

On-line Table 1: Baseline and follow-up characteristics^a

| Characteristic | This Study (n = 216) | MR CLEAN (n = 500) |
|---|----------------------|--------------------|
| Age (mean) (SD) (yr) | 62.9 (12.8) | 64.9 (13.8) |
| Male sex (No.) (%) | 136 (63) | 292 (58.4) |
| Diabetes mellitus (No.) (%) | 17 (7.9) | 68 (13.6) |
| Atrial fibrillation (No.) (%) | 54 (24) | 135 (27.0) |
| Previous stroke (No.) (%) | 0 | 54 (10.8) |
| Prestroke mRS >0 (No.) (%) | 0 | 96 (19.2) |
| Intracranial arterial occlusion (No.) (%) | | |
| Intracranial internal carotid artery | 4 (1.9) | 4 (0.8) |
| Internal carotid artery with involvement of the M1 middle cerebral artery segment | 66 (30.6) | 134 (26.9) |
| M1 middle cerebral artery segment | 128 (59.3) | 319 (63.9) |
| M2 middle cerebral artery segment | 15 (6.9) | 39 (7.8) |
| A1 or A2 anterior cerebral artery segment | 2 (0.9) | 3 (0.6) |
| Treatment (No.) (%) | | |
| Intravenous treatment only | 105 (48.6) | 257 (51.4) |
| Intra-arterial treatment only | 7 (5.6) | 30 (6.0) |
| Intravenous and intra-arterial treatment | 96 (44.4) | 187 (37.4) |
| Conservative treatment | 8 (3.7) | 26 (5.2) |
| Time from stroke onset to treatment (mean) (SD) (min) | 102.1 (61.1) | 106.9 (64.6) |
| Recanalization ^b (No.) (%) | 113 (52.3) | 289 (67.1) |
| mTICI score (No.) (%) | | |
| TICI 0–2a | 30 (13.9) | 81 (41.1) |
| TICI 2b–3 | 53 (24.5) | 116 (58.9) |
| mAOL score (No.) (%) | | |
| 0 | 28 (13.0) | 92 (23.4) |
| 1 | 13 (6.0) | 26 (6.6) |
| 2 | 36 (16.7) | 65 (16.5) |
| 3 | 107 (49.5) | 211 (53.6) |
| NIHSS score 1 week after stroke (No.) (%) | | |
| 0–4 | 65 (30.1) | 114 (26.8) |
| 5–15 | 81 (37.5) | 154 (36.2) |
| 16–20 | 41 (19.0) | 97 (22.8) |
| 21–42 | 25 (11.6) | 61 (14.3) |
| mRS score at 90 days (No.) (%) | | |
| 0 | 5 (2.3) | 7 (1.4) |
| 1 | 23 (10.6) | 36 (7.2) |
| 2 | 52 (24.1) | 84 (16.8) |
| 3 | 50 (23.1) | 87 (17.4) |
| 4 | 61 (28.1) | 133 (26.6) |
| 5 | 25 (11.6) | 45 (9.0) |
| 6 | 0 | 108 (21.6) |
| Favorable outcome at 90 days (mRS < 3) (No.) (%) | 80 (37.0) | 127 (25.4) |

Note:—mTICI indicates modified Thrombolysis in Cerebral Infarction; mAOL, modified arterial occlusive lesion.

^a mRS score: 0, no symptoms at all; 1, no significant disability despite symptoms; 2, slight disability; 3, moderate disability; 4, moderately severe disability; 5, severe disability; 6, dead. mTICI score: 0, no perfusion; 1, penetration with minimal perfusion; 2, partial perfusion; 2a, only partial filling (<2/3) of the entire vascular territory is visualized; 2b, complete filling of all the expected vascular territory is visualized, but the filling is slower than normal; grade 3, complete perfusion. mAOL score: 0, no recanalization of the primary occlusion; 1, incomplete or partial recanalization of the primary occlusion with no distal flow; 2, incomplete or partial recanalization of the primary occlusion with distal flow; 3, complete recanalization of the primary occlusion with distal flow. NIHSS score: 0, no stroke symptoms; 1–4, minor stroke; 5–15, moderate stroke; 16–20, moderate-to-severe stroke; 21–42, severe stroke.

