SUPPLEMENTARY DATA

Table 1 of the supplementary data

Mean BIS values registered during the first 24 hours of TTM in the 25 patients who died in the first 48 hours without neurological evaluation and who were excluded from the final analysis

Hours since TTM initiation	Mean BIS ± SD
0	19.5 ± 19.5
1	19.5 ± 20.7
2	20.6 ± 23.4
3	17.4 ± 16.2
4	20.1 ± 22.4
5	22.6 ± 19.8
6	19.2 ± 19.3
7	20.8 ± 19.7
8	21.5 ± 20.1
9	19.1 ± 19.9
10	15.8 ± 21.8
11	14.7 ± 19.1
12	18.8 ± 19.2
13	9.2 ± 15.2
14	11.1 ± 16.1
15	15.0 ± 18.7
16	14.8 ± 18.8
17	13.5 ± 16.2
18	15.7 ± 17.5
19	20.3 ± 18.0
20	15.2 ± 18.8
21	14.3 ± 17.7
22	16.3 ± 19.3
23	16.3 ± 22.0
24	9.9 ± 18.3

BIS, bispectral index; SD, standard deviation; TTM, targeted temperature management.

Table 2 of the supplementary data

Causes of death of the 25 patients who died in the first 48 hours without neurological evaluation and who were excluded from the final analysis

Cardiovascular	17 (68.0%)
Brain death	5 (20.0%)
Haemorrhagic	1 (4.0%)
Respiratory	1 (4.0%)
WLST due to other causes*	1 (4.0%)

WLST, withdrawal of life-sustaining therapies.

*After resuscitation, caregivers were aware of the patient's advanced directives including do not resuscitate and do not intubate orders, so WLST was decided in agreement with the family, because the patient was unstable, and a poor prognosis was presumed by the main characteristics of the CPR (asystole, prolonged, unwitnessed).

Table 3 of the supplementary data

Changes in neurological status according to the CPC scale between the moment of first comprehensive neurological evaluation in the acute cardiovascular care unit and at 3 months of follow-up (n = 340)

	In ACCU at first neurological evaluation	At 3 months' follow-up
CPC score		
1	183 (53.8)	161 (47.4%)
2	28 (8.2)	32 (9.4%)
3	9 (2.7)	9 (2.7%)
4	108 (31.3)	3 (0.9%)
5	12 (3.5)	135 (39.7%)
Worsening of neurological status (from CPC 1-2 to CPC 3-5 at 3 months' follow-up)		19 (5.6)
CPC 1-2 to CPC 3		2 (0.6)
CPC 1-2 to CPC 5		17 (5.0)
Improvement of neurological status (from CPC 3-5 to CPC 1-2 at 3 months' follow-up)		1 (0.3)

ACCU, acute cardiovascular care unit; CPC, cerebral performance category scale.

Table 4 of the supplementary data

Area under the curve (AUC) of hourly BIS for the prediction of favorable neurological outcome (CPC 1-2) during the first 48 hours of targeted temperature management (TTM)

