Supplementary Table 3. Clinical and imaging outcomes of the study sample (n=464)

Clinical and imaging outcome data	Value
mRS at 90 days	2 (1–4)
mRS 0–2 at 90 days	284 (61.2)
NIHSS at 24 hours	5 (2–13)
Major clinical improvement	219 (47.2)
Recanalization rate	
rAOL 2b/3 (n=331)	68/331 (20.5)
eTICI 2c/3 (n=224)	64/224 (28.6)
Final ASPECTS (n=455)	8 (7–10)
Final infarct volume (mL) (n=432)	32.8 (62.6)
Parenchymal hemorrhage (n=455)	36 (7.9)
Remote parenchymal hemorrhage (n=455)	3 (0.7)

Values are presented as median (interquartile range) or number (%).
mRS, modified Rankin Scale; NIHSS, National Institutes of Health Stroke Scale; rAOL, revised Arterial Occlusive Lesion; eTICI, expanded Treatment in Cerebral Infarction; ASPECTS, Alberta Stroke Program Early CT Score.

Supplementary Table 4. Predicting major clinical improvement with imaging

Statistical models*	AIC	BIC	C statistic(95% CI)
Major clinical improvement			
Model 1. Baseline model	379.60	401.58	0.680 (0.618–0.741)
Model 2. Baseline model+CTP based EVT eligibility (rCBF)	379.38	405.03	0.689 (0.628–0.750)
Model 3. Baseline model+CTP based EVT eligibility (aCBF)	381.57	407.21	0.680 (0.618–0.741)
Model 4. Baseline model+CTP based EVT eligibility (CBV)	380.06	405.70	0.688 (0.627–0.749)
Model 5. Baseline model+mCTA treatment decision	379.94	405.59	0.686 (0.625–0.747)
mRS 0–2 at 90 days			
Model 1. Baseline model	341.50	363.48	0.764 (0.709–0.818)
Model 2. Baseline model+CTP based EVT eligibility (rCBF)	343.38	369.02	0.764 (0.710–0.819)
Model 3. Baseline model+CTP based EVT eligibility (aCBF)	338.93	364.57	0.773 (0.719–0.826)
Model 4. Baseline model+CTP based EVT eligibility (CBV)	343.34	368.98	0.763 (0.709–0.817)
Model 5. Baseline model+mCTA treatment decision	341.61	367.25	0.769 (0.715–0.822)

Statistical models comparing the various imaging selection criteria in estimating major clinical improvement, defined as 24-hour National Institutes of Health Stroke Scale (NIHSS) drop >50% compared to baseline, and modified Rankin Scale 0–2 at 90 days. This analysis was only in subjects with anterior circulation large vesselocclusion (n=289).
AIC, Akaike information criterion; BIC, Bayesian information criterion; CI, confidence interval; CTP, computed tomography perfusion; EVT, endovascular treatment; rCBF, relative cerebral blood flow; aCBF, absolute cerebral blood flow; CBV, cerebral blood volume; mCTA, multi-phase computed tomography angiography.
*The baseline model incorporates onset to computed tomography time, endovascular treatment decision, baseline NIHSS, baseline Alberta Stroke Program Early CT Score (ASPECTS) and patient age. mCTA: EVT treatment decision (yes is indicated by presence of a large vessel occlusion and good or intermediate collaterals), CTP treatment decision (yes is indicated by an ischemic core volume [defined as rCBF <30% for model 2, a cerebral blood flow <7 mL/100 g/min for model 3, CBV <2 mL/100 g for model 4]) <70 mL and absolute mismatch >15 mL and penumbra (defined as Tmax >6 seconds)/core mismatch ratio >1.8 [DEFUSE-3] criteria). Adjustment was performed for the following pre-specified baseline variables: age, baseline stroke severity as measured by the NIHSS, time from stroke symptom onset to baseline non-contrast head computed tomography (NCCT), baseline ASPECTS (11 point ordinal scale) on NCCT, occlusion location (anterior circulation large vessel occlusion vs. not) and treatment type (EVT vs. not). Since large vessel occlusion presence was part of the mCTA and CTP-based treatment decision rules, it was not incorporated as an independent variable in models 2–5.