**Supplemental Appendix**

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**Supplemental tables and figures**

Supplemental Table 1: Characteristics among follow-up methods

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **No follow-up**  **(N = 100)** | **Outpatient clinic**  **(N = 140)** | **Telephone**  **(N = 88)** | **Letter**  **(N = 75)** | ***P* value** |
| Age, median (IQR), y | 77 (69–82) | 71 (64–79) | 74 (67–81) | 78 (71–85) | < 0.01 |
| Male sex, No. (%) | 53 (53%) | 90 (64%) | 50 (57%) | 45 (60%) | 0.35 |
| Successful reperfusion, No. (%) | 55 (55%) | 106 (76%) | 31 (35%) | 55 (73%) | < 0.01 |
| mRS score of 0–2 at 90 days, No. (%) | 27 (27%) | 83 (59%) | 17 (19%) | 17 (23%) | < 0.01 |
| Data acquisition at one year, No. (%) | 0 (0%) | 140 (100%) | 81 (92%) | 47 (63%) | < 0.01 |

IQR indicates interquartile rage; and mRS, modified Rankin Scale.

Supplemental Table 2: Multivariate logistic regression models for improvement.

|  |  |  |
| --- | --- | --- |
|  | **Odds ratio**  **(95% Confidence Interval)** | ***P* value** |
| Age (/y) | 0.97 (0.95–1.00) | 0.05 |
| Atrial fibrillation | 0.80 (0.39–1.65) | 0.54 |
| Hypertension | 0.78 (0.38–1.61) | 0.50 |
| Diabetes mellitus | 1.31 (0.60–2.90) | 0.84 |
| NIHSS (/1 point) | 0.72 (0.45–1.18) | 0.20 |
| IV-rtPA therapy | 1.17 (0.54–2.52) | 0.69 |
| Successful reperfusion | 2.65 (1.23–5.73) | < 0.05 |
| PH2\* or SAH | 1.29 (0.47–3.53) | 0.62 |
| Recurrence | 0.27 (0.03–0.2.15) | 0.21 |
| mRS score at 90 days (/1 point) | 1.35 (1.05–1.73) | < 0.05 |

IV-rtPA indicates intravenous recombinant tissue plasminogen activator; mRS; modified Rankin Scale; NIHSS, National Institutes of Health Stroke Scale; PH2, parenchymal hematoma grade 2; and SAH, subarachnoid hemorrhage.

\*A grade of PH2 indicates hematoma with blood clots comprising more than one third of the infarcted area.

Supplemental Table 3: Multivariate logistic regression models for deterioration.

|  |  |  |
| --- | --- | --- |
|  | **Odds ratio**  **(95% Confidence Interval)** | ***P* value** |
| Age (/y) | 1.05 (1.01–1.08) | < 0.01 |
| Atrial fibrillation | 0.97 (0.53–1.78) | 0.93 |
| Hypertension | 1.02 (0.55–1.91) | 0.94 |
| Diabetes mellitus | 1.43 (0.75–2.74) | 0.28 |
| NIHSS (/1 point) | 1.79 (1.18–2.71) | < 0.01 |
| IV-rtPA therapy | 0.77 (0.40–1.49) | 0.44 |
| Successful reperfusion | 0.33 (0.18–0.62) | < 0.01 |
| PH2\* or SAH | 1.22 (0.51–2.90) | 0.65 |
| Recurrence | 4.88 (1.61–14.8) | < 0.01 |
| mRS score at 90 days (/1 point) | 0.85 (0.68–1.05) | 0.13 |

IV-rtPA indicates intravenous recombinant tissue plasminogen activator; mRS; modified Rankin Scale; NIHSS, National Institutes of Health Stroke Scale; PH2, parenchymal hematoma grade 2; and SAH, subarachnoid hemorrhage.

\*A grade of PH2 indicates hematoma with blood clots comprising more than one third of the infarcted area.

Supplemental Table 4: Multivariate logistic regression models for better mRS score at 1 year.

|  |  |  |
| --- | --- | --- |
|  | **Common odds ratio**  **(95% Confidence Interval)** | ***P* value** |
| Age (/y) | 0.98 (0.96–0.99) | < 0.05 |
| Atrial fibrillation | 0.92 (0.57–1.49) | 0.73 |
| Hypertension | 0.85 (0.52–1.38) | 0.51 |
| Diabetes mellitus | 1.00 (0.58–1.73) | 0.99 |
| NIHSS (/1 point) | 0.97 (0.94–0.99) | < 0.05 |
| IV-rtPA therapy | 1.00 (0.60–1.67) | 0.99 |
| Successful reperfusion | 2.08 (1.29–3.37) | < 0.01 |
| PH2\* or SAH | 1.04 (0.49–2.19) | 0.92 |
| Recurrence | 0.13 (0.04–0.40) | < 0.01 |
| mRS score at 90 days (/1 point) | 0.19 (0.14–0.24) | < 0.01 |

IV-rtPA indicates intravenous recombinant tissue plasminogen activator; mRS; modified Rankin Scale; NIHSS, National Institutes of Health Stroke Scale; PH2, parenchymal hematoma grade 2; and SAH, subarachnoid hemorrhage.

\*A grade of PH2 indicates hematoma with blood clots comprising more than one third of the infarcted area.