Hours since TTM initiation	AUC (95%CI)	Hours since TTM initiation	AUC (95%CI)
0	0.680 (0.609-0.743)	25	0.730 (0.677-0.781)
1	0.768 (0.707-0.820)	26	0.732 (0.680-0.782)
2	0.819 (0.767-0863)	27	0.742 (0.687-0.789)
3	0.835 (0.787-0.876)	28	0.737 (0.685-0.787)
4	0.852 (0.807-0.892)	29	0.726 (0.671-0.774)
5	0.839 (0.792-0.879)	30	0.750 (0.696-0.798)
6	0.856 (0.811-0.894)	31	0.756 (0.703-0.803)
7	0.878 (0.837-0.913)	32	0.711 (0.655-0.762)
8	0.872 (0.830-0.908)	33	0.678 (0.620-0.730)
9	0.826 (0.777-0.866)	34	0.720 (0.664-0.769)
10	0.833 (0.786-0.873)	35	0.699 (0.642-0.750)
11	0.844 (0.797-0.882)	36	0.692 (0.638-0.746)
12	0.809 (0.761-0.853)	37	0.662 (0.605-0.718)
13	0.843 (0.797-0.882)	38	0.657 (0.596-0.710)
14	0.836 (0.789-0.875)	39	0.622 (0.564-0.680)
15	0.823 (0.774-0.863)	40	0.639 (0.581-0.697)
16	0.830 (0.783-0.870)	41	0.643 (0.583-0.698)
17	0.817 (0.768-0.859)	42	0.600 (0.582-0.698)
18	0.796 (0.744-0.838)	43	0.603 (0.540-0.660)
19	0.786 (0.734-0.831)	44	0.580 (0.518-0.638)
20	0.811 (0.763-0.855)	45	0.576 (0.511-0.636)
21	0.808 (0.759-0.852)	46	0.578 (0.516-0.640)
22	0.773 (0.724-0.820)	47	0.534 (0.472-0.596)
23	0.758 (0.705-0.805)	48	0.521 (0.461-0.584)
24	0.738 (0.685-0.788)		

Table 5 of the supplementary data

Area under the curve (AUC) of hourly SR for the prediction of unfavorable neurological outcome (CPC 3-5) during the first 48 hours of targeted temperature management (TTM)

Hours since TTM initiation	AUC (95% CI)	Hours since TTM initiation	AUC (95% CI)
0	0.772 (0.677-0.852)	25	0.868 (0.800-0.918)
1	0.843 (0.760-0.903)	26	0.876 (0.811-0.925)
2	0.869 (0.803-0.924)	27	0.822 (0.752-0.881)
3	0.891 (0.831-0.939)	28	0.809 (0.734-0.870)
4	0.891 (0.827-0.936)	29	0.809 (0.738-0.870)
5	0.888 (0.827-0.933)	30	0.867 (0.796-0.913)
6	0.885 (0.822-0.934)	31	0.862 (0.794-0.913)
7	0.919 (0.862-0.957)	32	0.802 (0.726-0.864)
8	0.901 (0.837-0.942)	33	0.848 (0.781-0.903)
9	0.886 (0.826-0.935)	34	0.821 (0.749-0.878)
10	0.905 (0.846-0.947)	35	0.802 (0.726-0.864)
11	0.913 (0.858-0.956)	36	0.795 (0.718-0.856)
12	0.893 (0.833-0.940)	37	0.770 (0.689-0.834)
13	0.900 (0.840-0.945)	38	0.827 (0.749-0.884)
14	0.913 (0.853-0.952)	39	0.761 (0.679-0.828)
15	0.900 (0.836-0.941)	40	0.718 (0.632-0.787)
16	0.902 (0.840-0.943)	41	0.751 (0.669-0.817)
17	0.906 (0.848-0.950)	42	0.746 (0.664-0.817)
18	0.920 (0.864-0.958)	43	0.721 (0.635-0.792)
19	0.874 (0.801-0.924)	44	0.640 (0.554-0.723)
20	0.878 (0.814-0 .928)	45	0.759 (0.677-0.831)
21	0.911 (0.855-0.955)	46	0.664 (0.575-0.741)
22	0.869 (0.800-0.918)	47	0.700 (0.611-0.774)
23	0.882 (0.812-0.930)	48	0.642 (0.554-0.723)
24	0.893 (0.825-0.937)		

Table 6 of the supplementary data

Statistical outcomes, calibration, and internal validation parameters of the logistic regression models for prediction of neurological function according to average BIS and SR values during the first 6, 12 and 24 hours of targeted temperature management after cardiac arrest

