

Supplementary materials Catalogue

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Supplementary Table 1 Baseline characteristics of ischemic stroke patients with successful and unsuccessful 1-year follow up.

	Total n=887	Lost n=352	Success n=535	P value
Age, years	67.00 (58.00- 75.00)	67.00(57.00-75.00)	67.00 (59.00-75.00)	0.981
Sex, male	604 (68.1)	253(71.88%)	351(65.61)	0.050
BMI, Kg/m ²	24.36 (22.13- 26.22)	23.85(21.48-25.39)	24.69(22.42-26.57)	0.009
Smoke, yes	417 (47.1)	183(52.14)	234(43.74)	0.001
Drink, yes	321 (36.2)	226 (35.9)	95 (37.1)	0.787
Diabetes, yes	370 (41.7)	156 (44.32)	214(40.00)	0.202
Atrial fibrillation, yes	106 (12.0)	43(12.22)	63(11.78)	0.843
Hypertension, yes	748 (84.3)	294(83.52)	454(84.86)	0.592
Hyperlipidemia, yes	433 (49.4)	155(44.67)	278(52.45)	0.024
TOAST-LAA, yes	380 (42.8)	186(52.84)	194(36.26)	<0.001
Lymphocyte, x10 ⁹ /L	1.67 (1.28- 2.09)	1.64(1.26-2.06)	1.67(1.30-2.10)	0.240
Baseline NIHSS	4.00 (2.00- 6.00)	4.00(2.00-7.00)	3.00(2.00-5.00)	<0.001
Arterial territory				0.568
ACA	23 (2.6)	16 (2.5)	7 (2.7)	
MCA	461 (52.0)	331 (52.5)	130 (50.8)	
PCA	237 (26.7)	161 (25.5)	76 (29.7)	
Mixed	166 (18.7)	123 (19.5)	43 (16.8)	

Values are presented as median (IQR) or n (%).

Abbreviations: BMI, Body Mass Index; TOAST, Trial of Org 10172 in Acute Stroke Treatment; NIHSS, National Institutes of Health Stroke Scale; LAA, large-artery atherosclerosis;

Supplementary Table 2. Clinical characteristics and ischemic stroke prognosis in patients classified by arterial topography.

	ACA n=23	MCA n=461	PCA n=237	Mixed n=166	P value
Admission features					
Age, years	72.00 (63.00, 77.50)	66.00 (58.00, 74.00)	68.00 (59.00, 75.00)	69.50 (59.00, 78.00)	0.022
Sex, female	13 (56.5)	311 (67.5)	169 (71.3)	111 (66.9)	0.433
BMI, kg/m ²	23.43 (21.55, 25.91)	24.22 (22.04, 26.08)	24.80 (22.77, 26.54)	23.90 (21.63, 26.00)	0.462
Smoke, yes	10 (43.5)	226 (49.0)	100 (42.4)	81 (48.8)	0.374
Drink, yes	9 (39.1)	172 (37.4)	80 (33.8)	60 (36.1)	0.806
Diabetes, yes	10 (43.5)	180 (39.0)	119 (50.2)	61 (36.7)	0.018
Atrial fibrillation, yes	2 (8.7)	47 (10.2)	19 (8.0)	38 (22.9)	<0.001
Hypertension, yes	18 (78.3)	393 (85.2)	202 (85.2)	135 (81.3)	0.529
Hyperlipidemia, yes	13 (56.5)	226 (49.7)	116 (49.8)	78 (47.0)	0.830
Lymphocyte, x10 ⁹ /L	1.65 (1.14, 2.02)	1.65 (1.29, 2.10)	1.72 (1.34, 2.06)	1.58 (1.22, 2.10)	0.735
Baseline NIHSS	2.00 (1.00, 3.00)	4.00 (2.00, 6.00)	3.00 (2.00, 5.00)	4.00 (2.00, 7.00)	<0.001
TOAST classification					<0.001
LAA	6 (26.1)	202 (43.8)	116 (48.9)	56 (33.7)	
CE	1 (4.3)	32 (6.9)	12 (5.1)	26 (15.7)	
SVO	1 (4.3)	43 (9.3)	4 (1.7)	4 (2.4)	
Other determined	0 (0.0)	1 (0.2)	1 (0.4)	1 (0.6)	
Undetermined	15 (65.2)	183 (39.7)	104 (43.9)	79 (47.6)	
Follow up period					
3-month mRS scores	1 (0, 1.50)	1 (1, 3)	1 (0, 2)	2 (1, 4)	0.001
6-month mRS scores	1 (0, 1.50)	1 (1, 3)	1 (0, 2)	2 (1, 4)	0.002
1-year mRS scores	1 (0, 1)	1 (0, 3)	1 (0, 2)	2 (1, 4)	0.001
3-month BI scores	100 (100, 100)	100 (90, 100)	100 (96.25, 100)	100 (90, 100)	0.477
6-month BI scores	100 (96.25, 100)	100 (100, 100)	100 (100, 100)	100 (90, 100)	0.360
1-year BI scores	100 (100, 100)	100 (93.75, 100)	100 (100, 100)	100 (85, 100)	0.119
1-year death	1 (7.1)	17 (6.0)	4 (3.1)	15 (13.8)	0.010

