Supplemental material

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Supplemental material

Supplementary methods

Multiple imputation

Multiple imputation was performed to estimate likely modified Rankin Scale (mRS) scores for survivors lost to follow-up or with incomplete data on any of the Riksstroke variables on activities of daily living (ADL) used for estimating mRS.

The imputation model included selected baseline characteristics as predictor values only: age, sex, ADL variables (living conditions and home care service before stroke, toileting, dressing, mobility), vascular risk factors (previous stroke, atrial fibrillation, diabetes mellitus, hypertension), treatments (ongoing anticoagulation, intravenous thrombolysis), stroke severity (pre-EVT NIHSS), intracranial occlusion location, stroke onset to revascularization, type of anesthesia, wake-up stroke, and early outcome variables (NIHSS at 24 hours and degree of recanalization).

The following variables were both used as predictors and imputed: functional ability in toileting, dressing, mobility, as well as living conditions and need of support from next of kin.

Because the data displayed a nonmonotone pattern of missing values and the missing variables were predominantly categorical, we imputed using the fully conditional specification method based on a logistic regression model. Five imputations were conducted, each based on 10 iterations of the underlying Markov chain. mRS scores were then calculated for each data set using the translation algorithm previously described, and an average was presented. Because we used a large number of predictor variables, both from baseline, post-procedure and follow-up, it seemed reasonable to assume that data were missing at random.

Supplementary results

Supplemental Table 1. Classification of complications in EVAS.

Procedure-related complications	Non-procedure related complications
Symptoms of hypoperfusion	Pneumonia
Anesthesiologic problems	Pulmonary edema
Related to endovascular device	Arrhythmia
Other	Epileptic seizures
Vessel perforation	Urosepsis
Extradural	Urinary tract infection
Intradural	Delirium
Perforator damage	Intracranial hypertension
Serious cardiac arrhythmia	Kidney failure
Thromboembolism in lower extremities	Fall accident
Complications caused by defect devices	Malignant media infarction

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Groin problems that require treatment	

Supplemental Table 2. Characteristics in followed up vs not followed up patients.

Variable	Followed up N=1768 %(n)	Loss to follow-up N=431 %(n)	p
Patient characteristics			
Age median (IQR)	73.5 (65–80)	71 (61–79)	<0.001
Female sex	46.0% (814)	46.6% (201)	0.433
Hypertension	59.5% (1050)	54.8% (234)	0.08
Atrial fibrillation	47.1% (833)	38.3% (165)	0.001
Diabetes	15.9% (280)	15.6% (67)	0.941
Previous stroke	10.6% (188)	12.6% (54)	0.263
Stroke characteristics			
Median NIHSS (IQR)	16 (11–20)	15 (10–19)	0.260
Wake-up stroke	12.9% (227)	12.1% (52)	0.326
Occlusion location DSA			0.683
ICA	19.6% (346)	18.3% (79)	
MCA, M1	51.5% (911)	50.8% (219)	
MCA, M2	28.9% (511)	30.9% (133)	
IVT treatment	54% (955)	51% (220)	0.328
Median DTN (IQR)	30 (20–45)	27 (15–46)	0.077
Median OTN (IQR)	99 (75–133)	100 (72–140)	0.769
Ongoing anticoagulation	16% (283)	15.5% (67)	0.883
Process time and treatment details			
Secondary transport to CSC	61.7% (1087)	60.3% (260)	0.620
Median OTG (IQR)	225 (158–341)	231 (153–367)	0.508
Median NTG (IQR)	97 (55–160)	87 (50–168)	0.083
Median OTR (IQR)	288 (210–412)	303 (216–424)	0.193
Successful reperfusion	85.4% (1494)	83.4% (357)	0.296
Anesthesia			1.000

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Conscious sedation	63.3% (1118)	63.4% (272)	
General anesthesia	36.7% (647)	36.6% (157)	
EVT technique			0.731
DAC	20.8% (367)	19.3% (83)	
Stent retriever +-DAC	74.9% (1324)	77.3% (333)	
Other	1.2% (22)	0.9% (4)	
Only attempt	3.1% (55)	2.6% (11)	
Early neurological outcome			
Median 24-h NIHSS	6 (2–14)	8 (3–15)	0.005
Adverse events			
sICH	4.5% (64)	6.8% (24)	0.075
IQR=interquartile range, IVT=intravenous thrombolysis, NIHSS=National Institute of Health Stroke Scale, ICA= internal carotid artery, DSA= digital subtraction angiography, MCA= middle cerebral artery, sICH=symptomatic intracerebral hemorrhage, CSC=comprehensive stroke center, OTG=onset-to-groin, OTR=onset-to-revascularization, DTN=door-to-needle, OTN=onset-to-needle, NTG=needle-to-groin, DAC=direct aspiration catheter			
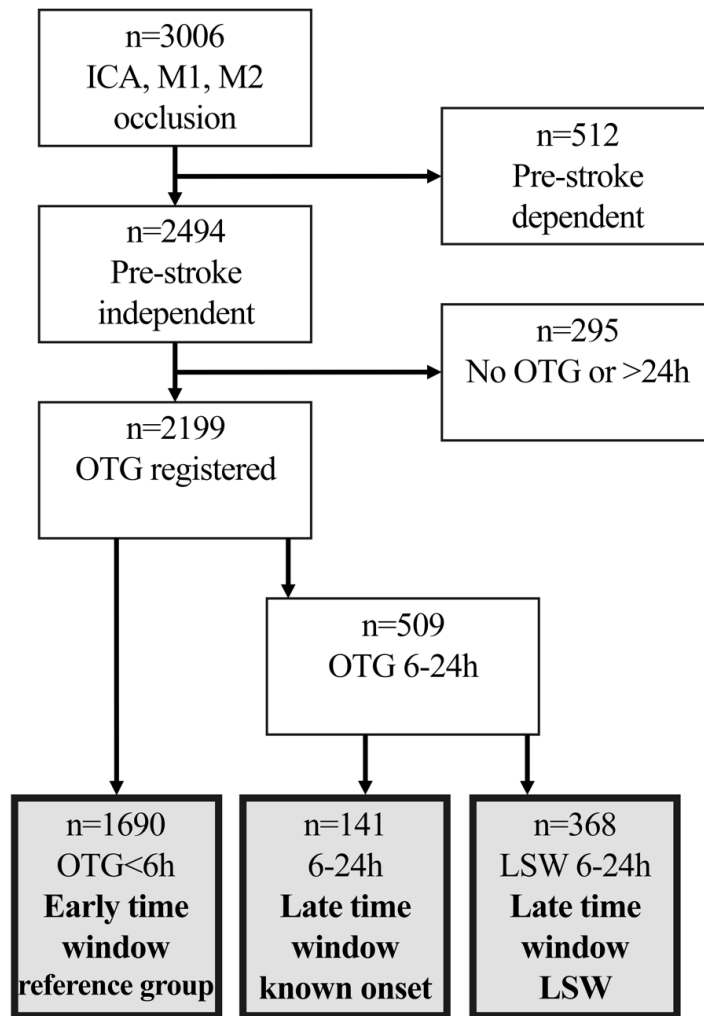
Supplemental Figure 1. Study flowchart.