Model	p (LR chi2)	PseudoR^2	p (Hosmer-Lemeshow)	AUC (95% CI)	Estimated AUC (bias)*
Av. BIS 0-6h for CPC 1-2	< 0.001	0.290	0.072	0.843 (0.799 – 0.881)	0.843 (< 0.001)
Av. BIS 0-12h for CPC 1-2	< 0.001	0.356	< 0.001	0.869 (0.828 – 0.903)	0.869 (< 0.001)
Av. BIS 0-24h for CPC 1-2	< 0.001	0.396	< 0.001	0.876 (0.837 – 0.909)	0.876 (< 0.001)
Av. SR 0-6h for CPC 3-5	< 0.001	0.434	0.495	0.887 (0.828 – 0.931)	0.876 (0.011)
Av. SR 0-12h for CPC 3-5	< 0.001	0.497	0.332	0.906 (0.852 – 0.946)	0.896 (0.010)
Av. SR 0-24h for CPC 3-5	< 0.001	0.571	0.708	0.923 (0.872 – 0.958)	0.917 (0.006)

Av., average; AUC, area under the receiving-operator curve; BIS, bispectral index; CI, confidence interval; CPC, cerebral performance category scale; LR, likelihood ratio; SR, suppression ratio.

*Internal validation of the logistic regression models using bootstrapping techniques, which give an estimated AUC and the difference between this estimated parameter and that provided by the model (bias).

Figure 1 of the supplementary data. Receiving-operator characteristics curve for bispectral index (BIS) prediction of favorable neurological outcome, calculated as t average BIS values during the first 6 hours of targeted temperature management.

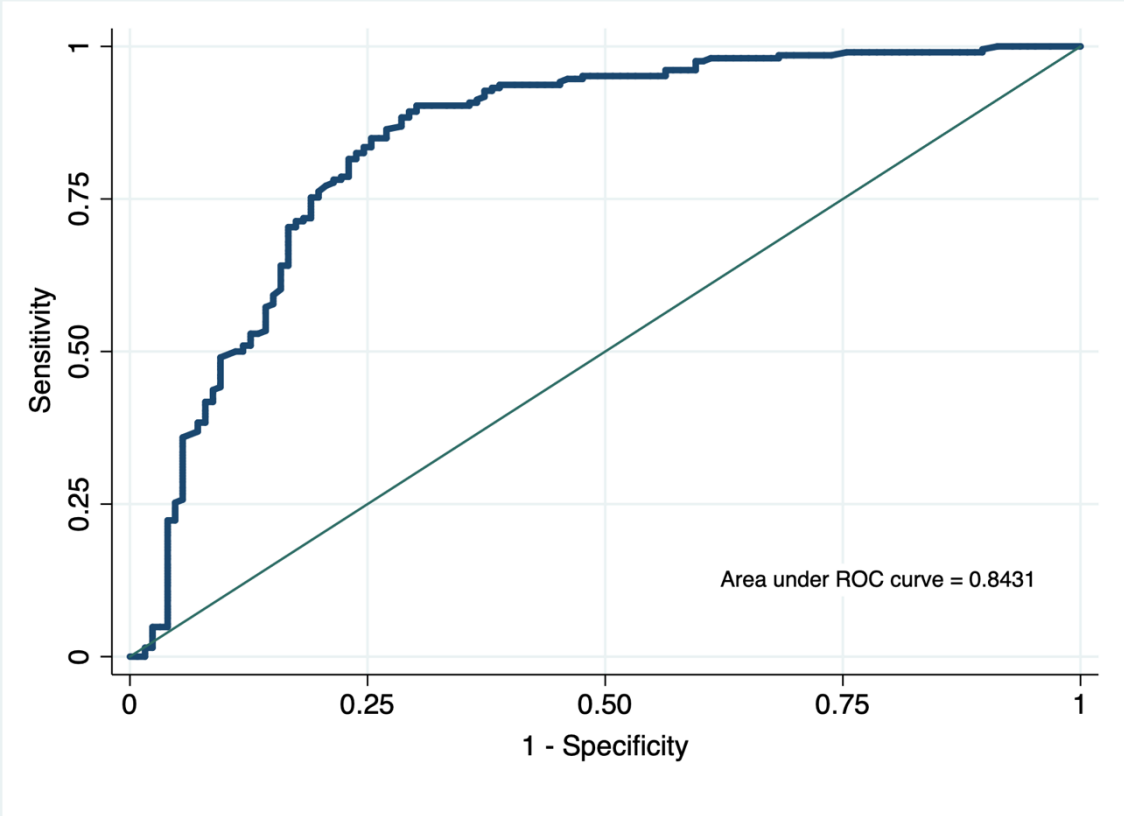


Figure 2 of the supplementary data. Receiving-operator characteristics curve for bispectral index (BIS) prediction of favorable neurological outcome, calculated as average BIS values during the first 12 hours of targeted temperature management.

