
Supplementary Table 1. Numbers of Patients Classified as Moderate to Severe Malnutrition according to Different Indexes.

Index	Moderate to Severe	Absent or mild
CONUT, n (%)	42 (5.7%)	690 (94.3%)
GNRI, n (%)	157 (21.4%)	575 (78.6%)
PNI, n (%)	34 (4.6%)	698 (95.4%)
All, n (%)	21 (2.9%)	715 (97.1%)

Supplementary Table 2. Univariable Analysis of the Risk Factors for END.

Characteristics	Univariate Cox regression	
	OR (95% CI)	P value
Age, years	1.037 (1.008-1.068)	0.014
Male, n (%)	0.823 (0.595-1.142)	0.242
Height, cm	0.991 (0.970-1.011)	0.366
Weight, kg	0.974 (0.959-0.989)	0.001
Body mass index, kg/m ²	0.920 (0.875-0.967)	0.001
Vascular risk factors, n (%)		
Hypertension	1.587 (1.121-2.268)	0.010
Diabetes mellitus	2.226 (1.592-3.113)	<0.001
Hyperlipidemia	1.210 (0.819-1.774)	0.332
Atrial fibrillation	1.074 (0.647-1.746)	0.778
Smoking	0.962 (0.687-1.339)	0.818
Drinking	0.968 (0.683-1.363)	0.853
Coronary heart disease	1.294 (0.790-2.090)	0.297
SBP, mmHg	1.015 (1.006-1.023)	0.001
DBP, mmHg	1.007 (0.993-1.020)	0.330
NIHSS, score	1.003 (0.968-1.004)	0.849
Pneumonia	1.367 (0.855-2.162)	0.185
Infarct site, n (%)		
Lobe	Reference	
Basal ganglia	1.462 (0.960-2.239)	0.079
Tentorium cerebelli	0.925 (0.527-1.600)	0.782
Others	0.980 (0.644-1.496)	0.924
TOAST, n (%)		
LAA	Reference	
CE	1.239 (0.729-2.079)	0.422
SAA	1.112 (0.781-1.582)	0.554
SOE	1.394 (0.667-2.843)	0.365
SUE	0.230 (0.086-0.511)	0.001
Laboratory data		
Total cholesterol, mmol/L	1.064 (0.926-1.223)	0.382
Triglyceride, mmol/L	0.771 (0.630-0.931)	0.009
Low-density lipoprotein, mmol/L	1.172 (0.977-1.407)	0.087
High-density lipoprotein, mmol/L	1.168 (0.742-1.833)	0.501
Fasting plasma glucose, mmol/L	1.162 (1.084-1.248)	<0.001
Homocysteine, μ mol/L	1.015 (0.994-1.035)	0.154
White blood cell, 10 ⁹ /L	1.027 (0.986-1.069)	0.196
C-reactive protein, mg/L	1.065 (1.043-1.089)	<0.001

Albumin, g/L	0.926 (0.893-0.960)	<0.001
Lymphocyte count, 10 ⁹ /L	0.796 (0.619-1.017)	0.070
Uric acid, μmol/L	1.001 (0.999-1.002)	0.153
Malnutrition, n (%)		
CONUT		
Absent	Reference	
Mild	1.033 (0.749-1.425)	0.843
Moderate	2.789 (1.368-5.785)	0.005
Severe	6.606 (1.494-45.605)	0.022
GNRI		
Absent	Reference	
Mild	0.707 (0.357-1.312)	0.292
Moderate	2.380 (1.631-3.476)	0
Severe	5.505 (1.764-20.569)	0.005
PNI		
Absent	Reference	
Moderate	1.132 (0.420-2.803)	0.794
Severe	7.708 (2.38-34.328)	0.002

Abbreviations: CE, cardio-embolism; CI, confidence interval; CONUT, controlling nutritional status score; DBP, diastolic blood pressure; GNRI, geriatric nutritional risk index; LAA, large-artery atherosclerosis; NIHSS, National Institute of Health Stroke Scale; OR, odds ratio; PNI, prognostic nutritional index; SAA, small-vessel occlusion; SOE, stroke of other determined etiology; SUE, stroke of undetermined etiology; SBP, systolic blood pressure.

Supplementary Table 3. Final Models of the Back-ward Selection for 3 Malnutrition Indexes.

Variables	Coefficients	Standard Error	P value
Intercept	-0.688	0.760	0.365
Diabetes mellitus, n (%)	1.203	0.197	<0.001
Hypertension, n (%)	0.406	0.212	0.055
C-reactive protein, mg/L	0.087	0.013	<0.001
TOAST, n (%)			
LAA	Reference		
CE	0.385	0.300	0.200
SAA	0.363	0.200	0.070
SOE	0.606	0.400	0.130
SUE	-1.601	0.490	0.001
Homocysteine, $\mu\text{mol/L}$	0.050	0.012	<0.001
Triglyceride, mmol/L	-0.360	0.116	0.002
Body mass index, kg/m^2	-0.082	0.028	0.003
CONUT, per one point increment	0.191	0.052	<0.001
Intercept	-0.586	0.755	0.438
Diabetes mellitus, n (%)	1.253	0.199	<0.001
Hypertension, n (%)	0.418	0.214	0.050
C-reactive protein, mg/L	0.089	0.013	<0.001
TOAST, n (%)			
LAA	Reference		
CE	0.405	0.303	0.181
SAA	0.380	0.202	0.059
SOE	0.676	0.401	0.092
SUE	-1.619	0.504	0.001
Homocysteine, $\mu\text{mol/L}$	0.053	0.013	<0.001
Triglyceride, mmol/L	-0.361	0.116	0.002
Body mass index, kg/m^2	-0.081	0.028	0.004
CONUT, n (%)			
Absent	Reference		
Mild	0.117	0.183	0.523
Moderate	1.473	0.414	<0.001
Severe	2.786	0.869	0.001
Intercept	2.711	0.957	0.005
Diabetes mellitus, n (%)	1.181	0.197	<0.001
Hypertension, n (%)	0.395	0.213	0.064
C-reactive protein, mg/L	0.086	0.013	<0.001
TOAST, n (%)			
LAA	Reference		

