Supplementary 1. Baseline characteristics and demographics of the study subjects by functional outcome (mRS ≤1, mRS adjusted)

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| --- | --- | --- | --- | --- | --- |
|  | Total | mRS1 at 3 months | P value | mRS adjusted at 3 months | P value |
|  | (N = 303) | mRS ≤ 1 (N = 96) | mRS > 2 (N = 207) |  | Good (N = 154) | Poor (N = 149) |  |
| Age (years) | 72.0 (64.5–78.0) | 67.5 (55.0–73.0) | 74.0 (67.0–80.0) | <0.01 | 68.0 (56.0–74.0) | 75.0 (69.0–82.0) | <0.01 |
| Male | 167 (55.1) | 62 (64.6) | 105 (50.7) | 0.03 | 96 (62.3) | 71 (47.7) | 0.01 |
| BMI (mg/kg2) | 23.1 (21.3–25.4) | 23.8 (21.8–26.3) | 22.6 (21.0–24.9) | <0.01 | 23.3 (21.7–25.9) | 22.5 (20.4–24.8) | <0.01 |
| initial NIHSS | 15 (9–20) | 9.7 ± 6.3 | 16.7 ± 6.7 | <0.01 | 13.0 (7.0–18.0) | 16.0 (12.0–21.0) | <0.01 |
| TOAST\_CE | 172 (56.8) | 51 (53.1) | 121 (58.5) | 0.46 | 84 (54.6) | 88 (59.1) | 0.5 |
|  |  |  |  |  |  |  |  |
| HT | 222 (73.3) | 63 (65.6) | 159 (76.8) | 0.06 | 102 (66.2) | 120 (80.5) | <0.01 |
| DM | 84 (27.7) | 19 (19.8) | 65 (31.4) | 0.05 | 35 (22.7) | 49 (32.9) | 0.07 |
| Dyslipidemia | 90 (29.7) | 28 (29.2) | 62 (30.0) | 1 | 44 (28.6) | 46 (30.9) | 0.76 |
| Smoking  | 118 (38.9) | 51 (53.1) | 67 (32.4) | <0.01 | 76 (49.4) | 42 (28.2) | <0.01 |
| Af | 151 (38.9) | 44 (45.8) | 107 (51.7) | 0.41 | 71 (46.1) | 80 (53.7) | 0.23 |
|  |  |  |  |  |  |  |  |
| Hb | 13.5 (11.9–14.9) | 14.0 (12.8–15.1) | 13.2 (11.5–14.8) | <0.01 | 13.9 (12.7–15.1) | 12.9 (11.1–14.7) | <0.01 |
| Hct | 40.4 (35.3–44.0) | 41.4 (37.9–44.3) | 39.4 (34.4–43.7) | <0.01 | 41.2 (37.1–44.2) | 38.3 (33.7–43.3) | <0.01 |
| FBS | 102.0 (86.0–127.0) | 93.0 (81.0–108.0) | 108 (89.5–140.5) | <0.01 | 95.0 (82.0–115.5) | 108 (91.0–146.0) | <0.01 |
| HbA1c | 5.9 (5.5–6.4) | 5.8 (5.5–6.3) | 5.9 (5.5–6.5) | 0.34 | 5.8 (5.5–6.4) | 5.9 (5.4–6.5) | 0.82 |
| T. chol. | 161.0 (132.0–185.0) | 169 (141.0–189.5) | 155.0 (130.0–183.0) | 0.01 | 169.0 (142.0–193.0) | 152.0 (127.5–179.5) | <0.01 |
| HDL | 42.0 (36.0–50.0) | 42.0 (36.5–49.0) | 43.0 (35.0–50.5) | 0.84 | 42.0 (35.0–49.0) | 43.0 (36.0–51.0) | 0.43 |
| TG | 88.0 (63.0–132.0) | 92.5 (68.0–139.5) | 85.0 (61.0–122.5) | 0.03 | 94.0 (68.0–135.5) | 79.0 (60.0–120.5) | 0.01 |
|  |  |  |  |  |  |  |  |
| END | 76 (26.8) | 20 (22.5) | 56 (28.7) | 0.34 | 27 (18.6) | 49 (35.3) | <0.01 |
| sICH  | 17 (6.1) | 3 (3.5) | 14 (7.3) | 0.33 | 4 (2.8) | 13 (9.6) | 0.04 |
| Stroke recur or progression | 55 (19.8) | 16 (18.4) | 39 (20.4) | 0.82 | 22 (15.5) | 33 (24.3) | 0.09 |

mRS, modified Rankin Scale; BMI, body mass index; NIHSS, National Institute of Health Stroke Scale; TOAST, Trial of ORG10172 in Acute Stroke Treatment; CE, cardioembolism; Af, atrial fibrillation; Hb, hemoglobin; Hct, hematocrit; FBS, fasting blood glucose; HbA1c, hemoglobin A1c; T. chol., total cholesterol; HDL, high density lipoprotein; TG, triglyceride; END, early neurological deterioration; sICH, symptomatic intracerebral hemorrhage; IVT, intravenous thrombolysis; IAT, intra-arterial thrombectomy; TICI, thrombolysis in cerebral infarction