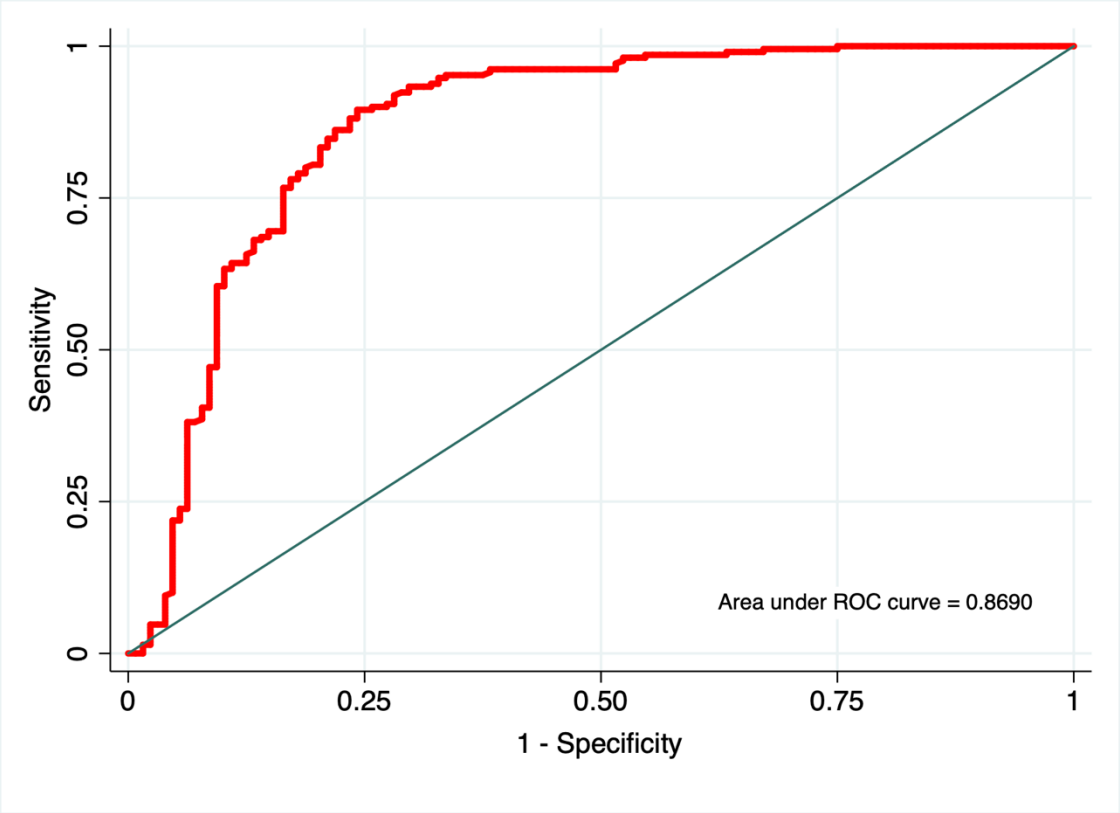


Figure 3 of the supplementary data. Receiving-operator characteristics curve for bispectral index (BIS) prediction of favorable neurological outcome, calculated as average BIS values during the first 24 hours of targeted temperature management.

