HFrEF	1.330	0.766	2.241	0.2962
PE	HFrEF	1.330	0.766	2.241	0.2962

	CAD	0.515	0.228	1.042	0.0841
	COPD	0.873	0.260	2.198	0.7988
	Age>75	1.020	0.642	1.581	0.9325
	Thyroid disease	0.486	0.203	0.986	0.0695
	Hypertension	1.522	1.023	2.268	0.0383
	HFrEF	1.373	0.734	2.450	0.3
	CAD	0.754	0.106	3.263	0.737
	COPD	1.378	0.074	7.314	0.7621
	Age>75	0.724	0.198	2.110	0.5836
DVT	Thyroid disease	0.885	0.140	3.100	0.8703
	Hypertension	1.058	0.407	2.686	0.905
	HFrEF	1.484	0.293	5.566	0.5906
	CAD	1.574	0.548	4.162	0.3757
	COPD	NA	0.000	NA	NA
	Age>75	1.547	0.649	3.594	0.3133
MI	Thyroid disease	0.571	0.091	1.976	0.4535
	Hypertension	1.642	0.665	4.316	0.293
	HFrEF	3.283	1.225	8.567	0.0158
	CAD	1.336	0.889	1.990	0.1586
	COPD	1.472	0.801	2.658	0.2045
	Age>75	1.970	1.468	2.640	< 0.0001
Myocardial injury	Thyroid disease	0.752	0.466	1.180	0.2275
	Hypertension	1.379	1.024	1.861	0.0348
	HFrEF	2.058	1.403	3.012	0.0002
	CAD	1.395	0.775	2.476	0.2605
	COPD	0.538	0.151	1.484	0.2771
	Age>75	3.745	2.209	6.470	< 0.0001
acute HF	Thyroid disease	0.539	0.212	1.190	0.1553
	Hypertension	1.175	0.642	2.206	0.6064
	HFrEF	13.248	7.359	24.524	< 0.0001
	CAD	1.231	0.465	2.869	0.6503
	COPD	0.467	0.026	2.242	0.4583
	Age>75	1.870	0.967	3.547	0.0576
Stroke/TIA	Thyroid disease	0.753	0.223	1.904	0.5943
	Hypertension	2.424	1.230	5.005	0.0127
	HFrEF	0.844	0.315	2.003	0.7163
	CAD	1.753	0.890	3.523	0.1079
	COPD	1.041	0.391	2.864	0.9355
	Age>75	1.317	0.788	2.208	0.2939
Complete RF	Thyroid disease	0.851	0.392	1.846	0.6801
	Hypertension	0.825	0.483	1.400	0.4776
	HFrEF	1.806	0.924	3.602	0.0869
	CAD	0.858	0.621	1.188	0.3537
	COPD	1.573	0.942	2.717	0.0923
Pneumonia	Age>75	1.219	0.977	1.522	0.0796
	Thyroid disease	1.096	0.823	1.462	0.5332

	Hypertension	2.348	1.948	2.834	< 0.0001
	HFrEF	1.398	1.013	1.940	0.043
	CAD	0.905	0.538	1.472	0.6974
	COPD	1.274	0.599	2.454	0.4962
SIRS	Age>75	1.021	0.716	1.435	0.9086
	Thyroid disease	0.611	0.346	1.007	0.0686
	Hypertension	0.857	0.630	1.161	0.321
	HFrEF	1.600	1.003	2.505	0.0437
	CAD	0.415	0.088	1.438	0.2045
	COPD	1.919	0.278	8.028	0.426
Sepsis	Age>75	1.201	0.451	3.073	0.7051
	Thyroid disease	0.550	0.086	1.960	0.4302
	Hypertension	1.521	0.567	4.352	0.4138
	HFrEF	5.293	1.856	15.129	0.0017
	CAD	1.639	1.095	2.422	0.0146
	COPD	1.182	0.613	2.138	0.598
AKI	Age>75	1.274	0.931	1.732	0.1251
	Thyroid disease	0.515	0.295	0.846	0.0132
	Hypertension	2.423	1.777	3.328	< 0.0001
	HFrEF	1.529	1.027	2.252	0.0336
	CAD	1.052	0.477	2.154	0.895
	COPD	0.295	0.016	1.401	0.2325
ALD	Age>75	1.686	0.972	2.879	0.0583
	Thyroid disease	0.863	0.353	1.807	0.7206
	Hypertension	1.495	0.866	2.619	0.1525
	HFrEF	1.854	0.917	3.597	0.0755
	CAD	0.748	0.251	1.969	0.5761
	COPD	1.034	0.161	3.713	0.9653
MODS	Age>75	0.475	0.183	1.089	0.0978
	Thyroid disease	0.418	0.067	1.401	0.2361
	Hypertension	1.403	0.672	2.958	0.3669
	HFrEF	4.681	1.923	10.941	0.0005
	CAD	1.057	0.557	1.911	0.8602
	COPD	0.764	0.225	1.943	0.615
All-cause bleedings	Age>75	1.027	0.643	1.604	0.9104
	Thyroid disease	1.884	1.117	3.047	0.0129
	Hypertension	1.267	0.837	1.921	0.2629
	HFrEF	1.729	0.962	3.017	0.0597
	CAD	0.357	0.019	1.908	0.3328
	COPD	NA	NA	NA	NA
Intracranial bleeding	Age>75	1.457	0.524	3.731	0.4459
	Thyroid disease	0.386	0.021	1.879	0.3554
	Hypertension	2.602	1.018	7.171	0.0511
	HFrEF	0.733	0.109	2.860	0.695
Respiratory-tract bleeding	CAD	1.584	0.536	4.249	0.38
	COPD	0.520	0.028	2.682	0.5339

