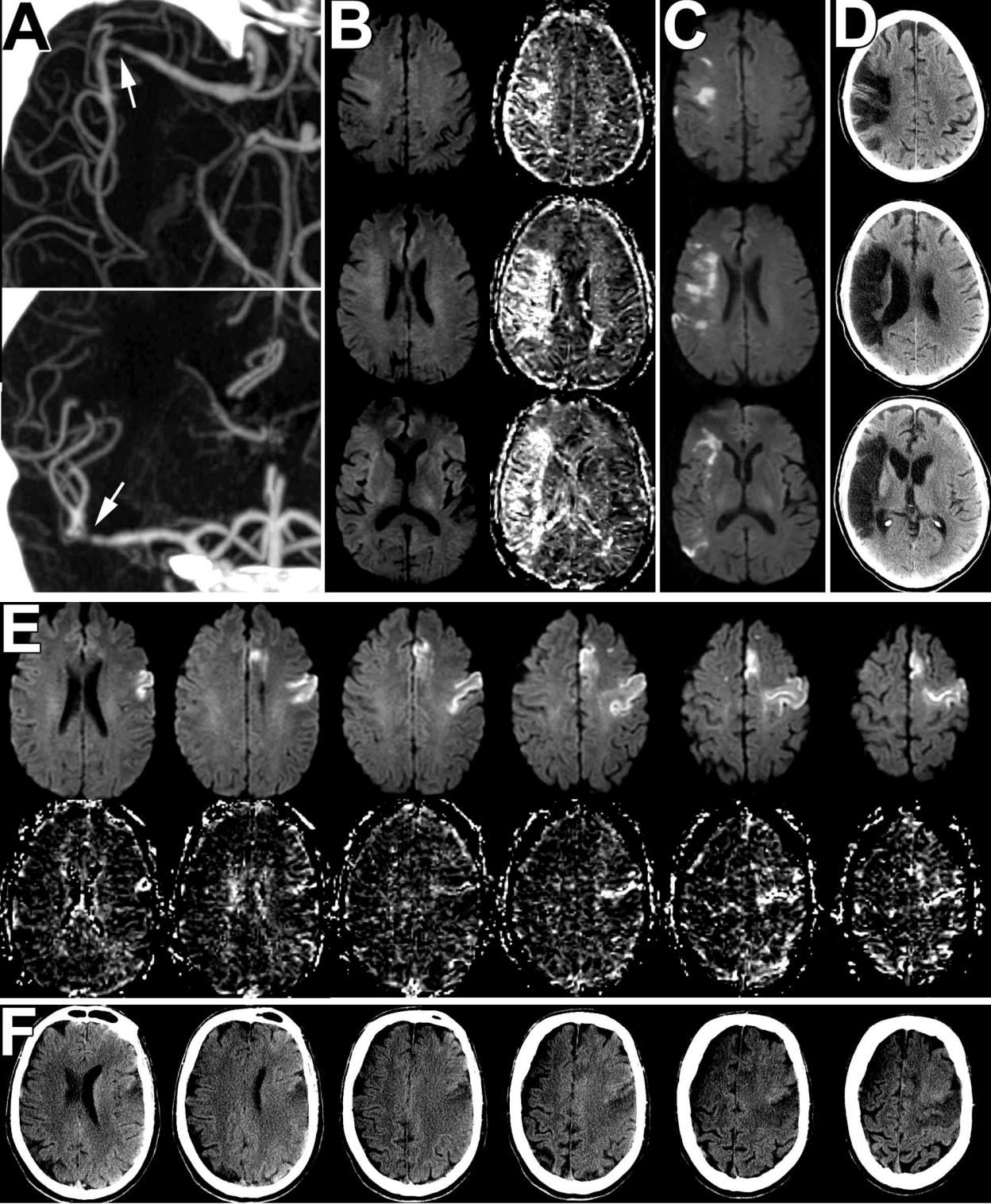


**Figure S1. Patients in whom outcome predication was incorrect.**

(A-D) Patient 3, a 73-year-old male, with poor outcome (mRS 3) after balloon angioplasty despite an initial NIHSS of 7. CTA (A) shows severe right MCA M1 stenosis (arrows). Initial DWI (B, left column) demonstrates only subtle asymmetry in signal intensity in the right corona radiata and frontal subcortical white matter, but there is prolonged MTT involving much of the right MCA territory (B, right column). DWI 24 hours after symptom onset (C) shows multiple acute infarcts in the right MCA territory (total volume, 53.9 mL). CT after 4 months shows infarct extension into the initial MTT lesion (final infarct volume 173.5 mL). (E-F) Patient 6, a 60-year-old male, who underwent IV-tPA and angioplasty, with poor outcome (mRS 3) despite an initial MTT volume <50ml. Initial DWI (E, top row) shows acute ACA and MCA infarcts involving the left superior frontal gyrus, motor cortex, and premotor cortex (volume 42.1mL). Elevated MTT is seen in the motor and premotor cortex and in part of the superior frontal gyrus (E, bottom row, volume 29.8mL). No infarct extension is seen on follow-up NCCT 5 days after MRI (F, volume 40.6mL).



**Table S1.** Patients in whom imaging or clinical thresholds falsely predicted clinical outcome.

Patient	Age/ gender	Side	NIHSSS	Occlusion	DWI	MTT / Tmax	mRS	Treatment	Final infarct volume (modality)	Comorbidities or complications
<i>NIHSSS &lt;8 did not predict good outcome</i>										
1	70/M	R	<b>6</b>	MCA M1	15.3	179.8/310.6	4	IV-TPA	34.3mL(day 3 NCCT)	Critical right ICA stenosis, angioplasty performed 10 weeks after stroke, no postoperative follow-up