Abbreviations: NIHSS, National Institutes of Health Stroke Scale; TOAST, Trial of Org 10172 in Acute Stroke Treatment; LAA, Large-artery atherosclerosis; CE, Cardio-embolism; SVO, Small-vessel occlusion; ACA, Anterior cerebral artery; MCA, Middle cerebral artery; PCA, Posterior cerebral artery.

*Mixed, Cerebral infarction involving more than one arterial territory.

Supplementary Table 3. Clinical characteristics and ischemic stroke prognosis in patients classified by ages.

	Age ≤85 years (n=849)	Age>85 years (n=38)	P value
Admission features			
Age, years	66.00 (58.00, 74.00)	86.00 (85.00, 88.00)	<0.001
Sex, male	581 (68.4)	23 (60.5)	0.398
BMI, kg/m ²	24.46 (22.27, 26.27)	20.00 (18.82, 21.48)	0.001
Smoke, yes	404 (47.6)	13 (35.1)	0.188
Drink, yes	310 (36.6)	11 (28.9)	0.434
Diabetes, yes	360 (42.4)	10 (26.3)	0.072
Atrial fibrillation, yes	96 (11.3)	10 (26.3)	0.011
Hypertension, yes	715 (84.2)	33 (86.8)	0.836
Hyperlipidemia, yes	428 (51.0)	5 (13.2)	<0.001
Lymphocyte, x10 ⁹ /L	1.68 (1.30, 2.09)	1.37 (0.98, 1.89)	0.004
Baseline NIHSS	3.00 (2.00, 6.00)	5.00 (3.00, 8.00)	0.002
TOAST classification			0.431
LAA	363 (42.8)	17 (44.7)	
CE	66 (7.8)	5 (13.2)	
SVO	52 (6.1)	0 (0.0)	
Other determined	3 (0.4)	0 (0.0)	
Undetermined	365 (43.0)	16 (42.1)	
Follow up period			
3-month mRS scores	1 (1, 3)	2.50 (1, 5)	0.047
6-month mRS scores	1 (1, 3)	2.50 (1, 4.75)	0.034
1-year mRS scores	1 (0, 3)	3 (1, 4)	0.078
3-month BI scores	100 (90, 100)	50 (35, 87.50)	0.003
6-month BI scores	100 (100, 100)	75 (45, 100)	0.003
1-year BI scores	100 (95, 100)	97.50 (58.75, 100)	0.025
1-year death	34 (6.6)	3 (17.6)	0.198

Values are median (IQR) or n (%).

Abbreviations: BMI, Body Mass Index; TOAST, Trial of Org 10172 in Acute Stroke Treatment; NIHSS, National Institutes of Health Stroke Scale; LAA, large-artery atherosclerosis; CE, Cardio-embolism; SVO, Small-vessel occlusion; mRS: the modified Rankin Scale score; BI, the Barthel index.

Supplementary Table 4. Sensitivity analysis for patients admitted 1 day, 3 days, and 7 days from the onset.

Group	Poor functional outcomes (mRS score > 2)		
	Within 1 day	Within 3 days	Within 7 days
	n=535	n=630	n=631
	Adjusted OR (P)	Adjusted OR (P)	Adjusted OR (P)
Group 1 - very low stress level SHR<8nmol/L & fT3≥4.4mmol/L	References	References	References
Group 2 - low stress level SHR≥8nmol/L & fT3≥4.4mmol/L	3.393 (0.087)	1.789 (0.186)	2.224 (0.042)
Group 3 - high stress level SHR<8nmol/L & fT3<4.4mmol/L	1.193 (0.838)	0.814 (0.702)	1.416 (0.427)
Group 4 – very high stress level SHR≥8nmol/L & fT3<4.4mmol/L	4.033 (0.086)	2.981 (<0.026)	4.231 (0.001)

Abbreviations: mRS: the modified Rankin Scale score; SHR, stress-induced hyperglycemia ratio; fT3, free triiodothyronine.

