**SUPPLEMENTARY DATA**

**Functional Outcome After Primary Endovascular Therapy Or IV Thrombolysis Alone for Stroke. An Observational, Comparative Effectiveness Study**

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**APPENDIX**

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**SUPPLEMENTARY METHODS**

**Study setting**

Within the study period, acute stroke care in Catalonia was based on a network of 17 treating hospitals, including 7 Comprehensive Stroke Centers (CSCs), 7 Primary Stroke Centers (PSCs) and 3 community hospitals operating on a telestroke system. All three levels have capacity to deliver IVT while CSCs perform all EVTs. CSCs share some professional resources (mobile neurointerventional teams) so that every day, 4 CSCs offer a 24-hour service to cover the whole Catalan territory. Furthermore, each CSC has a 24-hour, on-site neurologist who is responsible for pre-alerting the neurointerventional team. This team includes a vascular neurologist who establishes the need of EVT following a common protocol (supplementary Table). Briefly, all AIS patients with no contraindication for IVT who arrive within the first 4.5 hours receive the standard dose of rtPA (0.9 mg/kg) at their local centers (either community hospitals through telestroke, PSCs or CSCs). In addition, some centers also treated with IVT AIS patients beyond the first 4.5 hours based on radiological demonstration of salvageable brain parenchyma. Patients ineligible for IVT were pre-selected for EVT according to clinical criteria (National Institute of Health Stroke Scale [NIHSS] ≥ 10 or suspicion of large vessel occlusion). Subsequently, at the CSC, EVT indication is based on demonstration of a large vessel occlusion by noninvasive vascular imaging and presence of limited signs of early infarction before transferring the patient to the angiosuite. Multimodal imaging (MRI or CTP) is recommended in patients beyond 4.5 hours from stroke onset. The specific interventional modality (intra-arterial thrombolysis, mechanical thrombectomy, or a combination of both) and application of anesthesia or conscious sedation are up to the interventionalist preference.

The *SONIIA* registry includes baseline clinical and demographic data, clinical and radiological variables at 24-36 hours post-stroke, and the survival and functional status at 3 months. The register was designed as a simple tool to gather information about IVT and EVT based on a reduced core set of clinical and angiographic (EVT cohort only) variables. At baseline, we collect demographic information (age and gender), pre-stroke medical and functional status (mRS score), clinical data such as time of stroke onset and stroke severity measured with the National Institute of Health Stroke Scale (NIHSS) obtained by certified neurologists, and specific details on the reperfusion treatment delivered: date/time of treatment initiation, treatment modality (IVT alone, combined IVT + EVT or primary EVT), EVT modality (mechanical thrombectomy, intra-arterial pharmacological thrombolysis or both), procedure duration (for cases undergoing EVT only), level and degree of arterial occlusion pre- and post-EVT (for cases undergoing EVT only). At 24-36 hours, we record the NIHSS, the presence of symptomatic cerebral bleedings (SICH) as defined per the SITS-MOST protocol,1 and the occurrence of death. At 3 months, the functional status, assessed by the modified Rankin scale (mRS), and the survival rate are obtained by face-to-face or telephone-based interviews carried out by local certified investigators. In this study, the onset-to-treatment time (OTT) is defined as time elapsed between stroke onset (last time seen well) and IVT initiation or groin puncture (if pEVT).

**SUPPLEMENTARY TABLES**

**Supplementary Table. Patient selection criteria for endovascular treatment within our regionalized network of CSCs**

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| Inclusion criteria | |
| 1 | Informed consent |
| 2 | Acute ischemic stroke within first 8 hours after symptoms onset (12 hours for posterior circulation strokes or up to 48 hours if symptoms fluctuate and no tetraplegia, or < 6 hours if coma or tetraplegia) refractory to or ineligible for the use of IVT |
| 3 | Wake-up ischemic stroke or unknown ischemic stroke onset |
| 4 | Documented large arterial occlusion in cerebral arteries that correspond to the acute clinical deficit |
| 5 | Age ≤ 85 years |
| 6 | Pre-stroke mRS ≤ 2 |
| 7 | Signs of limited early infarction on brain CT (ASPECTS ≥ 7) or MRI (DWI-ASPECTS ≥ 6) and salvageable brain tissue on CT perfusion or MRI-PWI |
| Exclusion criteria | |
| 1 | Clinical presentation of intracranial hemorrhage, subarachnoid hemorrhage, arteriovenous malformation, aneurysm or cerebral neoplasm |
| 2 | Rapidly improving neurological symptoms or minor stroke |
| 3 | Comatose patient with NIHSS >30, except in vertebrobasilar occlusion |
| 4 | Anticoagulation with international normalized ratio >3 or prolonged partial thromboplastin time that exceeded twice the upper limit of the normal range |
| 5 | Platelet count < 30.000/mm3 |
| 6 | Baseline blood glucose concentrations <50mg/dl or >400 mg/dl |
| 7 | Sustained uncontrolled hypertension defined as systolic blood pressure >185 mm Hg or diastolic blood pressure >110 mm Hg regardless of intravenous antihypertensive medication |
| 8 | ASPECTS < 7 on CT or < 6 on DWI |
| 9 | Well-developed parenchymal hyperintensity seen on FLAIR or pronounced hypodensity on CT affecting the ischemic region |
| 10 | No evidence of large arterial occlusion on CT-, MR-angiography or transcranial color-coded duplex sonography |

**SUPPLEMENTARY FIGURES**

**Supplementary Figure. Distribution of cases by treatment group according to their propensity scores**



The grey line designates pEVT cases and the black line IVTa cases.

SUPPLEMENTARY REFERENCES

(1) Wahlgren N, Ahmed N, Davalos A, et al. Thrombolysis with alteplase for acute ischaemic stroke in the Safe Implementation of Thrombolysis in Stroke-Monitoring Study (SITS-MOST): an observational study. Lancet 2007;369:275-282.