

**Supplementary Table 1.** Multiple comparisons of baseline characteristics, results of endovascular recanalization therapy between the groups with different etiology to identify the source of the differences in three group comparison using Kruskal-Wallis H test.

	CRS (n=19)	LAA (n=105)	<i>P</i>	CRS (n=19)	CE (n=205)	<i>P</i>	LAA (n=105)	CE (n=205)	<i>P</i>
Age, years, median [IQR]	69 [58-75]	69 [64-76]	0.670	69 [58-75]	73 [65-79]	0.064	69 [64-76]	73 [65-79]	0.002
Male, n (%)	9 (47)	76 (72)	0.031	9 (47)	96 (47)	0.964	76 (72)	96 (47)	<0.001
Initial NIHSS, median [IQR]	16 [6-20]	12 [7-17]	0.481	16 [6-20]	15 [10-20]	0.400	12 [7-17]	15 [10-20]	<0.001
<b>Risk factors, n (%)</b>									
Hypertension	9 (47)	81 (77)	0.007	9 (47)	123 (60)	0.284	81 (77)	123 (60)	0.003
Atrial fibrillation	0	2 (1.9)	1.000	0	182 (89)	<0.001	2 (1.9)	182 (89)	<0.001
Current smoking	5 (26)	35 (33)	0.606	5 (26)	25 (12)	0.148	35 (33)	25 (12)	<0.001
<b>Time from LNT to hospital arrival, median [IQR]</b>									
	211 [59-420]	286 [90-654]	0.305	211 [59-420]	111 [55-339]	0.360	286 [90-654]	111 [55-339]	<0.001
Use of IV fibrinolytics, n (%)	3 (17)	40 (38)	0.109	3 (17)	114 (56)	0.002	40 (38)	114 (56)	0.004
<b>ERT strategies, n (%)</b>									
IA fibrinolysis	4 (21)	57 (54)	0.011	4 (21)	58 (28)	0.601	57 (54)	58 (28)	<0.001
Rescue techniques	1 (5.3)	24 (23)	0.118	1 (5.3)	23 (11)	0.701	24 (23)	23 (11)	0.007

<b>except fibrinolysis</b>									
<b>TICI 2b or 3, n (%)</b>	<b>12 (63)</b>	<b>88 (84)</b>	<b>0.036</b>	<b>12 (63)</b>	<b>173 (84)</b>	<b>0.020</b>	<b>88 (84)</b>	<b>173 (84)</b>	<b>0.894</b>
<b>Death at discharge, n (%)</b>	<b>3 (16)</b>	<b>2 (1.9)</b>	<b>0.026</b>	<b>3 (16)</b>	<b>14 (6.8)</b>	<b>0.164</b>	<b>2 (1.9)</b>	<b>14 (6.8)</b>	<b>0.066</b>
<b>mRS 0-2 at 3 months, n (%)</b>	<b>3 (16)</b>	<b>54 (54)</b>	<b>0.016</b>	<b>3 (16)</b>	<b>81 (44)</b>	<b>0.046</b>	<b>54 (54)</b>	<b>81 (44)</b>	<b>0.117</b>
<b>Death at 3 months, n (%)</b>	<b>12 (63)</b>	<b>4 (4.0)</b>	<b>&lt;0.001</b>	<b>12 (63)</b>	<b>23 (13)</b>	<b>&lt;0.001</b>	<b>4 (4.0)</b>	<b>23 (13)</b>	<b>0.019</b>

A Mann-Whitney U test for continuous variables and a  $\chi^2$  test or a Fisher's exact test for categorical variables were used. The baseline characteristics that showed a significant differences in the Kruskal-Wallis  $H$  test were highlighted by using bold.

**Supplementary Table 2.** Detailed occlusion sites in the anterior circulation of the enrolled participants grouped by stroke etiologies.