	Age>75	0.217	0.051	0.640	0.0146
	Thyroid disease	1.355	0.453	3.294	0.5396
	Hypertension	1.358	0.635	2.902	0.4256
	HFrEF	2.506	0.876	6.622	0.0734
	CAD	0.627	0.166	1.879	0.4408
	COPD	1.473	0.229	5.305	0.6119
Upper-GI-tract bleeding	Age>75	1.898	0.858	4.089	0.1051
	Thyroid disease	2.713	1.119	5.930	0.0174
	Hypertension	1.175	0.544	2.592	0.6826
	HFrEF	2.040	0.740	5.169	0.1468
	CAD	4.604	0.639	21.975	0.0749
	COPD	NA	0.000	NA	NA
Lower-GI-tract bleeding	Age>75	2.030	0.402	8.419	0.3448
	Thyroid disease	7.582	1.843	29.240	0.003
	Hypertension	0.669	0.152	2.748	0.5758
	HFrEF	NA	NA	NA	NA
	CAD	0.903	0.182	3.404	0.8889
	COPD	1.127	0.060	6.041	0.9107
UTB	Age>75	1.227	0.398	3.436	0.7054
	Thyroid disease	1.525	0.348	4.724	0.511
	Hypertension	1.355	0.482	3.981	0.5668
	HFrEF	2.443	0.642	8.208	0.1636

Abbreviations: AKI – acute kidney injury, ALD – acute liver dysfunction, CAD – coronary artery disease, COPD – Chronic obstructive pulmonary disease, DVT – deep vein thrombosis, HF – heart failure, HFrEF – heart failure with reduced ejection fraction, MI – myocardial infarction, MODS – multiple organ dysfunction syndrome, PE – pulmonary embolism, RF – respiratory failure, UTB – urinary tract bleeding, TIA – transient ischemic attack, SIRS – systemic inflammatory response syndrome GI – gastrointestinal

Supplementary Table SX. Clinical non-fatal events and hospitalization outcomes in the C2HEST risk strata.