Good outcome is defined as a 3-month mRS score of 0 to 1 for pretreatment NIHSS scores of ≤7, mRS score of 0–2 for pretreatment NIHSS scores of 8–14, and mRS score of 0–3 for pretreatment NIHSS scores of >14.

Supplementary 2. Mean and median values for BPV parameters according to functional outcome (mRS ≤1, mRS adjusted)

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| --- | --- | --- | --- | --- | --- |
|  | Total | mRS ≤1 at 3 months | P value | mRS adjusted at 3 months | P value |
|  | (N = 303) | mRS ≤1 (N = 96) | mRS >2 (N = 207) |  | Good (N = 154) | Poor (N = 149) |  |
| 24-h SBPmean | 126.65 ± 13.46 | 124.58 ± 13.23 | 127.61 ± 13.48 | 0.07 | 124.34 ± 12.46 | 129.04 ± 14.06 | <0.01 |
| 24-h DBPmean | 71.27 (65.20–77.36) | 72.57 (65.47–78.70) | 70.42 (64.92–77.25) | 0.25 | 71.73 (65.21–76.98) | 70.49 (65.19–77.64) | 0.88 |
| 24-h SBPSD | 13.39 (10.68–17.06) | 12.45 (10.04–15.39) | 13.79 (11.09–17.80) | 0.02 | 12.26 (9.60–15.53) | 14.70 (11.79–19.27) | <0.01 |
| 24-h DBPSD | 9.64 (7.83–12.41) | 8.84 (7.17–10.85) | 9.98 (8.11–13.18) | <0.01 | 8.83 (7.07–10.75) | 10.85 (8.66–13.45) | <0.01 |
| 24-h SBPCV | 0.11 (0.08–0.14) | 0.10 (0.08–0.12) | 0.11 (0.09–0.14) | 0.05 | 0.10 (0.08–0.12) | 0.11 (0.09–0.14) | <0.01 |
| 24-h DBPCV | 0.14 (0.11–0.17) | 0.12 (0.10–0.15) | 0.14 (0.11–0.19) | <0.01 | 0.13 (0.10–0.16) | 0.15 (0.12–0.20) | <0.01 |
| 24-h SBPVIM | 0.11 (0.08–0.13) | 0.10 (0.08–0.12) | 0.11 (0.09–0.14) | 0.03 | 0.10 (0.08–0.12) | 0.12 (0.09–0.15) | <0.01 |
| 24-h DBPVIM | 0.14 (0.11–0.18) | 0.13 (0.10–0.15) | 0.14 (0.12–0.19) | <0.01 | 0.13 (0.10–0.15) | 0.16 (0.12–0.19) | <0.01 |
| 48-h SBPmean | 125.25 ± 14.26 | 121.87 ± 13.84 | 126.83 ± 14.21 | <0.01 | 122.27 ± 12.79 | 128.38 ± 15.08 | <0.01 |
| 48-h DBPmean | 69.78 (63.72–76.48) | 70.18 (64.72–76.67) | 69.38 (63.18–75.76) | 0.38 | 69.86 (64.73–75.79) | 69.09 (63.07–76.53) | 0.39 |
| 48-h SBPSD | 10.97 (9.16–14.01) | 10.19 (8.04–12.41) | 11.42 (9.67–14.80) | <0.01 | 10.37 (8.65–12.31) | 12.22 (10.01–15.77) | <0.01 |
| 48-h DBPSD | 9.09 (7.10–11.81) | 8.83 (6.65–10.62) | 9.30 (7.29–12.62) | <0.01 | 8.92 (6.81–10.81) | 9.63 (7.47–12.88) | 0.01 |
| 48-h SBPCV | 0.09 (0.07–0.11) | 0.08 (0.07–0.10) | 0.09 (0.07–0.11) | <0.01 | 0.08 (0.07–0.10) | 0.10 (0.07–0.12) | <0.01 |
| 48-h DBPCV | 0.13 (0.10–0.17) | 0.12 (0.09–0.15) | 0.13 (0.11–0.18) | <0.01 | 0.12 (0.10–0.16) | 0.14 (0.11–0.19) | <0.01 |
| 48-h SBPVIM | 0.09 (0.07–0.11) | 0.08 (0.07–0.10) | 0.09 (0.07–0.12) | <0.01 | 0.08 (0.07–0.10) | 0.10 (0.07–0.12) | <0.01 |
| 48-h DBPVIM | 0.13 (0.10–0.17) | 0.13 (0.10–0.15) | 0.13 (0.11–0.18) | <0.01 | 0.13 (0.10–0.15) | 0.13 (0.11–0.18) | 0.02 |
| 24-h nighttime SBP rise, n (%) | 97 (32.0) | 28 (29.2) | 69 (33.3) | 0.56 | 45 (29.2) | 52 (34.9) | 0.35 |
| 48-h nighttime SBP rise, n (%) | 125 (41.5) | 31 (32.3) | 94 (45.9) | 0.04 | 55 (35.7) | 70 (47.7) | 0.05 |

