

## Supplemental Material

Table 1 . Distribution of hospitals in our study

Hospital region	Province or Municipality	Number of hospitals (N=676)	Hospital region	Province or Municipality	Number of hospitals (N=401)	Hospital region	Province or Municipality	Number of hospitals (N=394)
Eastern China	Beijing	16	Central China	Jilin	32	Western China	Inner Mongolia	23
	Tianjin	13		Heilongjiang	41		Guangxi	49
	Hebei	143		Shanxi	44		Chongqing	16
	Liaoning	53		Anhui	29		Sichuan	125
	Shanghai	16		Jiangxi	25		Guizhou	23
	Jiangsu	93		Henan	157		Yunnan	52
	Zhejiang	86		Hubei	39		Tibet	1
	Fujian	52		Hunan	34		Shaanxi	41
	Shandong	81					Gansu	33
	Guangdong	113					Qinghai	9
Hainan	10			Ningxia	5			
						Xinjiang	17	

Table 1. Baseline characteristics of young and old ischemic stroke patients with IV tPA treatment

Baseline characteristics	Total (N=48141 [100%])	Young adults (< 50 years) (N=5044 [10.5%])	Old adults (≥50 years) (N=43097 [89.5%])	ASD*
<b>Patient characteristics</b>				
Age, years	65.2±12.1	43.4±5.6	67.8±9.8	305.7
Male, n (%)	31456 (65.3)	3961 (78.5)	27495 (63.8)	32.9
<b>Insurance status, n (%)</b>				
UEBMI	15948 (33.1)	1609 (31.9)	14339 (33.3)	3.0
URBMI	9813 (20.4)	913 (18.1)	8900 (20.7)	6.6
NRCMS	16442 (34.2)	1495 (29.6)	14947 (34.7)	10.9
Self-pa	4083 (8.5)	813 (16.1)	3270 (7.6)	26.5
Other	1855 (3.9)	214 (4.2)	1641 (3.8)	2.0
<b>Arrive mode, n (%)</b>				
Ambulance	14364 (29.8)	1352 (26.8)	13012 (30.2)	7.5
Private car	21213 (44.1)	2240 (44.4)	18973 (44.0)	0.8
Taxi	2539 (5.3)	357 (7.1)	2182 (5.1)	8.4
Bicycle or tricycle	118 (0.2)	7 (0.1)	111 (0.3)	4.5
Helicopter	14 (0.0)	1 (0.0)	13 (0.0)	
Mobile stroke unit	31 (0.1)	4 (0.1)	27 (0.1)	0.0
Other	9862 (20.5)	1083 (21.5)	8779 (20.4)	2.7
<b>Medical history, n (%)</b>				
Previous stroke/TIA	12339 (25.6)	830 (16.5)	11509 (26.7)	25.0
CAD/prior MI	4737 (9.8)	240 (4.8)	4497 (10.4)	21.3
Diabetes	8477 (17.6)	516 (10.2)	7961 (18.5)	23.8
Peripheral vascular disease	628 (1.3)	31 (0.6)	597 (1.4)	8.0
Hypertension	28815 (59.9)	2283 (45.3)	26532 (61.6)	33.1
Smoking†	18835 (39.1)	2567 (50.9)	16268 (37.7)	26.8
Atrial fibrillation/flutter	5692 (11.8)	138 (2.7)	5554 (12.9)	38.7
Dyslipidemia	3195 (6.6)	351 (7.0)	2844 (6.6)	1.6
Carotid stenosis	454 (0.9)	22 (0.4)	432 (1.0)	7.2
<b>Medication history, n (%)</b>				
Anticoagulants	1779 (3.7)	150 (3.0)	1629 (3.8)	4.4
Hypoglycemic drugs	6404 (13.3)	330 (6.5)	6074 (14.1)	25.2
Antihypertensive drugs	20099 (41.8)	1302 (25.8)	18797 (43.6)	38.1
Antiplatelet drugs	7882 (16.4)	467 (9.3)	7415 (17.2)	23.5
Lipid lowering drugs	5614 (11.7)	382 (7.6)	5232 (12.1)	15.1
NIHSS score in hospital‡	7.9±6.5	6.4±5.3	8.0±6.6	26.7
<b>Biochemical Indicators</b>				
Glycated hemoglobin§,%		5.6 (5.1–6.0)	5.8 (5.3–6.5)	
BMI	23.6±4.2	24.9±5.5	23.4±4.0	31.2
Homocysteine*, μmol/L	13.3 (10.0–18.5)	12.7 (9.6–18.9)	13.3 (10.1–18.5)	
Systolic blood pressure**, mmHg	152.5±23.8	148.3±24.6	153.0±23.7	19.5
Diastolic blood pressure††, mmHg	87.6±14.5	92.1±16.1	87.1±14.2	32.9

(Continued)

Table 1. Baseline characteristics of young and old ischemic stroke patients with IV tPA treatment

Baseline characteristics	Total (N=48141 [100%])	Young adults ( $< 50$ years) (N=5044 [10.5%])	Old adults ( $\geq 50$ years) (N=43097 [89.5%])	ASD*
Hospital characteristics, n (%)				
Hospital level				
Secondary hospital	16479 (34.2)	1735 (34.4)	14744 (34.2)	0.4
Tertiary hospital	31662 (65.8)	3309 (65.6)	28353 (65.8)	0.4
Hospital region				
Eastern China	26410 (54.9)	2792 (55.4)	23618 (54.8)	1.2
Central China	15024 (31.2)	1630 (32.3)	13394 (31.1)	2.6
Western China	6707 (13.9)	622 (12.3)	6085 (14.1)	5.3

Abbreviations: IV tPA, intravenous recombinant tissue plasminogen activator; UEBMI, urban employee basic medical insurance; URBMI, urban resident basic medical insurance; NRCMS, new rural cooperative medical scheme; TIA, transient ischemic attack; CAD, coronary artery disease; MI, myocardial infarction; SD, standard deviation; IQR, interquartile range; NIHSS, National Institutes of Health Stroke Scale; ASD, absolute standardized difference.