Variables, units (N)	Low risk [0-1]	Medium risk [2-3]	High risk [>4]	OMNIBUS <i>p-value</i>	<i>p-value</i> (for post-hoc analysis)
	mean±SD min-max (N) or n/N (% of risk category)	mean±SD min-max (N) or n/N (% of risk category)	mean±SD min-max (N) or n/N (% of risk category)		
Hospitalization					
Duration of hospitalization, days (2184)	11.6±14.0 1 - 131	13.2±13.6 1 - 124	16.1±15.9 1 - 121	<0.0001	0.064 ^a , <0.0001 ^b , 0.0301 ^c
Admission at ICU (2184)	148/1418(10.4%)	39/492 (7.9%)	27/274 (9.9%)		
End of hospitalisation					
death	119/1418 (8.4%)	110/492 (22.4%)	97/274 (35.5%)	<0.0001	<0.0001 ^{a,b} , 0.00495 ^c
discharge home – full recovery	993/1418(70.0%)	220/492 (44.7%)	103/274 (37.6%)		
transfer to another hospital – worsening	139/1418 (9.8%)	97/492 (19.7%)	44/274 (16.1%)		
transfer to another hospital – in recovery	167/1418(11.8%)	65/492 (13.2%)	30/274 (10.9%)		
Clinical events					
Aborted cardiac arrest (2184)	15/1418 (1.1%)	3/492 (0.6%)	6/274 (2.2%)	0.155	N/A
Shock (2184)	109/1418 (7.7%)	46/492 (9.3%)	33/274 (12.0%)	0.049	N/A
Hypovolemic shock	22/1418 (1.6%)	7/492 (1.4%)	6/274 (2.2%)	0.665	N/A
Cardiogenic shock	7/1418 (0.5%)	11/492 (2.2%)	14/274 (5.1%)	<0.0001	0.0046 ^a , <0.0001 ^b , 0.161 ^c
Septic shock	89/1418 (6.3%)	30/492 (6.1%)	22/274 (8.0%)	0.521	N/A
Venous thromboembolic disease (2184)	47/1418 (3.4%)	13/492 (2.6%)	9/274 (3.3%)	0.911	N/A
Pulmonary embolism (2184)	39/1418 (2.7%)	11/492 (2.2%)	11/274 (3.3%)		N/A
Deep vein thrombosis (2184)	8/1418 (0.6%)	2/492 (0.4%)	0/274 (0.0%)		N/A
MI (2184)	8/1418 (0.6%)	10/492 (2.0%)	8/274 (2.9%)	0.00054	0.0334 ^a , 0.00503 ^b , 1.0 ^c
Acute HF (2184)	8/1418 (0.6%)	22/492 (4.5%)	46/274 (16.8%)	<0.0001	<0.0001 ^{a,b,c}
Stroke/TIA (2184)	18/1418 (1.3%)	19/492 (3.9%)	7/274 (2.6%)	0.00158	0.00199 ^a , 0.54 ^b , 1.0 ^c
New cognitive signs and symptoms (2184)	38/1418 (2.7%)	51/492 (10.4%)	32/274 (11.7%)	<0.0001	<0.0001 ^a , <0.0001 ^b , 1.0 ^c
Pneumonia (2184)	606/1418(42.7%)	279/492 (56.7%)	176/274 64.2%)	<0.0001	<0.0001 ^a , <0.0001 ^b , 0.151 ^c
SIRS (2115)	141/1353(10.5%)	42/489 (8.6%)	36/273 (13.2%)	0.135	N/A
Sepsis (884)	9/576 (1.6%)	7/183 (3.8%)	7/125 (5.6%)	0.0155	0.23 ^a , 0.0405 ^b , 1.0 ^c
AKI (2184)	111/1418 (7.8%)	67/492 (13.6%)	59/274 (21.5%)	<0.0001	0.0006 ^a , <0.0001 ^b , 0.019 ^c
ALD (1975)	30/1257 (2.4%)	22/465 (4.7%)	14/253 (5.5%)	0.00643	0.054 ^a , 0.0362 ^b , 1.0 ^c
MODS (2184)	21/1418 (1.5%)	8/492 (1.6%)	8/274 (2.9%)	0.238	N/A
LA (245)	9/105 (8.6%)	5/79 (6.3%)	8/61 (13.1%)	0.372	N/A
Hyperlactaemia (245)	78/105 (74.3%)	52/79 (65.8%)	37/61 (60.7%)	0.166	N/A
Bleedings (2184)	64/1418 (4.5%)	25/492 (5.1%)	25/274 (9.1%)	0.00711	1.0 ^a , 0.0086 ^b , 0.131 ^c
intracranial (2184)	12/1418 (0.8%)	8/492 (1.6%)	1/274 (0.4%)	0.226	N/A
respiratory (2184)	23/1418 (1.6%)	4/492 (0.8%)	7/274 (2.6%)	0.158	N/A
gastrointestinal (2184)	20/1418 (1.4%)	9/492 (1.8%)	12/274 (4.3%)	0.0164	1.0 ^a , 0.0105 ^b , 0.29 ^c
urinary tract (2184)	9/1418 (0.6%)	4/492 (0.8%)	5/274 (1.8%)	0.151	N/A

Continuous variables are presented as mean±SD range (minimum-maximum) and a number of non-missing values.

Categorized variables are presented as a number with a percentage.