OR was adjusted by age, atrial fibrillation, hypertension, hyperlipidemia, lymphocyte, and baseline NIHSS.

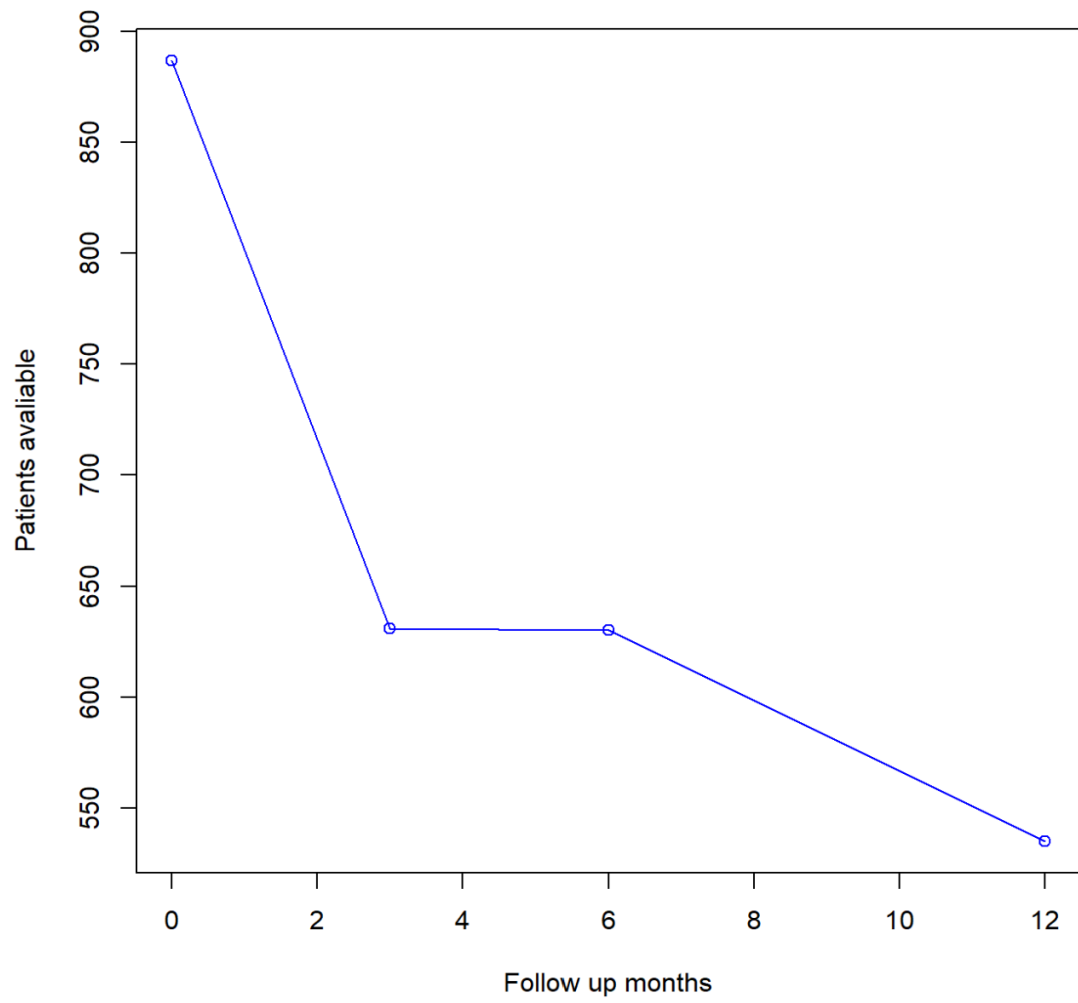
Supplementary Table 5. Associations of acute endocrine and metabolic alterations with ischemic stroke prognosis at various discharge time points, with additional adjustment for arterial territories.

Group	Functional outcomes (mRS score > 2)			Death
	3-month	6-month	12-month	12-month
	n=631	n=630	n=535	n=535
	Adjusted OR (P value)	Adjusted OR (P value)	Adjusted OR (P value)	Adjusted OR (P value)
Group 1 - very low stress level SHR<8nmol/L & fT3≥4.4mmol/L	References	References	References	References
Group 2 - low stress level SHR≥8nmol/L & fT3≥4.4mmol/L	1.571 (0.197)	2.002 (0.062)	2.345 (0.031)	1.328 (0.693)
Group 3 - high stress level SHR<8nmol/L & fT3<4.4mmol/L	1.812 (0.114)	1.737 (0.169)	1.535 (0.327)	0.162 (0.121)
Group 4 – very high stress level SHR≥8nmol/L & fT3<4.4mmol/L	3.663 (0.001)	4.393 (<0.001)	4.621 (<0.001)	1.809 (0.384)

