

Supplementary Online Content

Nguyen TTM, van den Wijngaard IR, Bosch J, et al. Comparison of prehospital scales for predicting large anterior vessel occlusion in the ambulance setting. *JAMA Neurol*. Published online November 30, 2020. doi:10.1001/jamaneurol.2020.4418

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This supplementary material has been provided by the authors to give readers additional information about their work.

eTable 1. Comparing Patients With and Without Application Data

| | Total No. (%) (n = 2449) | Patients with application data, No. % (n = 2007) | Patients without application data, No. % (n = 442) | P value |
|---|-------------------------------------|---|---|----------------|
| Age, mean (SD), y | 70.9 (14.7) | 71.1 (14.9) | 70.4 (14.3) | .26 |
| Male sex | 1247/2449 (50.9) | 1021/2007 (50.0) | 226/442 (51.1) | .92 |
| Hospital admission | | | | |
| NIHSS score ^a , median (IQR) | 4 (2–9) | 4 (2–8) | 4 (2–10) | .31 |
| sLAVO | 198/2449 (8.1) | 158/2007 (7.9) | 40/442 (9.0) | .41 |
| Final diagnosis | | | | |
| Ischemic stroke | 978/2449 (39.9) | 831/2007 (41.4) | 147/442 (33.3) | <.001 |
| Intracerebral hemorrhage | 202/2440 (8.2) | 149/2007 (7.4) | 53/442 (12.0) | |
| Transient ischemic attack | 319/2449 (13.0) | 274/2007 (13.7) | 45/442 (10.2) | |
| Stroke mimic | 950/2449 (38.8) | 753/2007 (37.5) | 197/442 (44.6) | |
| Abbreviations: NIHSS, National Institute of Health Stroke Scale; sLAVO, symptomatic large anterior vessel occlusion. ^a Only provided for stroke patients (i.e. ischemic stroke and intracerebral hemorrhage). | | | | |

eTable 2. Stroke Logistics and In-Hospital Performance Metrics in PSC vs CSC Presented Patients

| | Total, No. (%) (n = 158) | sLAVO presented in PSC, No. (%) (n = 32) | sLAVO presented in CSC, No. (%) (n = 126) | P value |
|--|-------------------------------------|---|--|----------------|
| Stroke logistics | | | | |
| Transferred from PSC to CSC for EVT | 26/158 (17) | 26/32 (81) | NA | NA |
| In-hospital performance metrics | | | | |
| DNT, median (IQR), min | 24 (18–33) | 26 (19–34) | 24 (18–33) | .79 |
| DGT, median (IQR), min | 72 (54–105) | 114 (103–140) | 61 (51–81) | <.001 |
| Abbreviations: sLAVO, symptomatic large anterior vessel occlusion; PSC, primary stroke center; CSC, comprehensive stroke center; NA, not applicable; EVT, endovascular thrombectomy. DNT, door-to-needle time; DGT, <i>first</i> -door-to-groin puncture time. | | | | |

eTable 3. Comparing Accuracies of the Prediction Scales According to Prespecified Cut Points

| Prediction scale | Accuracy ^a | C-STAT ≥2 | PASS ≥2 | G-FAST ≥3 | FAST-ED ≥4 | RACE ≥5 | LAMS ≥4 |
|-------------------|-----------------------|-----------|---------|-----------|------------|---------|---------|
| C-STAT ≥2 | 0.79 (0.77-0.81) | NA | | | | | |
| PASS ≥2 | 0.81 (0.79-0.83) | 0.03 | NA | | | | |
| G-FAST ≥3 | 0.82 (0.81-0.84) | 0.76 | 0.13 | NA | | | |
| FAST-ED ≥4 | 0.83 (0.81-0.85) | 0.06 | 0.49 | 0.19 | NA | | |
| RACE ≥5 | 0.88 (0.86-0.89) | <0.001 | 0.02 | <0.001 | 0.001 | NA | |
| LAMS ≥4 | 0.89 (0.87-0.90) | <0.001 | <0.001 | <0.001 | <0.001 | 0.51 | NA |

Abbreviations: NA, not applicable; C-STAT, Cincinnati stroke triage assessment tool; PASS, Prehospital acute stroke severity; G-FAST, Gaze-face-arm-speech-time; FAST-ED, Face-arm-speech-time-eye deviation-denial/neglect RACE, Rapid arterial occlusion evaluation; LAMS, Los Angeles Motor Scale.
^a Accuracy at cutoff point: ((True positives + true negatives)/total number of patients).