	CRS (n=19)	LAA (n=88)	CE (n=184)
ICA†, n (%)			
T type	3 (16)	6 (6.8)	45 (25)
L type	1 (5.3)	7 (7.9)	11 (6.0)
I type	0	13 (15)	7 (3.8)
MCA‡, n (%)			
M1	8 (42)	43 (49)	80 (43)
M2	7 (37)	17 (19)	38 (21)
Missing, n (%)	0	2 (2.3)	3 (1.6)

Abbreviations: ICA, internal carotid artery; MCA, middle cerebral artery

†The ICA occlusion were categorized as an I, L or T type lesion, based on functional nature of collateral flow patterns on angiography. If the ipsilateral anterior cerebral artery territory was filled by collateral flow from contralateral ICA, it was defined as L type occlusion; and if the ipsilateral ACA flow was also compromised, it was defined as a T type occlusion. The ipsilateral ACA and MCA flow were filled by collateral flow was defined as a L type occlusion.

‡The MCA occlusion were categorized as a M1 or M2 according to the involved arterial segment.

**Supplementary Table 3.** Univariate and multivariate logistic regression analyses of independent predictors for good functional outcome at discharge and complete recanalization after endovascular recanalization therapy

	Dichotomized Outcome Analysis				Complete recanalization of mTICI 2b or 3			
	Crude OR [95% CI]	<i>p</i>	Adjusted OR [95% CI]	<i>p</i>	Crude OR [95% CI]	<i>p</i>	Adjusted OR [95% CI]	<i>p</i>
Age, year	0.948 [0.927-0.969]	0.000	0.979 [0.951-1.009]	0.172	0.979 [0.953-1.001]	0.124	0.981 [0.953-1.010]	0.205
Male gender	2.043 [1.289-3.238]	0.002	0.982 [0.508-1.898]	0.957	1.805 [1.009-3.227]	0.046	1.333 [0.704-2.524]	0.377
Medical history								
Atrial fibrillation	0.653 [0.427-1.024]	0.063			1.291 [0.725-2.298]	0.386		
Hypertension	0.578 [0.364-0.919]	0.020	0.695 [0.361-1.341]	0.277	0.619 [0.326-1.175]	0.143		
Diabetes mellitus	0.733 [0.443-1.212]	0.226			1.420 [0.725-2.781]	0.306		
Hyperlipidemia	1.295 [0.746-2.247]	0.358			1.583 [0.709-3.536]	0.262		
Coronary artery disease	0.547 [0.271-1.104]	0.092			1.751 [0.659-4.656]	0.261		
Previous stroke	0.574 [0.316-1.044]	0.069			0.598 [0.307-1.165]	0.131		
Current smoking	4.163 [2.337-7.418]	0.000	3.832 [1.655-8.875]	0.002	3.741 [1.301-10.755]	0.014	3.492 [1.130-10.795]	0.030
Stroke informations								
Stroke subtypes								
Cardioembolism	Reference		Reference		Reference		Reference	
Large artery atherosclerosis	1.556 [0.961-2.519]	0.072	1.125 [0.553-2.289]	0.745	0.957 [0.504-1.819]	0.894	0.685 [0.344-1.361]	0.280
Cancer related stroke	1.101 [0.415-2.921]	0.847	0.839 [0.189-3.734]	0.819	0.317 [0.116-0.867]	0.000	0.238 [0.082-0.692]	0.008
Baseline NIHSS, per 1 point increase	0.828 [0.791-0.867]	0.000	0.809 [0.765-0.857]	0.000	0.985 [0.946-1.026]	0.465		
Clear onset	1.289 [0.789-2.108]	0.311			1.340 [0.731-2.456]	0.343		
Time from stroke onset or LNT to hospital arrival, per 1 hour increase	0.999 [0.998-0.9999]	0.024	0.999 [0.998-0.9999]	0.042	0.9997 [0.9992-1.0001]	0.243		

Time from groin puncture to recanalization, per 1 hour increase	0.988 [0.987-0.995]	0.001	0.985 [0.975-0.995]	0.004
IV tPA, N (%)	1.467 [0.937-2.296]	0.094	1.763 [0.969-3.207]	0.063

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Abbreviations: OR, Odds ratio; CI, confidence interval; IV, intravenous; NIHSS, National Institutes of Health

Stroke Scale; TICI, treatment in cerebral infarction; LNT, last normal time