Supplemental Table 5: Clinical characteristics and 90-day mRS score of patients, with or without 1-year mRS data.

|  |  |  |  |
| --- | --- | --- | --- |
|  | **With 1**–**year mRS data**  **(N = 268)** | **Without 1**–**year mRS data**  **(N = 135)** | ***P* value** |
| Age, median (IQR), y | 73 (66–81) | 77 (68–83) | < 0.01 |
| Male sex, No. (%) | 164 (61%) | 74 (55%) | 0.22 |
| Vascular risk factors |  |  |  |
| Atrial fibrillation, No. (%) | 144 (54%) | 90 (67%) | < 0.05 |
| Hypertension, No. (%) | 176 (66%) | 82 (61%) | 0.33 |
| Diabetes mellitus, No. (%) | 65 (24%) | 41 (30%) | 0.19 |
| NIHSS score, median (IQR) | 17 (13–23) | 19 (15–26) | < 0.05 |
| IV-rtPA therapy, No. (%) | 71 (26%) | 38 (28%) | 0.72 |
| Successful reperfusion, No (%) | 167 (62%) | 80 (59%) | 0.55 |
| PH2\* or SAH, No. (%) | 30 (11%) | 19 (14%) | 0.40 |
| mRS score of 0–2 at 90 days, No. (%) | 114 (43%) | 30 (22%) | < 0.01 |
| mRS score of 0 at 90 days, No. (%) | 29 (11%) | 6 (4%) |  |
| mRS score of 1 at 90 days, No. (%) | 38 (14%) | 10 (7%) |  |
| mRS score of 2 at 90 days, No. (%) | 47 (18%) | 14 (10%) |  |
| mRS score of 3 at 90 days, No. (%) | 36 (13%) | 13 (10%) |  |
| mRS score of 4 at 90 days, No. (%) | 64 (24%) | 53 (39%) |  |
| mRS score of 5 at 90 days, No. (%) | 54 (20%) | 39 (29%) |  |
| Telephone interview, No. (%) | 81 (30%) | 7 (5%) | <0.01 |
| Letter survey, No. (%) | 47 (18%) | 28 (21%) | 0.44 |

IQR indicates interquartile rage; IV-rtPA, intravenous recombinant tissue plasminogen activator; mRS, modified Rankin Scale; NIHSS, National Institutes of Health Stroke Scale; PH2, parenchymal hematoma grade 2; and SAH, subarachnoid hemorrhage.

\*A grade of PH2 indicates hematoma with blood clots comprising more than one third of the infarcted area.

Supplemental Table 6: Multiple imputation methods for improvement.

|  |  |  |
| --- | --- | --- |
|  | **Odds ratio**  **(95% Confidence Interval)** | ***P* value** |
| Age (/y) | 0.98 (0.95–1.01) | 0.13 |
| Atrial fibrillation | 0.74 (0.34–1.59) | 0.43 |
| Hypertension | 0.87 (0.46–1.67) | 0.68 |
| Diabetes mellitus | 1.03 (0.35–2.99) | 0.96 |
| NIHSS (/1 point) | 0.97 (0.92–1.02) | 0.18 |
| IV-rtPA therapy | 1.28 (0.53–3.11) | 0.58 |
| Successful reperfusion | 2.91 (1.39–6.08) | < 0.01 |
| PH2\* or SAH | 1.27 (0.42–3.85) | 0.67 |
| mRS score at 90 days (/1 point) | 1.33 (1.03–1.71) | < 0.05 |

IV-rtPA indicates intravenous recombinant tissue plasminogen activator; mRS; modified Rankin Scale; NIHSS, National Institutes of Health Stroke Scale; PH2, parenchymal hematoma grade 2; and SAH, subarachnoid hemorrhage.

\*A grade of PH2 indicates hematoma with blood clots comprising more than one third of the infarcted area.

Supplemental Table 7: Multiple imputation methods for deterioration.

|  |  |  |
| --- | --- | --- |
|  | **Odds ratio**  **(95% Confidence Interval)** | ***P* value** |
| Age (/y) | 1.04 (1.00–1.08) | 0.06 |
| Atrial fibrillation | 0.97 (0.56–1.70) | 0.92 |
| Hypertension | 1.28 (0.65–2.51) | 0.47 |
| Diabetes mellitus | 1.44 (0.85–2.42) | 0.17 |
| NIHSS (/1 point) | 1.05 (1.01–1.09) | < 0.05 |
| IV-rtPA therapy | 0.83 (0.49–1.42) | 0.50 |
| Successful reperfusion | 0.41 (0.24–0.69) | < 0.01 |
| PH2\* or SAH | 1.23 (0.48–3.11) | 0.67 |
| mRS score at 90 days (/1 point) | 0.87 (0.72–1.06) | 0.17 |

IV-rtPA indicates intravenous recombinant tissue plasminogen activator; mRS; modified Rankin Scale; NIHSS, National Institutes of Health Stroke Scale; PH2, parenchymal hematoma grade 2; and SAH, subarachnoid hemorrhage.

\*A grade of PH2 indicates hematoma with blood clots comprising more than one third of the infarcted area.

Supplemental Figure 1



Numbers of direct angioplasty, Merci Retrieval System, Penumbra System, and stent retriever in each year, and rates of successful reperfusion in each year.