Abbreviations: N-valid measurements, n - number of patients with parameter above cut-off point, SD - standard deviation, ANOVA - analysis of variance, ICU - intensive care unit, MI - myocardial infarction, HF - heart failure,

TIA -transient ischemic attack, SIRS - systemic inflammatory response syndrome, AKI – acute kidney injury, ALD – acute liver dysfunction MODS - multiple organ dysfunction syndrome, LA - lactic acidosis, N/A – not-applicable, a – low risk vs. medium risk, b – low risk vs. high risk, c – medium risk vs. high risk.

Supplementary Table SXI. Discriminatory performance of the C₂HES_T score on the clinical events

Clinical event	AUC	Sensitivity	Specificity
End of hospitalization - full recovery	0.66	0.75	0.51
End of hospitalization - deterioration	0.59	0.50	0.67
End of hospitalization - rehabilitation	0.51	0.62	0.42
End of hospitalization - death	0.71	0.64	0.70
All-cause shock	0.58	0.74	0.437
Hypovolemic shock	0.55	0.71	0.42
Cardiogenic shock	0.77	0.78	0.66
Septic shock	0.56	0.74	0.42
PE	0.52	0.63	0.42
DVT	0.48	0.10	0.97
Venous thromboembolic disease	0.51	0.63	0.42
MI	0.72	0.69	0.65
Myocardial injury	0.67	0.62	0.64
Acute HF	0.86	0.90	0.67
Stroke/TIA	0.64	0.59	0.65
Complete RF	0.58	0.22	0.92
SIRS	0.49	0.16	0.87
Sepsis	0.69	0.57	0.75
AKI	0.65	0.79	0.44
ALD	0.64	0.85	0.40
MODS	0.58	0.38	0.76
All bleedings	0.57	0.222	0.88
Intracranial bleeding	0.56	0.38	0.76
Respiratory tract bleeding	0.51	0.21	0.88
Upper GI tract bleeding	0.64	0.56	0.65
Lower GI tract bleeding	0.61	0.89	0.41
UTB	0.60	0.28	0.93
Gynecological bleeding	0.63	0.929	0.35
Pneumonia	0.62	0.69	0.53

Abbreviations: AKI – acute kidney injury, ALD – acute liver dysfunction, DVT – deep vein thrombosis, HF – heart failure, MI – myocardial infarction, MODS – multiple organ dysfunction syndrome, PE – pulmonary embolism, RF – respiratory failure, UTB – urinary tract bleeding, TIA – transient ischemic attack, SIRS – systemic inflammatory response syndrome GI – gastrointestinal

Supplementary Table SXII. Hazard ratio for the in-hospital all-cause-death for modified C2HEST risk stratification. The “thyroid disease” has been replaced by “hypothyroidism” and “age>75 years” by “age>65 years”, respectively

Total deaths	HR	CI min.	CI max.	p-value	
overall		1.437041	1.380787	1.495586	<0.0001
low vs medium		4.119509	3.139181	5.405980	<0.0001
low vs high		6.654120	5.158194	8.583878	<0.0001

HR – hazard ratio

Supplementary Table SXIII. Odds ratios for quantifying the strength of the association between the modified CH2EST-score and study endpoints and adverse events - the “thyroid disease” has been replaced by “hypothyroidism” and cut-off point for age to “>65 years” as scoring items.