^b Recanalization defined as mAOL score \geq 2 or mTICI 2b–3.

On-line Table 2: Results from VLSM calculated for each hemisphere^a

| Region | Mean | Median | SD | Max | Min |
|---|------|--------|------|------|------|
| Left superior longitudinal fasciculus | 4.85 | 4.86 | 0.50 | 6.21 | 3.06 |
| Left corticospinal tract | 4.45 | 4.42 | 1.53 | 8.06 | 2.36 |
| Left uncinate fasciculus | 4.44 | 4.19 | 1.12 | 7.04 | 2.93 |
| Left central opercular cortex | 4.37 | 4.48 | 0.97 | 6.81 | 2.43 |
| Right corticospinal tract | 4.32 | 4.45 | 0.86 | 6.23 | 2.39 |
| Left inferior fronto-occipital fasciculus | 4.26 | 4.04 | 1.23 | 7.14 | 2.38 |
| Left anterior thalamic radiation | 4.09 | 4.10 | 0.71 | 6.58 | 2.36 |
| Right frontal operculum cortex | 4.08 | 4.06 | 0.39 | 5.06 | 2.66 |
| Left planum temporale | 4.03 | 4.05 | 0.41 | 5.30 | 2.52 |
| Left Heschl gyrus | 4.00 | 3.97 | 0.50 | 5.41 | 2.68 |
| Left caudate | 3.96 | 3.97 | 0.65 | 5.78 | 2.37 |
| Right central opercular cortex | 3.92 | 3.95 | 0.54 | 5.79 | 2.48 |
| Left supramarginal gyrus, anterior division | 3.91 | 3.94 | 0.47 | 5.16 | 2.38 |
| Left postcentral gyrus | 3.87 | 4.05 | 0.68 | 5.54 | 2.38 |
| Left putamen | 3.87 | 3.64 | 0.98 | 6.85 | 2.36 |
| Left cerebral white matter | 3.86 | 3.74 | 0.97 | 8.24 | 2.36 |
| Left planum polare | 3.83 | 3.89 | 0.64 | 5.35 | 2.38 |
| Left parietal operculum cortex | 3.81 | 3.82 | 0.45 | 5.42 | 2.49 |
| Left superior temporal gyrus, anterior division | 3.79 | 3.80 | 0.35 | 4.65 | 2.46 |
| Left insular cortex | 3.79 | 3.71 | 0.82 | 6.43 | 2.36 |
| Left pallidum | 3.77 | 3.77 | 0.62 | 5.54 | 2.37 |
| Left precentral gyrus | 3.74 | 3.84 | 0.67 | 5.42 | 2.38 |
| Left thalamus | 3.72 | 3.62 | 0.76 | 6.03 | 2.37 |
| Left supramarginal gyrus, posterior division | 3.69 | 3.70 | 0.49 | 5.10 | 2.38 |
| Right cerebral white matter | 3.68 | 3.60 | 0.79 | 6.97 | 2.37 |
| Right parietal operculum cortex | 3.67 | 3.64 | 0.57 | 5.16 | 2.39 |
| Left inferior frontal gyrus, pars opercularis | 3.65 | 3.73 | 0.51 | 5.24 | 2.37 |
| Right inferior fronto-occipital fasciculus | 3.63 | 3.64 | 0.78 | 5.59 | 2.39 |
| Right Heschl gyrus | 3.62 | 3.58 | 0.63 | 6.31 | 2.49 |
| Right hippocampus | 3.61 | 3.57 | 0.68 | 5.81 | 2.37 |
| Right inferior longitudinal fasciculus | 3.59 | 3.55 | 0.58 | 5.75 | 2.38 |