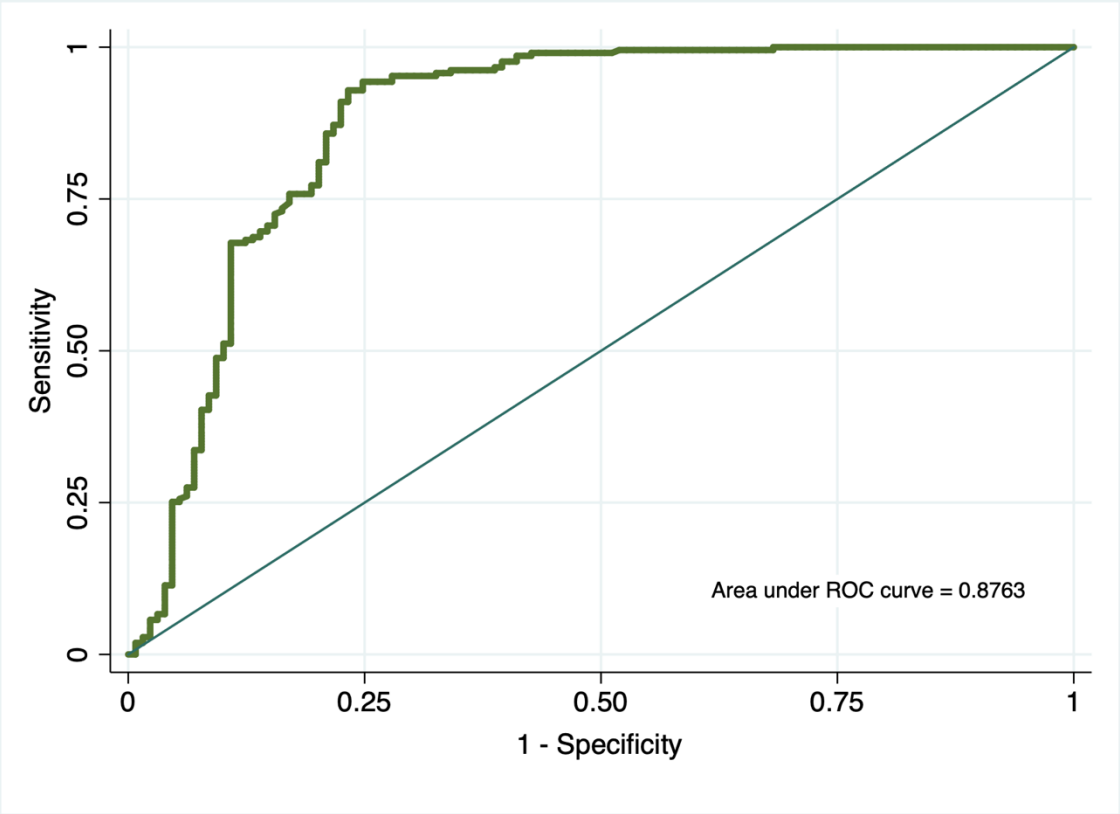


Figure 4 of the supplementary data. Receiving-operator characteristics curve for suppression ratio (SR) prediction of poor neurological outcome, calculated as average SR values during the first 6 hours of targeted temperature management.