SBP, systolic blood pressure; DBP, diastolic blood pressure; SD, standard deviation; CV, coefficient of variation; VIM, variation independent of the mean

Supplementary 3. Mean and median values for BPV parameters according to the occurrence of END

|  |  |  |
| --- | --- | --- |
|  | END (N = 284) | P value |
|  | (−) (N = 208) | (+) (N = 76) |  |
| 24-h SBPmean | 125.55 ± 12.38 | 130.12 ± 15.40 | 0.02 |
| 24-h DBPmean | 70.35 (64.37–76.90) | 73.04 (67.19–79.65) | 0.04 |
| 24-h SBPSD | 12.77 (10.33–16.17) | 14.45 (11.25–21.28) | <0.01 |
| 24-h DBPSD | 9.64 (7.72–12.17) | 10.31 (8.00–13.27) | 0.14 |
| 24-h SBPCV | 0.10 (0.08–0.13) | 0.11 (0.09–0.16) | 0.02 |
| 24-h DBPCV | 0.14 (0.11–0.17) | 0.14 (0.11–0.19) | 0.6 |
| 24-h SBPVIM | 0.10 (0.08–0.13) | 0.11 (0.09–0.16) | 0.01 |
| 24-h DBPVIM | 0.14 (0.11–0.17) | 0.15 (0.11–0.19) | 0.15 |
| 48-h SBPmean | 124.83 ± 13.27 | 126.72 ± 15.92 | 0.36 |
| 48-h DBPmean | 69.8 (63.2–75.4) | 69.1 (63.4–76.7) | 0.61 |
| 48-h SBPSD | 10.81 (9.08–13.50) | 12.02 (9.66–16.07) | 0.03 |
| 48-h DBPSD | 9.18 (6.97–12.31) | 9.06 (7.43–11.05) | 0.92 |
| 48-h SBPCV | 0.09 (0.07–0.10) | 0.10 (0.07–0.13) | 0.07 |
| 48-h DBPCV | 0.13 (0.10–0.18) | 0.13 (0.10–0.17) | 0.58 |
| 48-h SBPVIM | 0.09 (0.07–0.11) | 0.10 (0.07–0.13) | 0.05 |
| 48-h DBPVIM | 0.13 (0.10–0.18) | 0.13 (0.11–0.16) | 0.95 |
| 24-h nighttime SBP rise, n (%) | 67 (32.2) | 26 (34.2) | 0.86 |
| 48-h nighttime SBP rise, n (%) | 90 (43.5) | 29 (38.2) | 0.5 |

SBP, systolic blood pressure; DBP, diastolic blood pressure; SD, standard deviation; CV, coefficient of variation; VIM, variation independent of the mean

Supplementary 4. Comparison of mean and median values for BPV parameters according to the occurrence of END and degree of recanalization

