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Comparison of prognostic scores for inpatients with COVID-19: a
retrospective monocentric cohort study

Martin, Jeremy Hector; Gaudet-Blavignac, Christophe; Lovis, Christian; Stirnemann, Jérôme;
Groscurin, Olivier; Leidi, Antonio Siro Gabriele; Gayet-Ageron, Angèle; Iten, Anne Clemence Marie;
Carballo, Juan Sebastian; Reny, Jean-Luc; Darbellay, Pauline; Berner, Amandine; Marti, Christophe Alberic

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Comparison of prognostic scores for COVID-19 inpatients: A retrospective monocentric cohort study. Supplemental Material

Table S1 Characteristics of patients according to ICU-admission

Characteristics	Total N = 2122 ^a	No-ICU group N = 1906 ^a	ICU group N = 216 ^a	p-value ^b
30-day mortality, n (%)	303 (14.3%)	256 (13.4%)	47 (21.8%)	0.002
NTBR-NSI, n (%)	558 (26.3%)	549 (28.8%)	9 (4.2%)	<0.0001
Age (years), mean (sd)	68.9 (18.1)	69.3 (18.6)	65.8 (12.6)	<0.0001
Female Gender, n (%)	937 (44.2%)	884 (46.4%)	53 (24.5%)	<0.0001
Nb of comorbidities, n (%)				<0.0001
0	853 (40.2%)	841 (44.1%)	12 (5.5%)	
1	515 (24.3%)	468 (24.6%)	47 (21.8%)	
≥2	754 (35.5%)	597 (31.3%)	157 (72.7%)	
RR (b/m), mean (sd)	30.1 (7.8)	29.5 (7.6)	35 (8.5)	<0.0001
SpO2 (%), mean (sd)	94.4 (3.6)	94.5 (3.6)	93.6 (3.8)	<0.0001
FiO2 (%), mean (sd)	31.5 (15.9)	29.2 (12.6)	51.9 (25)	<0.0001
PaO2/FiO2 (mmHg), mean (sd)	291.6 (112.2)	303.6 (107.4)	186.6 (97.2)	<0.0001
SBP (mmHg), mean (sd)	102.9 (18.6)	103.9 (18.2)	92.8 (19.1)	<0.0001
DBP (mmHg), mean (sd)	64.6 (13.4)	65.2 (13.3)	59.81 (14)	<0.0001
MBP (mmHg), mean (sd)	76.8 (13.9)	77.5 (13.5)	70.4 (16)	<0.0001
NE (µg/kg/min), n (%)	15 (0.7%)	7 (0.37%)	8 (3.7%)	<0.0001
Creatinine (mg/dl), mean (sd)	104.3 (88.3)	103.8 (90.6)	108.1 (66.2)	<0.0001
Urea (mg/dl), mean (sd)	7.4 (5.6)	7.39 (5.6)	7.9 (5)	<0.0001
Liver Bilirubin (mg/dl), mean (sd)	10.1 (18.1)	10.1 (19.1)	10.1 (5.8)	<0.0001
Thrombocytes (10³/mm³), mean (sd)	206.1 (85.2)	206.7 (82.8)	201.5 (103)	<0.0001
CRP (mg/dl), mean (sd)	84.7 (77.8)	79.38 (74.2)	129.1 (92.4)	<0.0001
qSOFA, n (%)				<0.0001
Score 0	236 (11.1%)	230 (12.1%)	6 (2.8%)	
Score 1	1114 (52.5%)	1008 (52.9%)	106 (49.1%)	
Score ≥2	772 (36.4%)	668 (35.1%)	104 (48.1%)	
SOFA, n (%)				<0.0001
Score 0-6	2000 (94.3%)	1820 (95.5%)	180 (83.3%)	
Score 7-9	112 (5.3%)	80 (4.2%)	32 (14.8%)	
Score ≥10	10 (0.5%)	6(0.3%)	4 (1.9%)	
CURB-65, n (%)				<0.0001
Score 0-1	896 (42.2%)	841 (44%)	55 (30%)	
Score 2	601 (28.3%)	522 (27.4%)	79 (36.6%)	
Score ≥3	625 (29.4%)	543 (28.4%)	82 (38%)	
4C, n (%)				<0.0001