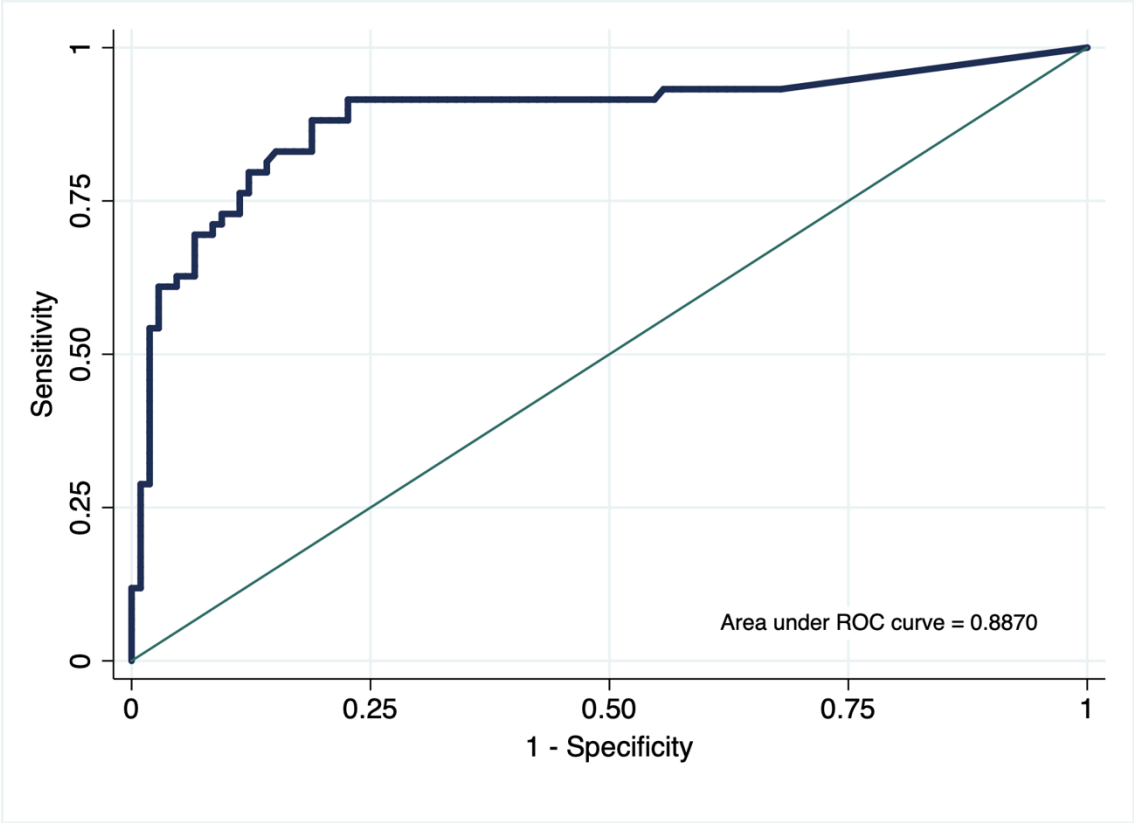


Figure 5 of the supplementary data. Receiving-operator characteristics curve for suppression ratio (SR) prediction of poor neurological outcome, calculated as average SR values during the first 12 hours of targeted temperature management.