Endpoint	Comparison	OR	CI min.	CI max.	P value
End of hospitalization - death	overall	1.541	1.443	1.648	< 0.0001
	low vs medium	3.990	2.696	6.026	< 0.0001
	low vs high	8.098	5.655	11.912	< 0.0001
End of hospitalization - deterioration	overall	1.183	1.106	1.264	< 0.0001
	low vs medium	2.688	1.926	3.783	< 0.0001
	low vs high	2.400	1.734	3.352	< 0.0001
End of hospitalization - rehabilitation	overall	1.055	0.983	1.131	0.1367
	low vs medium	1.276	0.921	1.766	0.142
	low vs high	1.296	0.953	1.766	0.0984
End of hospitalization - full recovery	overall	0.693	0.658	0.730	< 0.0001
	low vs medium	0.338	0.268	0.425	< 0.0001
	low vs high	0.225	0.181	0.280	< 0.0001
All-cause shock	overall	1.191	1.100	1.287	< 0.0001
	low vs medium	1.720	1.146	2.590	0.0089
	low vs high	2.284	1.583	3.336	< 0.0001
Hypovolemic shock	overall	1.057	0.877	1.261	0.5459
	low vs medium	1.134	0.454	2.757	0.7813
	low vs high	1.549	0.711	3.482	0.274
Cardiogenic shock	overall	1.582	1.326	1.894	< 0.0001
	low vs medium	2.438	0.733	9.342	0.1566
	low vs high	6.066	2.296	20.865	0.001
Septic shock	overall	1.166	1.065	1.274	0.0008
	low vs medium	1.709	1.079	2.724	0.0227
	low vs high	2.163	1.424	3.338	0.0004
PE	overall	1.111	1.007	1.224	0.0034
	low vs medium	1.243	0.759	2.024	0.3831
	low vs high	1.712	1.112	2.664	0.0015
DVT	overall	1.003	0.780	1.262	0.9785
	low vs medium	2.328	0.860	6.874	0.1036
	low vs high	0.940	0.270	3.132	0.9184
MI	overall	1.493	1.230	1.818	< 0.0001
	low vs medium	4.182	0.960	28.610	0.0803
	low vs high	10.380	2.983	65.446	0.0017
Myocardial injury	overall	1.386	1.288	1.495	< 0.0001
	low vs medium	2.893	1.898	4.498	< 0.0001
	low vs high	4.753	3.225	7.188	< 0.0001
acute HF	overall	1.988	1.748	2.277	< 0.0001
	low vs medium	9.890	2.750	63.140	0.0025
	low vs high	36.730	11.434	224.515	< 0.0001
Stroke/TIA	overall	1.232	1.055	1.433	0.0073
	low vs medium	2.276	0.953	5.781	0.0692
	low vs high	3.315	1.535	7.949	0.0038
Complete RF	overall	1.191	1.046	1.361	0.0092
	low vs medium	0.770	0.376	1.574	0.4731
	low vs high	1.554	0.810	2.989	0.184
Pneumonia	overall	1.287	1.225	1.355	< 0.0001
	low vs medium	2.606	2.103	3.234	< 0.0001

	low vs high	3.044	2.480	3.742	< 0.0001
	overall	1.041	0.964	1.123	0.3033
SIRS	low vs medium	0.963	0.675	1.368	0.8349
	low vs high	1.027	0.739	1.426	0.874
	overall	1.407	1.149	1.727	0.0009
Sepsis	low vs medium	0.878	0.179	3.614	0.8599
	low vs high	3.660	1.399	11.364	0.013
	overall	1.349	1.257	1.449	< 0.0001
AKI	low vs medium	2.921	1.949	4.447	< 0.0001
	low vs high	4.507	3.113	6.678	< 0.0001
	overall	1.184	1.040	1.344	0.0098
ALD	low vs medium	2.859	1.421	6.121	0.0044
	low vs high	2.935	1.508	6.154	0.0024
	overall	1.205	1.016	1.421	0.0285
MODS	low vs medium	1.249	0.493	3.117	0.631
	low vs high	2.056	0.961	4.657	0.0699
	overall	1.123	1.015	1.240	0.0225
All bleedings	low vs medium	0.882	0.522	1.464	0.6315
	low vs high	1.478	0.963	2.286	0.0753
	overall	1.063	0.834	1.330	0.6066
Intracranial bleeding	low vs medium	0.591	0.127	2.135	0.4472
	low vs high	1.784	0.699	4.871	0.2337
	overall	1.075	0.891	1.283	0.4378
Respiratory tract bleeding	low vs medium	0.549	0.195	1.359	0.2172
	low vs high	0.977	0.455	2.071	0.952
	overall	1.202	1.001	1.434	0.0443
Upper GI tract bleeding	low vs medium	2.803	1.082	8.089	0.0404
	low vs high	2.663	1.063	7.554	0.0458
	overall	1.057	0.722	1.483	0.7568
Lower GI tract bleeding	low vs medium	6.967	1.120	133.657	0.0767
	low vs high	3.394	0.433	68.690	0.2904
	overall	1.268	0.997	1.600	0.0469
UTB	low vs medium	0.229	0.012	1.347	0.1733
	low vs high	2.084	0.789	6.076	0.1499

Abbreviations: AKI – acute kidney injury, ALD – acute liver dysfunction, DVT – deep vein thrombosis, HF – heart failure, MI – myocardial infarction, MODS – multiple organ dysfunction syndrome, PE – pulmonary embolism, RF – respiratory failure, UTB – urinary tract bleeding, TIA – transient ischemic attack, SIRS – systemic inflammatory response syndrome GI – gastrointestinal

95% asymptotic OR confidence interval (overall)