\*: An absolute standardized difference%  $>10\%$  indicates meaningful imbalance between 2 groups.

†: Smoking: having smoking experience or behaviors.

‡: Information was missing for N = 2503 patients (5.2%).

§: Information was missing for N = 4749 patients (9.9%), using the median for imputation.

||: Information was missing for N = 743 patients (1.5%), using the median for imputation.

#: Information was missing for N = 2682 patients (5.6%).

\*\*: Information was missing for N = 28 patients (0.1%), using the median for imputation.

††: Information was missing for N = 28 patients (0.1%), using the median for imputation.

Table III. In-hospital outcomes in young (< 35 years ) and old ( $\geq 35$  years) ischemic stroke patients treated with IV tPA

Outcome	Total (N=48141 [100%])	young adults (< 35 years ) (N=456 [0.9%])	old adults ( $\geq 35$ years) (N=47685[99.1%])(REF)	Model	OR (95% CI)	P value
sICH	414 (0.9)	4 (0.9)	410 (0.9)	1	1.02 (0.38-2.74)	0.9678
				2	1.45 (0.54-3.94)	0.4612
				3	1.52 (0.56-4.13)	0.4136
In-hospital mortality	579 (1.2)	1 (0.2)	578 (1.2)	1	0.18 (0.03-1.28)	0.0861
				2	0.28 (0.04-2.01)	0.2066
				3	0.27 (0.04-1.97)	0.1953
Independent ambulation at discharge	26175 (54.4)	279 (61.2)	25896 (54.3)	1	1.33 (1.10-1.60)	0.0034
				2	1.09 (0.90-1.32)	0.384
				3	1.15 (0.92-1.42)	0.2173

Abbreviations: CI, confidence interval; IV tPA, intravenous recombinant tissue plasminogen activator ; OR, odds ratio.

Model 1: Logistic regression model without adjustment.

Model 2: Adjusted for gender, insurance, BMI, previous stroke/TIA, previous CAD/prior MI, diabetes, hypertension, have smoking experience or behavior, atrial fibrillation/flutter, glycated hemoglobin, diastolic blood pressure, systolic blood pressure, hypoglycemic drugs, antihypertensive drugs, antiplatelet drugs, and lipid-lowering drugs.

Model 3: Adjusted for in-hospital NIHSS score, gender, insurance, BMI, previous stroke/TIA, previous CAD/prior MI, diabetes, hypertension, have smoking experience or behavior, atrial fibrillation/flutter, glycated hemoglobin, diastolic blood pressure, blood pressure, hypoglycemic drugs, antihypertensive drugs, antiplatelet drugs, and lipid-lowering drugs. Patients (N= 2503) with missing values on NIHSS score were not included in this analysis.

Table IV. In-hospital outcomes in young (&lt; 45 years ) and old (≥45 years) ischemic stroke patients treated with IV tPA

Outcome	Total (N=48141 [100%])	young adults (< 45 years ) (N=2244 [4.7%])	old adults (≥45 years) (N=45897[95.3%])(REF)	Model	OR (95% CI)	P value
sICH	414 (0.9)	8 (0.4)	406 (0.9)	1	0.40 (0.20-0.81)	0.0106
				2	0.54 (0.26-1.10)	0.0877
				3	0.44 (0.19-0.99)	0.048
In-hospital mortality	579 (1.2)	8 (0.4)	571 (1.2)	1	0.28 (0.14-0.57)	0.0004
				2	0.43 (0.21-0.87)	0.0197
				3	0.52 (0.26-1.07)	0.077
Independent ambulation at discharge	26175 (54.4)	1356 (60.4)	24819 (54.1)	1	1.30 (1.19-1.41)	<0.0001
				2	1.08 (0.98-1.18)	0.1082
				3	0.97 (0.88-1.08)	0.6096

Abbreviations: CI, confidence interval; IV tPA, intravenous recombinant tissue plasminogen activator ; OR, odds ratio.

Model 1: Logistic regression model without adjustment.

Model 2: Adjusted for gender, insurance, BMI, previous stroke/TIA, previous CAD/prior MI, diabetes, hypertension, have smoking experience or behavior, atrial fibrillation/flutter, glycated hemoglobin, diastolic blood pressure, systolic blood pressure, hypoglycemic drugs, antihypertensive drugs, antiplatelet drugs, and lipid-lowering drugs.

Model 3: Adjusted for in-hospital NIHSS score, gender, insurance, BMI, previous stroke/TIA, previous CAD/prior MI, diabetes, hypertension, have smoking experience or behavior, atrial fibrillation/flutter, glycated hemoglobin, diastolic blood pressure, blood pressure, hypoglycemic drugs, antihypertensive drugs, antiplatelet drugs, and lipid-lowering drugs. Patients (N= 2503) with missing values on NIHSS score were not included in this analysis.