2	78/M	R	<b>3</b>	MCA M1	25.3	110.3/105.2	4	None*	29.2mL(day 90 T2)	Prostate-CA, status post radiation and chemotherapy
3	73/M	R	<b>7</b>	MCA M2	13.6	199.0/222.9	3	Balloon angioplasty <sup>†</sup>	173,5mL(day 120 NCCT)	Critical ICA stenosis
<i>MTT &lt;50mL did not predict good outcome</i>										
4	93/F	R	16	ICA	6.1	<b>2.35/4.91</b>	6	IV-TPA	22.5mL(day 38 NCCT) <sup>‡</sup>	CHF, critical aortic stenosis. Recovery complicated by c.difficile enterocolitis, aspiration pneumonia, urinary tract infection, and sepsis leading to death 9 weeks after stroke.
5	60/M	L	22	ICA	42.1	<b>29.8/17.3</b>	3	IV-TPA and angioplasty	40.6mL(day 5 NCCT)	Recovery complicated by aspiration pneumonia, requiring tracheostomy.
6	55/M	R	10	none	1.0	<b>3.9/1.6</b>	3	none	No follow-up	Metastatic non-small cell lung cancer
<i>DWI&gt;70mL did not predict poor outcome</i>										
7	45/M	R	14	ICA / MCA M1	<b>103.1</b>	111.1/211.4	0	IV-TPA and IA recanalization(MERCI)	105.0mL(day 1 NCCT)	none
8	32/M	L	20	MCA M1	<b>74.8</b>	284.3/240.1	1	IV-TPA + IA recanalization(Penumbra)	73.7mL(day 11 T2)	None
9	26/F	R	14	ICA / MCA M1	<b>98.5</b>	193.1/157.8	1	IV-TPA	81.7mL(day 70 NCCT)	none

Criteria that produced incorrect outcome predictions are in bold. \*Symptoms worsened after MRI was completed, but by that time patient was outside of the treatment window for IV and/or IA therapy. <sup>†</sup> Balloon-angioplasty was performed after significant infarct extension on follow-up MRI and was complicated by post-angioplasty clot treated with eptifibatide. <sup>‡</sup> Infarct extension into previously inconspicuous areas was found on follow-up NCCT.