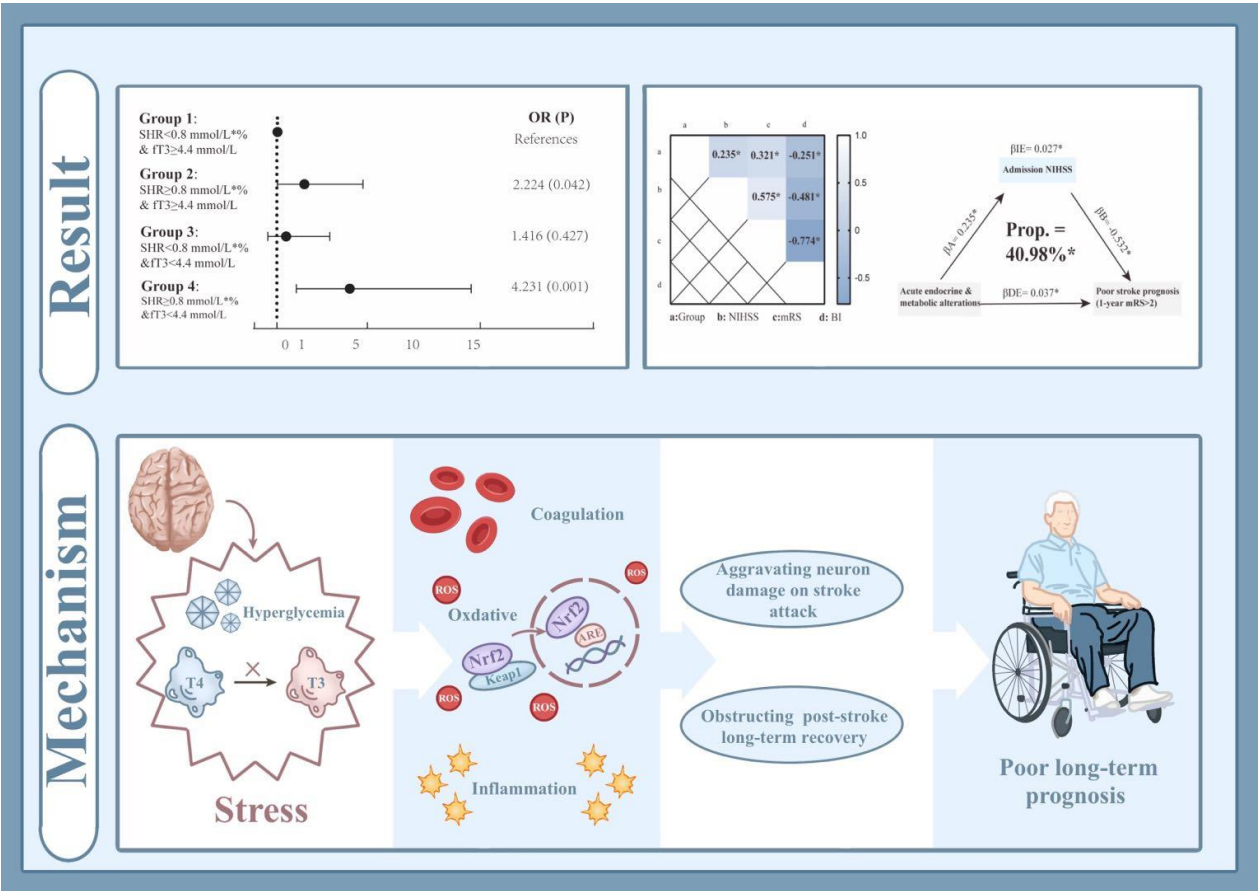
Abbreviations: mRS: the modified Rankin Scale score; SHR, stress-induced hyperglycemia ratio; fT3, free triiodothyronine.

OR was adjusted by age, atrial fibrillation, hypertension, hyperlipidemia, lymphocyte, and baseline NIHSS.

Supplementary Figure 1. Patients lost during the follow up period.



Supplementary Figure 2. Graphic abstract: Larger acute endocrine and metabolic variations were independently associated with a poor one-year stroke prognosis.



Abbreviations: CNS, central nervous system; SHR, stress-induced hyperglycemia ratio; fT3, free triiodothyronine; NIHSS, National Institutes of Health Stroke Scale; mRS: the modified Rankin Scale score.