CE	0.342	0.302	0.257
SAA	0.325	0.200	0.104
SOE	0.535	0.398	0.179
SUE	-1.646	0.491	0.001
Homocysteine, $\mu\text{mol/L}$	0.051	0.012	<0.001
Triglyceride, mmol/L	-0.347	0.115	0.002
Body mass index, kg/m^2	-0.076	0.028	0.006
PNI, per one point increment	-0.066	0.015	<0.001
Intercept	-0.379	0.745	0.611
Diabetes mellitus, n (%)	1.246	0.199	<0.001
Hypertension, n (%)	0.414	0.214	0.053
C-reactive protein, mg/L	0.087	0.013	<0.001
TOAST, n (%)			
LAA	Reference		
CE	0.357	0.303	0.239
SAA	0.353	0.201	0.079
SOE	0.678	0.397	0.088
SUE	-1.817	0.535	0.001
Homocysteine, $\mu\text{mol/L}$	0.054	0.012	<0.001
Triglyceride, mmol/L	-0.363	0.116	0.002
Body mass index, kg/m^2	-0.086	0.028	0.002
PNI, n (%)			
Absent	Reference		
Moderate	0.421	0.529	0.426
Severe	3.021	0.716	<0.001
Intercept	4.848	1.289	<0.001
Diabetes mellitus, n (%)	1.189	0.198	<0.001
Hypertension, n (%)	0.436	0.213	0.041
C-reactive protein, mg/L	0.087	0.013	<0.001
TOAST, n (%)			
LAA			
CE	0.342	0.303	0.259
SAA	0.300	0.201	0.134
SOE	0.582	0.400	0.146
SUE	-1.614	0.489	0.001
Homocysteine, $\mu\text{mol/L}$	0.051	0.012	<0.001
Triglyceride, mmol/L	-0.363	0.116	0.002
Body mass index, kg/m^2	-0.053	0.029	0.064
GNRI, per one point increment	-0.059	0.013	<0.001
Intercept	-2.519	0.393	<0.001

Diabetes mellitus, n (%)	1.259	0.201	<0.001
Hypertension, n (%)	0.378	0.216	0.080
C-reactive protein, mg/L	0.087	0.013	<0.001
TOAST, n (%)			
LAA	Reference		
CE	0.374	0.305	0.220
SAA	0.298	0.202	0.140
SOE	0.609	0.404	0.132
SUE	-1.745	0.497	<0.001
Homocysteine, $\mu\text{mol/L}$	0.049	0.012	<0.001
Triglyceride, mmol/L	-0.342	0.115	0.003
GNRI, n (%)			
Absent	Reference		
Mild	-0.277	0.365	0.449
Moderate	1.008	0.214	<0.001
Severe	2.603		<0.001

Supplementary Table 4. Reclassification Statistics (95% CI) for END after Adding 3 Malnutrition Indexes.

Variables	NRI (continuous)		NRI (categorical)		IDI	
	Estimate (95 % CI)	<i>P</i> value	Estimate (95 % CI)	<i>P</i> value	Estimate (95 % CI)	<i>P</i> value
Model 1						
+CONUT	0.104 (-0.049-0.257)	0.183	0.024 (-0.037-0.086)	0.434	0.010 (0.002-0.018)	0.018
+GNRI	0.252 (0.099-0.404)	0.001	0.162 (0.084-0.240)	<0.001	0.025 (0.013-0.038)	<0.001
+PNI	0.183 (0.029- 0.336)	0.020	0.115 (0.041-0.185)	0.001	0.019 (0.008-0.030]	<0.001
Model 2						
+CONUT	0.235 (0.087-0.392)	0.002	0.076 (0.003-0.122)	0.001	0.014 (0.003-0.024)	0.011
+GNRI	0.293 (0.141-0.445)	<0.001	0.078 (0.023-0.132)	0.005	0.027 (0.014-0.445)	<0.001
+PNI	0.219 (0.066-0.372)	0.005	0.086 (0.033-0.139)	0.002	0.023 (0.011-0.035)	0.005

Abbreviations: CI, confidence interval; CONUT, controlling nutritional status score; GNRI, geriatric nutritional risk index; IDI, integrated discrimination improvement; NIHSS, National Institute of Health Stroke Scale; NRI, net reclassification improvement; OR, odds ratio; PNI, prognostic nutritional index.

Model 1, adjusted for age, sex, atrial fibrillation, hypertension, diabetes mellitus, hyperlipidemia, coronary heart disease, smoking and drinking.

Model 2, adjusted for variables finally included in the model after back-ward selection.