| Right thalamus | 3.59 | 3.45 | 0.77 | 6.04 | 2.39 |
| Right pallidum | 3.56 | 3.58 | 0.61 | 5.37 | 2.38 |
| Right temporal fusiform cortex, posterior division | 3.56 | 3.69 | 0.67 | 4.93 | 2.39 |
| Right amygdala | 3.53 | 3.52 | 0.64 | 5.55 | 2.38 |
| Left cerebral cortex | 3.52 | 3.43 | 0.74 | 6.81 | 2.36 |
| Left amygdala | 3.51 | 3.41 | 0.75 | 6.25 | 2.36 |
| Right planum polare | 3.51 | 3.47 | 0.54 | 5.19 | 2.38 |
| Right superior longitudinal fasciculus | 3.48 | 3.45 | 0.55 | 5.27 | 2.39 |
| Right insular cortex | 3.45 | 3.35 | 0.66 | 6.10 | 2.38 |
| Right inferior frontal gyrus, pars opercularis | 3.43 | 3.33 | 0.58 | 5.37 | 2.37 |
| Left angular gyrus | 3.31 | 3.29 | 0.39 | 4.30 | 2.38 |
| Right anterior thalamic radiation | 3.30 | 3.16 | 0.69 | 5.96 | 2.37 |
| Right frontal orbital cortex | 3.29 | 3.25 | 0.52 | 5.09 | 2.37 |
| Right cerebral cortex | 3.27 | 3.19 | 0.61 | 6.31 | 2.37 |
| Right planum temporale | 3.22 | 3.07 | 0.58 | 4.79 | 2.37 |
| Left inferior longitudinal fasciculus | 3.21 | 3.16 | 0.50 | 4.66 | 2.36 |
| Left middle temporal gyrus, anterior division | 3.21 | 3.17 | 0.45 | 4.50 | 2.38 |
| Right inferior frontal gyrus, pars triangularis | 3.18 | 3.21 | 0.44 | 4.67 | 2.39 |
| Right uncinate fasciculus | 3.18 | 3.39 | 0.60 | 3.64 | 2.51 |
| Right precentral gyrus | 3.16 | 3.11 | 0.51 | 5.19 | 2.39 |
| Right superior temporal gyrus, anterior division | 3.09 | 3.04 | 0.37 | 4.33 | 2.37 |
| Right angular gyrus | 3.09 | 3.04 | 0.47 | 4.60 | 2.39 |
| Left hippocampus | 3.06 | 2.99 | 0.47 | 4.86 | 2.36 |
| Right middle frontal gyrus | 3.06 | 2.94 | 0.52 | 4.63 | 2.39 |
| Left frontal pole | 3.05 | 2.98 | 0.45 | 4.30 | 2.38 |
| Right caudate | 3.03 | 2.86 | 0.52 | 4.69 | 2.38 |
| Left lateral occipital cortex, superior division | 3.02 | 2.91 | 0.50 | 4.22 | 2.38 |
| Right temporal pole | 3.01 | 2.89 | 0.47 | 4.65 | 2.37 |
| Left inferior temporal gyrus, posterior division | 2.99 | 2.91 | 0.29 | 3.50 | 2.62 |
| Right lateral occipital cortex, superior division | 2.96 | 2.91 | 0.42 | 4.00 | 2.39 |
| Right frontal pole | 2.95 | 2.86 | 0.43 | 4.55 | 2.39 |
| Right inferior temporal gyrus, temporo-occipital part | 2.95 | 2.96 | 0.24 | 3.29 | 2.59 |
| Right middle temporal gyrus, temporo-occipital part | 2.95 | 2.91 | 0.42 | 4.46 | 2.39 |
| Left frontal orbital cortex | 2.94 | 2.80 | 0.49 | 5.30 | 2.36 |