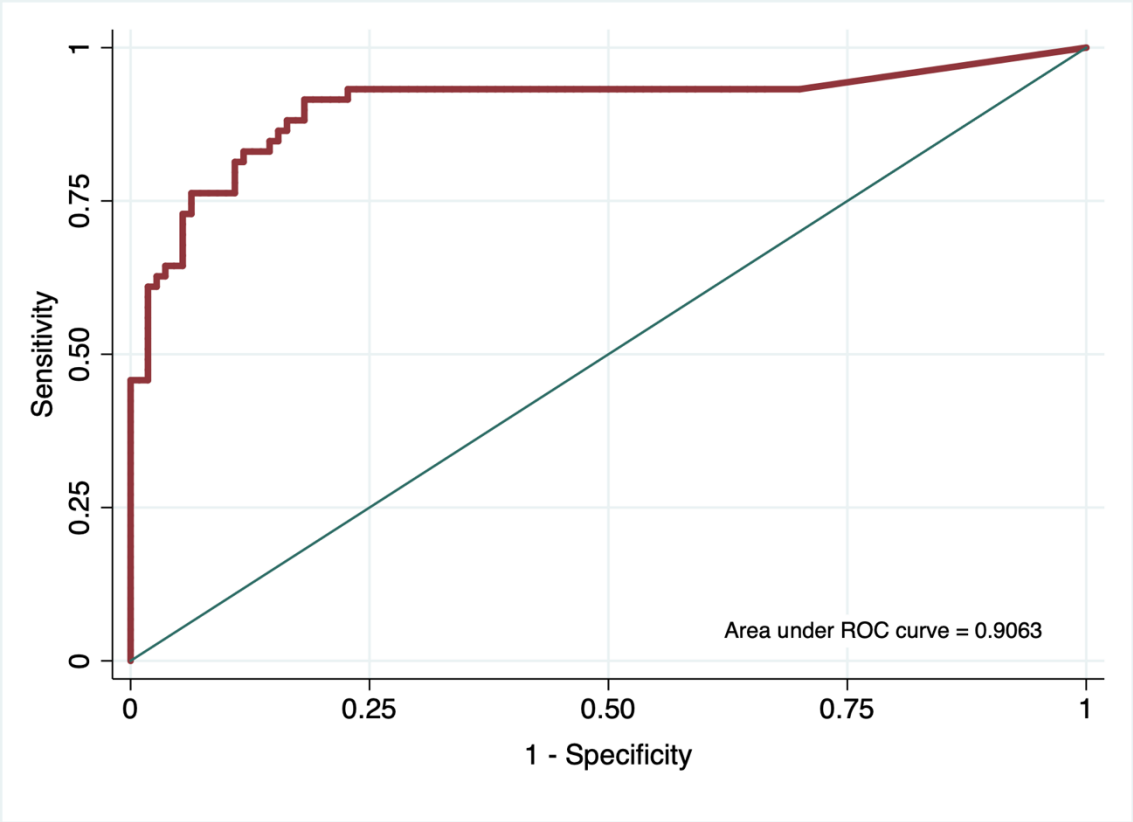


Figure 6 of the supplementary data. Receiving-operator characteristics curve for suppression ratio (SR) prediction of poor neurological outcome, calculated as average SR values during first 24 hours of targeted temperature management.