A. mRS @ 3 months without missing
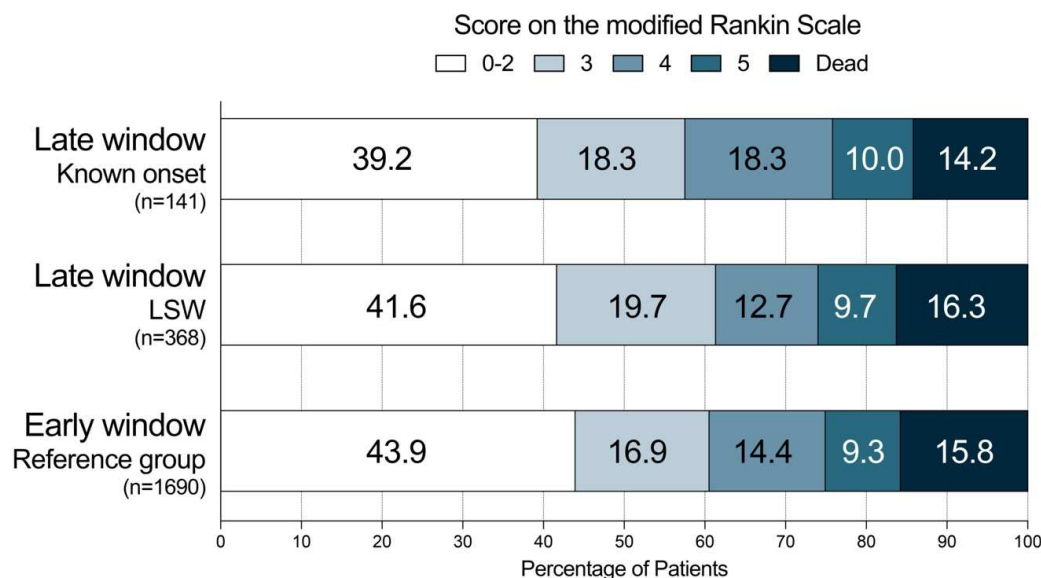
B. mRS @ 3 months including missing
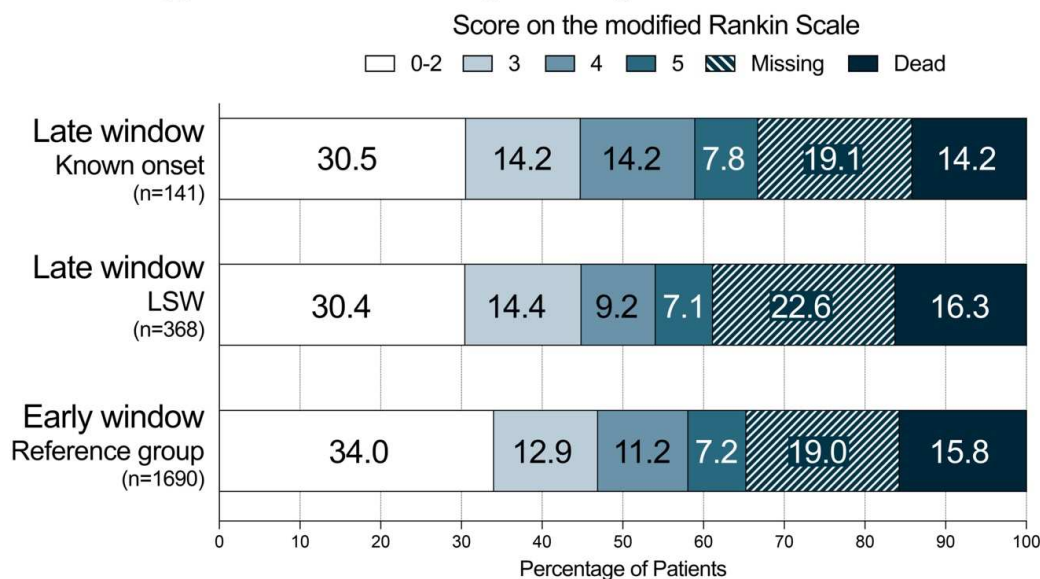
Supplemental Figure 2. Distribution on the modified Rankin scale at 90 days. In panel A with omission of patients lacking complete follow-up, and in B including loss to follow-up as a separate category (Missing).