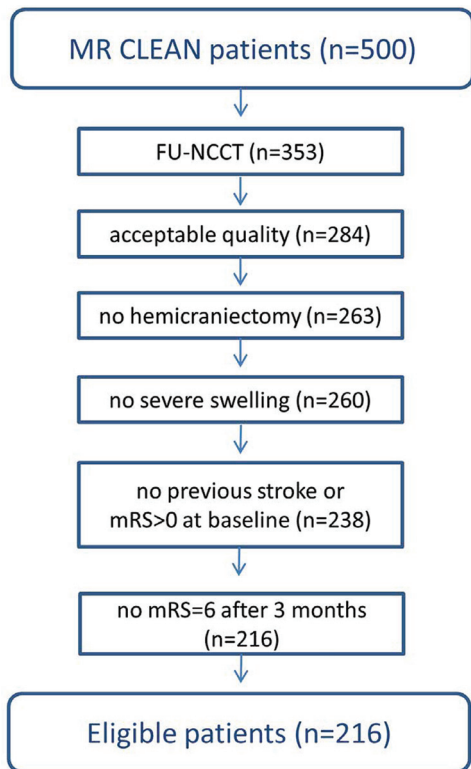
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On-line Table 2: Continued

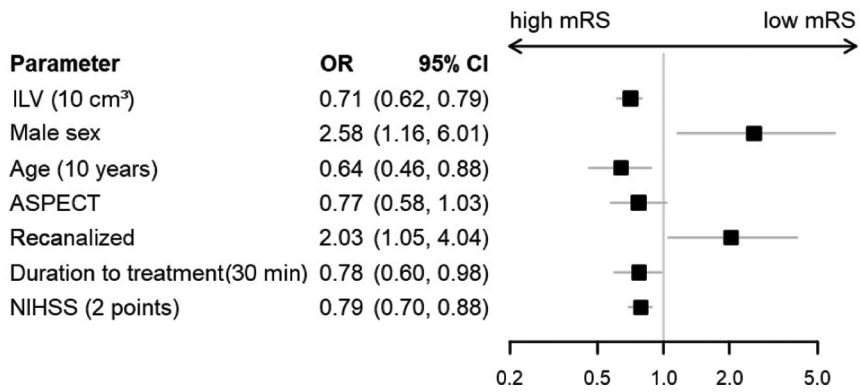
| Region | Mean | Median | SD | Max | Min |
|--|------|--------|------|------|------|
| Right supramarginal gyrus, posterior division | 2.93 | 2.86 | 0.38 | 4.18 | 2.39 |
| Left temporal pole | 2.91 | 2.80 | 0.46 | 5.48 | 2.36 |
| Right inferior temporal gyrus, posterior division | 2.91 | 2.79 | 0.41 | 4.01 | 2.41 |
| Right middle temporal gyrus, posterior division | 2.90 | 2.86 | 0.37 | 4.45 | 2.39 |
| Left inferior frontal gyrus, pars triangularis | 2.89 | 2.83 | 0.38 | 4.49 | 2.36 |
| Right subcallosal cortex | 2.85 | 2.79 | 0.21 | 3.09 | 2.69 |
| Right putamen | 2.85 | 2.79 | 0.37 | 4.49 | 2.37 |
| Left middle temporal gyrus, temporo-occipital part | 2.83 | 2.80 | 0.25 | 3.46 | 2.38 |
| Left middle frontal gyrus | 2.81 | 2.73 | 0.36 | 4.54 | 2.38 |
| Left inferior temporal gyrus, anterior division | 2.79 | 2.65 | 0.35 | 3.50 | 2.38 |
| Left frontal operculum cortex | 2.78 | 2.74 | 0.27 | 3.91 | 2.37 |
| Right middle temporal gyrus, anterior division | 2.78 | 2.77 | 0.26 | 3.73 | 2.39 |
| Right forceps minor | 2.76 | 2.69 | 0.30 | 3.86 | 2.38 |
| Right lateral occipital cortex, inferior division | 2.75 | 2.69 | 0.34 | 4.05 | 2.39 |
| Left middle temporal gyrus, posterior division | 2.74 | 2.68 | 0.30 | 3.89 | 2.36 |
| Right supramarginal gyrus, anterior division | 2.72 | 2.69 | 0.27 | 3.73 | 2.39 |
| Right postcentral gyrus | 2.70 | 2.64 | 0.29 | 4.59 | 2.39 |
| Left superior parietal lobule | 2.68 | 2.62 | 0.12 | 2.92 | 2.50 |
| Right parahippocampal gyrus, anterior division | 2.67 | 2.51 | 0.34 | 3.38 | 2.41 |
| Left lateral occipital cortex, inferior division | 2.63 | 2.62 | 0.15 | 3.06 | 2.38 |
| Left parahippocampal gyrus, anterior division | 2.62 | 2.65 | 0.19 | 2.95 | 2.39 |
| Left accumbens | 2.59 | 2.55 | 0.16 | 2.99 | 2.38 |
| Left subcallosal cortex | 2.59 | 2.62 | 0.14 | 2.91 | 2.39 |
| Right inferior temporal gyrus, anterior division | 2.51 | 2.51 | 0.00 | 2.51 | 2.51 |
| Right superior parietal lobule | 2.41 | 2.41 | 0.00 | 2.41 | 2.41 |
| Right superior frontal gyrus | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Right superior temporal gyrus, posterior division | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Right intracalcarine cortex | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Right frontal medial cortex | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Right juxtapositional lobule cortex | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Right paracingulate gyrus | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Right cingulate gyrus, anterior division | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Right cingulate gyrus, posterior division | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Right precuneus cortex | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Right cuneal cortex | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Right parahippocampal gyrus, posterior division | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Right lingual gyrus | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Right temporal fusiform cortex, anterior division | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Right temporal occipital fusiform cortex | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Right occipital fusiform gyrus | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Right supracalcarine cortex | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Right occipital pole | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Right accumbens | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Left temporal fusiform cortex, posterior division | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Left inferior temporal gyrus, temporo-occipital part | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Left forceps minor | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Left superior frontal gyrus | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Left superior temporal gyrus, posterior division | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Left intracalcarine cortex | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Left frontal medial cortex | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Left juxtapositional lobule cortex | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Left paracingulate gyrus | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Left cingulate gyrus, anterior division | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Left cingulate gyrus, posterior division | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Left precuneus cortex | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Left cuneal cortex | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Left parahippocampal gyrus, posterior division | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Left lingual gyrus | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Left temporal fusiform cortex, anterior division | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Left temporal occipital fusiform cortex | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Left occipital fusiform gyrus | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Left supracalcarine cortex | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Left occipital pole | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

Note:—Min indicates minimum; Max, maximum.

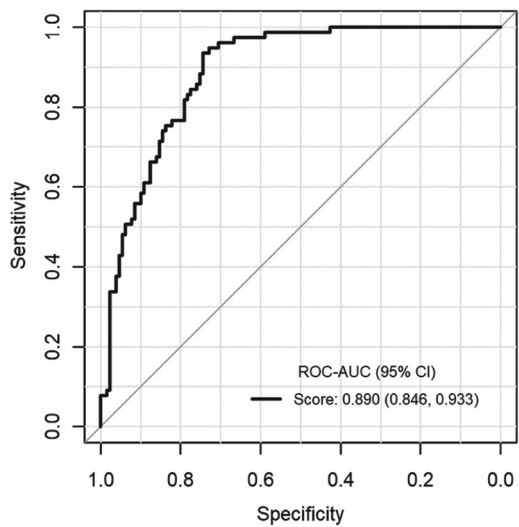
^a Mean, median, minimum, maximum, and SD of *t*-scores calculated for each anatomic ROI provided by the Harvard-Oxford cortical and subcortical structural atlas and Johns Hopkins University International Consortium of Brain Mapping Diffusion Tensor-81 white matter labels.