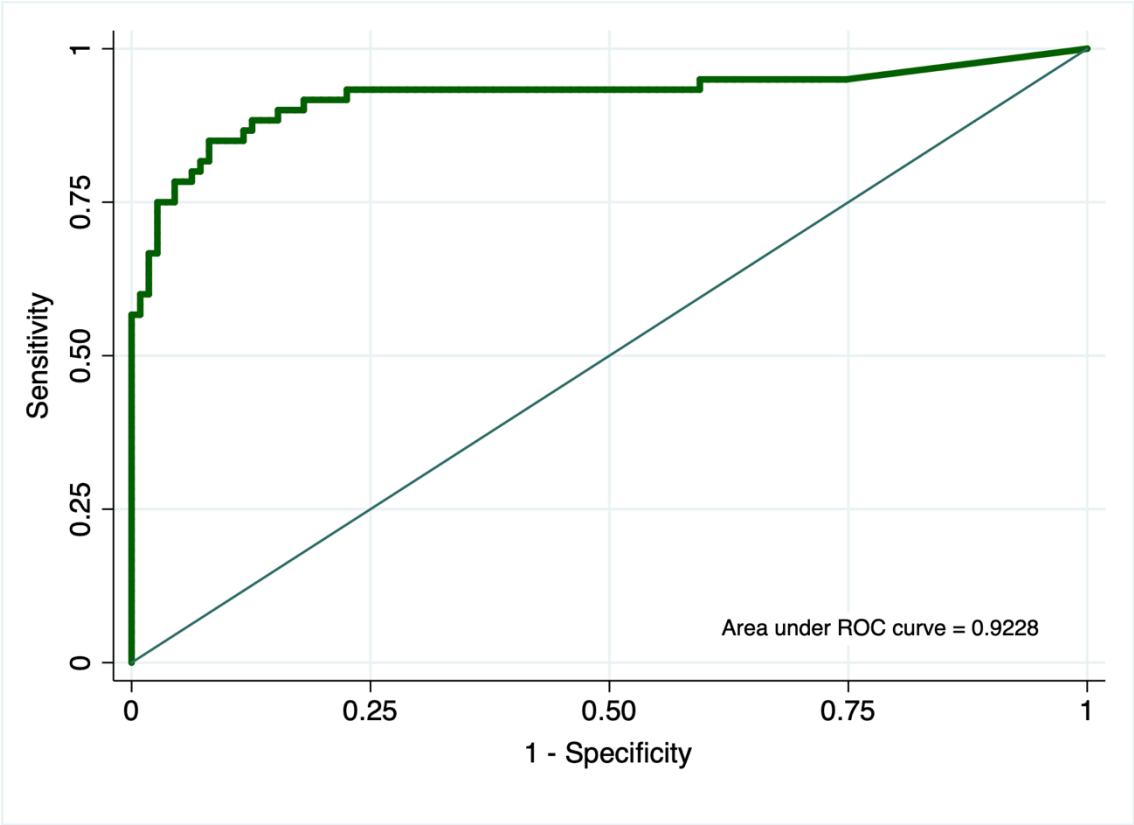
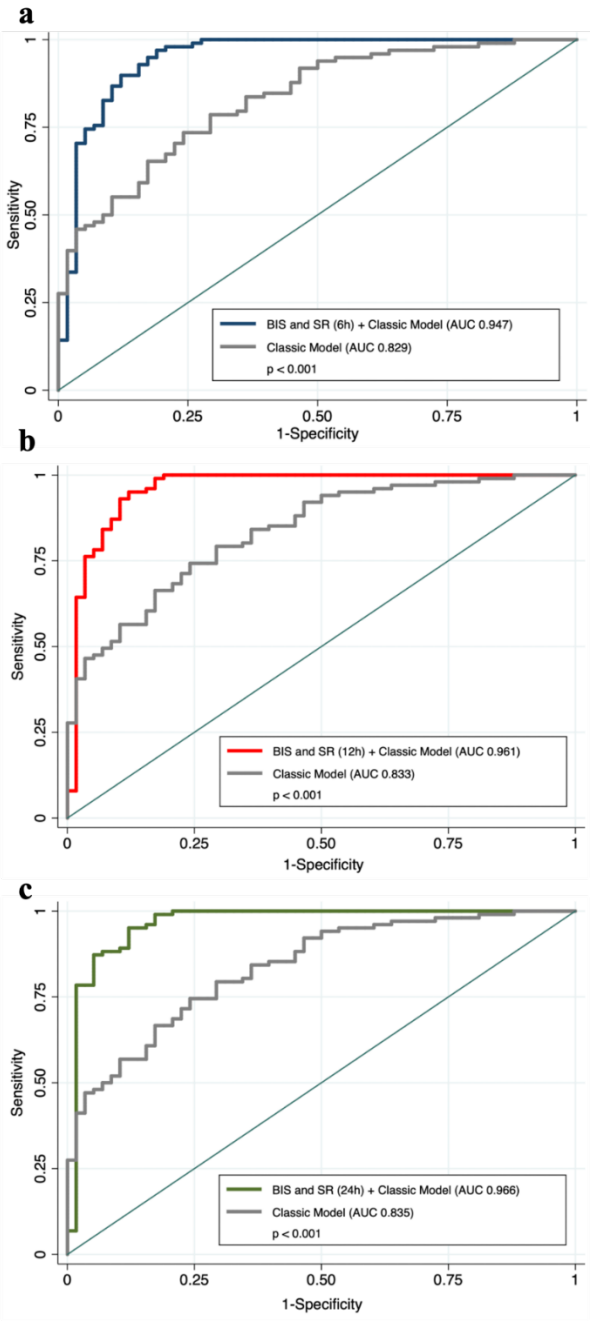


Figure 7 of the supplementary data. Comparison of receiving-operator characteristic (ROC) curves between a logistic regression model with classic variables* used for early neurological prediction (CPC 1-2 vs. CPC 3-5) and the same model including average BIS and SR values during the first 6 (a), 12 (b) and 24 hours (c) of TTM.



*The classic model includes the following variables: witnessed cardiac arrest, initial rhythm, time to ROSC, pH on admission, and serum lactate on admission.

BIS, bispectral index; CPC, Cerebral Performance Category scale; ROSC, recovery of spontaneous circulation; SR, suppression ratio; TTM, targeted temperature management.