Comparison of prognostic scores for COVID-19 inpatients: A retrospective monocentric cohort study. Supplemental Material

Score 0-3	210 (9.9%)	209 (11%)	1 (0.5%)
Score 4-8	487 (23%)	461 (24.2%)	26 (12%)
Score 9-14	1084 (51.1%)	935 (49.1%)	149 (69%)
Score ≥15	341 (16.1%)	301 (15.8%)	40 (18.5%)
ROX, n (%)	<0.0001		
Score <5	214 (10.7%)	131 (7.3%)	83 (42.6%)
Score 5-15	1134 (56.8%)	1035 (57.4%)	99 (50.8%)
Score 15-25	576 (28.8%)	563 (31.2%)	13 (6.7%)
Score ≥25	74 (3.7%)	74 (4.1%)	0

Table S2 Discriminatory performance of prognostic scores with exclusion of NTBR-NSI patients

Score system	ICU-admission		30-days Mortality	
	AUC	95%CI	AUC	95%CI
qSOFA	0.60	0.56-0.64	0.55	0.50-0.61
SOFA	0.78	0.75-0.82	0.75	0.70-0.80
CURB-65	0.67	0.63-0.71	0.77	0.73-0.81
4C	0.72	0.69-0.75	0.84	0.81-0.87
ROX-Index	0.81	0.78-0.85	0.75	0.70-0.81

NTBR-NSI: Not To Be Reanimated and not candidate to the ICU; (q)SOFA = (quick) Sequential Organ Failure Assessment Score; ROX = Respiratory rate and OXYgenation; ICU: Intensive Care Unit; AUC: Area Under the Curve; CI: Confidence Interval.

Table S3 Discriminatory performance of prognostic scores for the combined outcome ICU-admission or 30-days mortality)

Score system	Combined Outcome		Combined Outcome (without NTBR-NSI)	
	AUC	95%CI	AUC	95%CI
qSOFA	0.60	0.58-0.63	0.60	0.57-0.63
SOFA	0.77	0.75-0.80	0.79	0.76-0.82
CURB-65	0.70	0.68-0.73	0.70	0.67-0.74
4C	0.77	0.75-0.79	0.77	0.74-0.79
ROX-Index	0.74	0.72-0.77	0.80	0.77-0.83

NTBR-NSI: Not To Be Reanimated and not candidate to the ICU (in french: SI = Soins Intensifs); (q)SOFA = (quick) Sequential Organ Failure Assessment Score; ROX = Respiratory rate and OXYgenation; ICU: Intensive Care Unit; AUC: Area Under the Curve; CI: Confidence Interval.

Comparison of prognostic scores for COVID-19 inpatients: A retrospective monocentric cohort study. Supplemental Material

Table S4 intrinsic and extrinsic performance of prognostic scores for 30-days mortality

Score system	Sensitivity (95% CI)	Specificity (95% CI)	PPV (95% CI)	NPV (95% CI)
qSOFA				
>0	0.95 (0.92-0.97)	0.12 (0.10-0.13)	0.152 (0.14-0.15)	0.93 (0.90-0.96)
>1	0.47 (0.42-0.53)	0.65 (0.63-0.67)	0.18 (0.16-0.20)	0.88 (0.87-0.89)
>2	0.03 (0.01-0.05)	0.99 (0.98-0.99)	0.40 (0.22-0.60)	0.86 (0.85-0.86)
SOFA				
>6	0.16 (0.12-0.21)	0.96 (0.95-0.96)	0.41 (0.32-0.49)	0.87 (0.86-0.87)
>9	0.02 (0.00-0.04)	0.99 (0.99-1.00)	0.71 (0.37-1.00)	0.85 (0.85-0.86)
>12	0.00 (0.00-0.01)	1.00 (1.00-1.00)	1.00 (1.00-1.00)	0.85 (0.85-0.85)
CURB-65				
>1	0.85 (0.81-0.89)	0.46 (0.44-0.49)	0.21 (0.20-0.22)	0.95 (0.93-0.96)
>2	0.61 (0.56-0.67)	0.75 (0.73-0.77)	0.29 (0.27-0.32)	0.92 (0.91-0.93)
>3	0.28 (0.22-0.32)	0.93 (0.91-0.94)	0.40 (0.34-0.46)	0.88 (0.87-0.89)
4C				
>3	1.00 (1.00-1.00)	0.11 (0.10-0.13)	0.15 (0.15-0.16)	1.00 (1.00-1.00)
>8	0.98 (0.97-0.99)	0.38 (0.36-0.40)	0.20 (0.20-0.21)	0.99 (0.98-0.99)
>14	0.50 (0.45-0.56)	0.89 (0.88-0.91)	0.45 (0.40-0.49)	0.91 (0.90-0.92)
ROX				
<5	0.25 (0.19-0.30)	0.91 (0.90-0.92)	0.33 (0.28-0.39)	0.87 (0.87-0.88)
<15	0.83 (0.79-0.87)	0.35 (0.32-0.37)	0.17 (0.17-0.18)	0.92 (0.90-0.94)
<25	0.98 (0.96-0.99)	0.04 (0.03-0.05)	0.14 (0.14-0.15)	0.93 (0.87-0.98)