eTable 4. Comparison of Full Range Accuracy of the Prediction Scales

| Prediction scale | AUC (95% CI) | C-STAT | PASS | GACE | RACE | LAMS | G-FAST | FAST-ED | NIHSS |
|------------------|------------------|--------|--------|--------|-------|------|--------|---------|-------|
| C-STAT | 0.70 (0.64-0.76) | NA | | | | | | | |
| PASS | 0.73 (0.68-0.78) | 0.19 | NA | | | | | | |
| GACE | 0.73 (0.69-0.78) | 0.27 | 0.85 | NA | | | | | |
| RACE | 0.75 (0.69-0.82) | 0.05 | 0.08 | 0.04 | NA | | | | |
| LAMS | 0.76 (0.71-0.81) | 0.05 | 0.07 | 0.18 | 0.40 | NA | | | |
| G-FAST | 0.77 (0.72-0.82) | 0.04 | 0.01 | 0.01 | 0.51 | 0.48 | NA | | |
| FAST-ED | 0.80 (0.74-0.85) | 0.01 | 0.001 | 0.02 | 0.53 | 0.10 | 0.46 | NA | |
| NIHSS | 0.82 (0.78-0.85) | <0.001 | <0.001 | <0.001 | 0.001 | 0.01 | 0.001 | 0.20 | NA |

Abbreviations: AUC, area under the curve; NA, not applicable; C-STAT, Cincinnati stroke triage assessment tool; PASS, Prehospital acute stroke severity; GACE, Gace, facial Asymmetry, level of Consciousness, Extinction/inattention; RACE, Rapid arterial occlusion evaluation; LAMS, Los Angeles Motor Scale; G-FAST, Gaze-face-arm-speech-time; FAST-ED, Face-arm-speech-time-eye deviation-denial/neglect; NIHSS, National Institute of Health Stroke Scale.

eFigure. Allocation of Acute Stroke Code Patients

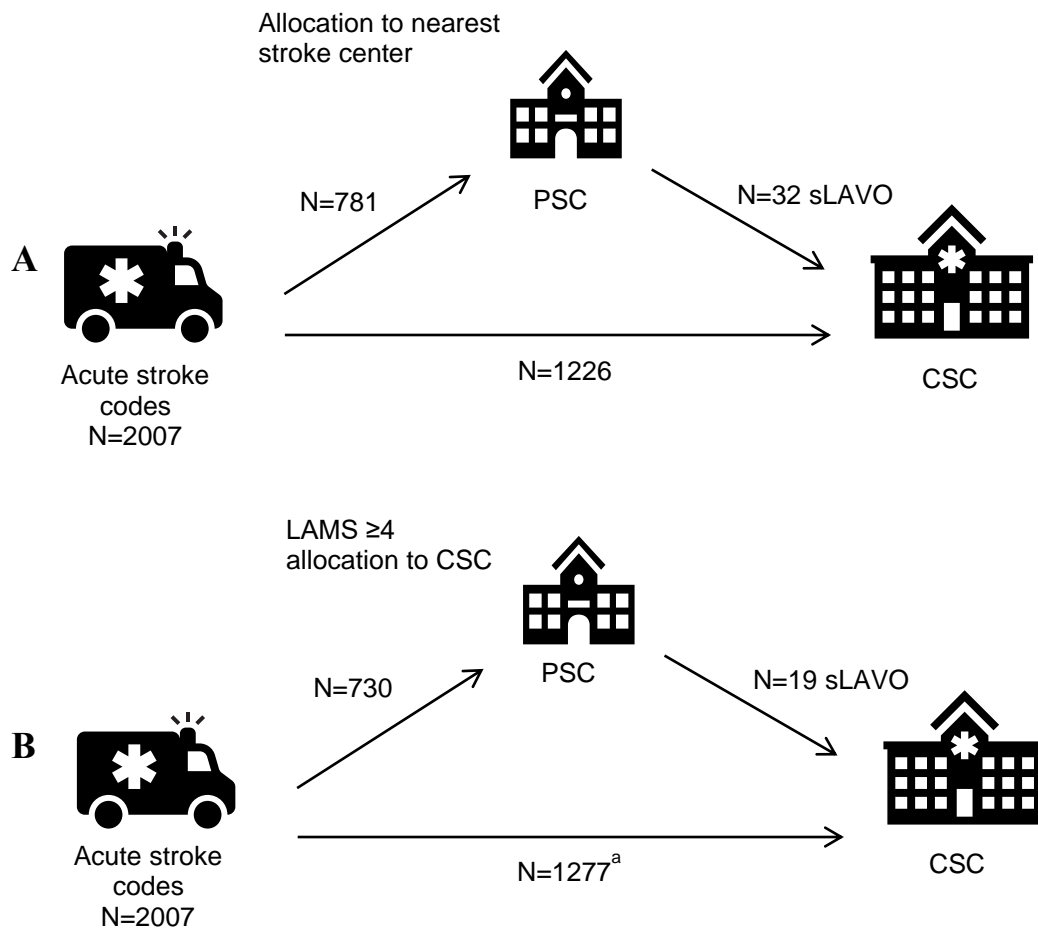


Figure legend

A: Real scenario of patient allocation in our cohort.

B: Hypothetical scenario for patient allocation based on LAMS score in our cohort.

^a13 patients with sLAVO would directly be allocated to a CSC, 17 IVT-treated patients would have unnecessarily by-passed a PSC and 38 patients without sLAVO would have been allocated to a CSC (including 6 patients with clinically severe ICH).