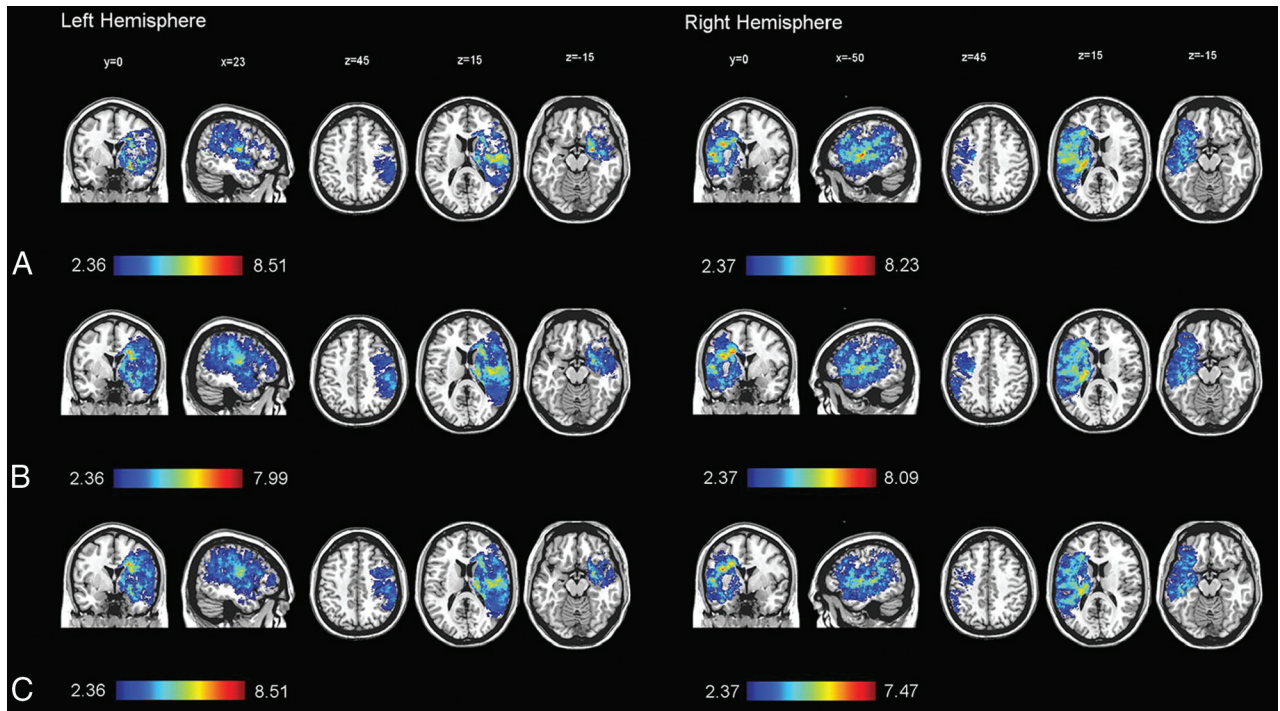
ON-LINE FIG 1. Flow diagram showing the exclusion of patients.



ON-LINE FIG 2. Odds ratios and confidence intervals of the variables in the final model of backward stepwise regression analysis.



ON-LINE FIG 3. Discriminative power of the final regression model.



ON-LINE FIG 4. Voxel-based lesion-symptom mapping of lesion impact on the modified Rankin Scale score calculated separately for each hemisphere (*right side, n = 94; left side, n = 122*) using sex, age, and recanalization status (*A*); sex, age, and time to treatment (*B*); and sex, age, and NIHSS score (*C*) as covariates. The color range indicates *t*-scores thresholded at a 1% false discovery rate. Higher *t*-scores (red) indicate areas strongly associated with functional outcome (mRS).