

**Supplementary Table 3.** List of features

Feature characteristics	No. of features	Note
DWI_vol	1	DWI lesion volume (mL) calculated by the U-Net model.
Lesion_R	1	Binary variable. 1=lesion dominance in the right hemisphere. 0=lesion dominance in the left hemisphere.
Outer_cluster_area	5	1st, 2nd, 3rd, 4th, 5th largest areas in the outer brain "core" lesions.
Outer_ADCr_interval	15	Volume in each ADC ratio interval in the outer brain region: (0.00–0.06), (0.06–0.12), (0.12–0.18), (0.18–0.24), (0.24–0.30), (0.30–0.36), (0.36–0.42), (0.42–0.48), (0.48–0.54), (0.54–0.60), (0.60–0.66), (0.66–0.72), (0.72–0.78), (0.78–0.84), (0.84–0.90)
Inner_cluster_area	5	1st, 2nd, 3rd, 4th, 5th largest areas in the inner brain "core" lesions.
Inner_ADCr_interval	15	Volume in each ADC ratio interval in the inner brain region: (0.00–0.06), (0.06–0.12), (0.12–0.18), (0.18–0.24), (0.24–0.30), (0.30–0.36), (0.36–0.42), (0.42–0.48), (0.48–0.54), (0.54–0.60), (0.60–0.66), (0.66–0.72), (0.72–0.78), (0.78–0.84), (0.84–0.90)

DWI, diffusion-weighted imaging; ADC, apparent diffusion coefficient.

**Supplementary Table 4.** Cross-validation scores for machine learning models in the model development cohort

	Model	LR		RF		SVM	
		Accuracy mean (SD)	F1 mean (SD)	Accuracy mean (SD)	F1 mean (SD)	Accuracy mean (SD)	F1 mean (SD)
Conditional P(G EVT)	P(SR EVT)	0.66 (0.01)	0.82 (0.04)	0.69 (0.05)	0.80 (0.03)	0.66 (0.01)	0.80 (0.01)
	P(G SR)	0.64 (0.05)	0.69 (0.07)	0.66 (0.08)	0.71 (0.07)	0.59 (0.09)	0.72 (0.03)
	P(G UR)	0.73 (0.04)	0.23 (0.29)	0.67 (0.09)	0.24 (0.32)	0.73 (0.04)	0.18 (0.22)
Unconditional P(G EVT)	P(G EVT)	0.59 (0.08)	0.64 (0.06)	0.66 (0.07)	0.64 (0.03)	0.60 (0.06)	0.65 (0.07)
Unconditional P(G noEVT)	P(G noEVT)	0.73 (0.09)	0.18 (0.22)	0.73 (0.15)	0.63 (0.16)	0.68 (0.10)	0.48 (0.25)

LR, logistic regression; RF, random forest; SVM, support vector machine; SD, standard deviation; G, good clinical outcome; EVT, endovascular thrombectomy; SR, successful recanalization; UR, unsuccessful recanalization.