Comparison of prognostic scores for COVID-19 inpatients: A retrospective monocentric cohort study. Supplemental Material

PPV = Positive Predictive Value; NPV = Negative Predictive Value; CI = Confidence Interval; (q)SOFA = (quick) Sequential Organ Failure Assessment Score; ROX = Respiratory rate and OXygenation.

Table S5 intrinsic and extrinsic performance of prognostic scores for ICU-admission

Score system	Sensitivity (95% CI)	Specificity (95% CI)	PPV (95% CI)	NPV (95% CI)
qSOFA				
>0	0.97 (0.94-0.99)	0.12 (0.10-0.13)	0.11 (0.10-0.11)	0.97 (0.95-0.99)
>1	0.48 (0.41-0.54)	0.64 (0.62-0.67)	0.13 (0.11-0.15)	0.91 (0.90-0.92)
>2	0.01 (0.00-0.02)	0.98 (0.98-0.99)	0.07 (0.00-0.18)	0.89 (0.89-0.89)
SOFA				
>6	0.16 (0.11-0.21)	0.95 (0.94-0.96)	0.29 (0.21-0.37)	0.91 (0.90-0.91)
>9	0.01 (0.00-0.03)	0.10 (0.99-0.10)	0.40 (0.10-0.75)	0.89 (0.89-0.90)
>12	0.00 (0.00-0.00)	0.99 (0.99-1.0)	0.00 (0.00-0.00)	0.89 (0.89-0.89)
CURB-65				
>1	0.74 (0.68-0.80)	0.44 (0.41-0.46)	0.13 (0.12-0.14)	0.93 (0.92-0.95)
>2	0.37 (0.31-0.44)	0.71 (0.69-0.73)	0.13 (0.11-0.15)	0.91 (0.90-0.91)
>3	0.13 (0.09-0.18)	0.90 (0.89-0.91)	0.13 (0.09-0.18)	0.90 (0.89-0.90)
4C				
>3	0.99 (0.98-1.00)	0.10 (0.09-0.12)	0.11 (0.11-0.11)	0.99 (0.98-1.00)
>8	0.87 (0.82-0.91)	0.35 (0.33-0.37)	0.13 (0.12-0.13)	0.96 (0.94-0.97)
>14	0.18 (0.13-0.23)	0.84 (0.82-0.85)	0.11 (0.08-0.14)	0.90 (0.89-0.90)
ROX				
<5	0.42 (0.35-0.49)	0.92 (0.91-0.93)	0.38 (0.33-0.44)	0.93 (0.93-0.94)
<15	0.93 (0.89-0.96)	0.35 (0.33-0.37)	0.13 (0.12-0.14)	0.98 (0.96-0.98)
<25	1.00 (1.00-1.00)	0.04 (0.03-0.05)	0.10 (0.10-0.10)	1.00 (1.00-1.00)

PPV = Positive Predictive Value; NPV = Negative Predictive Value; CI = Confidence Interval; (q)SOFA = (quick) Sequential Organ Failure Assessment Score; ROX = Respiratory rate and OXygenation.