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| --- | --- | --- |
|  | TICI (≥2b) | TICI (<2b) |
|  | END(−), N = 178 | END(+), N = 53 | Total | p value | END(−), N = 30 | END(+), N = 23 | Total | p value |
| 24-h SBPmean | 124.59 ± 12.01 | 126.92 ± 15.09 | 124.97 ± 12.76 | 0.31 | 131.21 ± 13.25 | 137.47 ± 13.77 | 133.33 ± 14.16 | 0.1 |
| 24-h DBPmean | 70.21 (64.54–76.43) | 72.65 (67.49–77.63) | 70.73 (64.64–76.74) | 0.15 | 71.91 ± 8.94 | 75.71 ± 11.05 | 73.97 ± 9.75 | 0.17 |
| 24-h SBPSD | 12.66 (10.30–15.99) | 13.34 (10.59–20.28) | 13.01 (10.48–16.45) | 0.24 | 13.53 (10.73–16.64) | 17.81 (13.94–21.49) | 14.38 (11.87–19.58) | <0.01 |
| 24-h DBPSD | 9.45 (7.69–11.79) | 9.64 (7.64–13.29) | 9.42 (7.59–12.16) | 0.37 | 11.08 ± 3.81 | 11.71 ± 3.76 | 11.15 ± 3.65 | 0.55 |
| 24-h SBPCV | 0.10 (0.08–0.13) | 0.11 (0.08–0.14) | 0.10 (0.08–0.13) | 0.41 | 0.10 (0.08–0.14) | 0.13 (0.11–0.16) | 0.11 (0.09–0.14) | 0.01 |
| 24-h DBPCV | 0.14 (0.11–0.17) | 0.13 (0.10–0.20) | 0.13 (0.11–0.17) | 0.94 | 0.16 ± 0.06 | 0.16 ± 0.05 | 0.15 ± 0.05 | 0.92 |
| 24-h SBPVIM | 0.29 (0.23–0.37) | 0.30 (0.24–0.43) | 0.29 (0.23–0.37) | 0.33 | 0.29 (0.23–0.39) | 0.38 (0.31–0.46) | 0.32 (0.26–0.42) | 0.01 |
| 24-h DBPVIM | 45.34 (36.82–56.69) | 46.45 (36.09–63.95) | 45.24 (36.66–58.21) | 0.39 | 53.03 ± 18.16 | 55.82 ± 17.78 | 53.22 ± 17.35 | 0.58 |
| 48-h SBPmean | 123.0 (115.58–131.66) | 123.35 (114.42–135.05) | 123.0 (115.13–132.23) | 0.89 | 131.03 ± 14.82 | 131.54 ± 18.19 | 130.90 ± 16.25 | 0.91 |
| 48-h DBPmean | 69.38 (63.07–75.37) | 69.06 (64.21–76.54) | 69.34 (63.55–75.48) | 0.64 | 70.71 ± 8.53 | 71.60 ± 11.44 | 71.86 ± 9.67 | 0.75 |
| 48-h SBPSD | 10.73 (9.07–13.12) | 10.62 (9.36–15.42) | 10.68 (8.93–13.42) | 0.45 | 12.72 ± 4.24 | 16.14 ± 6.31 | 14.26 ± 5.51 | 0.03 |
| 48-h DBPSD | 9.00 (6.83–12.06) | 8.91 (7.51–10.88) | 8.93 (6.92–11.17) | 0.97 | 9.90 (7.73–12.62) | 9.94 (7.43–12.73) | 9.96 (7.69–13.06) | 0.76 |
| 48-h SBPCV | 0.09 (0.07–0.10) | 0.09 (0.07–0.12) | 0.09 (0.07–0.11) | 0.64 | 0.10 (0.07–0.12) | 0.11 (0.09–0.15) | 0.10 (0.08–0.13) | 0.06 |
| 48-h DBPCV | 0.13 (0.10–0.17) | 0.12 (0.10–0.16) | 0.13 (0.10–0.17) | 0.56 | 0.14 (0.11–0.18) | 0.13 (0.11–0.18) | 0.14 (0.11–0.18) | 0.7 |
| 48-h SBPVIM | 0.44 (0.36–0.51) | 0.43 (0.35–0.60) | 0.43 (0.36–0.52) | 0.6 | 0.48 (0.35–0.61) | 0.56 (0.45–0.76) | 0.51 (0.39–0.65) | 0.045 |
| 48-h DBPVIM | 5.81 (4.42–7.82) | 5.67 (4.73–7.02) | 5.70 (4.48–7.18) | 0.85 | 6.45 (4.93–8.13) | 6.31 (4.85–8.49) | 6.38 (4.89–8.46) | 0.76 |

SBP, systolic blood pressure; DBP, diastolic blood pressure; SD, standard deviation; CV, coefficient of variation; VIM, variation independent of the mean

Supplementary 5. Relationships between BPV parameters (DBP) and recanalization degree.

DBP, diastolic blood pressure; TICI, thrombolysis in cerebral infarction; SD, standard deviation; CV, coefficient of variation; VIM, variation independent of the mean

