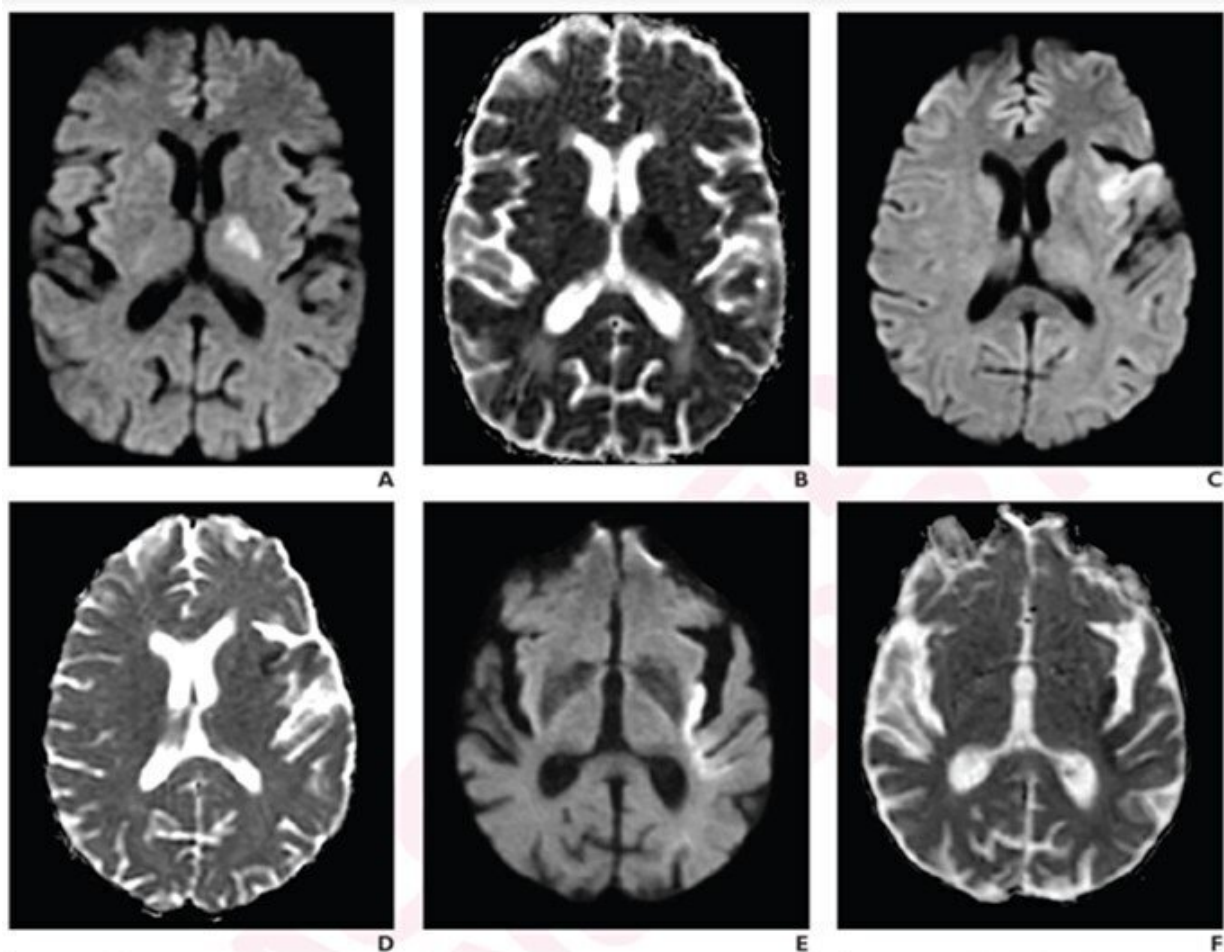


Percent insular ribbon infarction for growth rate prediction, outcomes in large-vessel occlusive stroke

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A. DWI and B. ADC map show 71-year-old patient with 0% insular ribbon infarction (IRF): score 0. C. DWI and D. ADC map show 62-year-old with 25% IRF: score 1. E. DWI and F. ADC map show 90-year-old with 50% IRF: score 2. G. DWI and H. ADC map show 59-year-old with 75% IRF: score 3. I. DWI and

J. ADC map show 69-year-old with 100% IRF: score 4. Credit: ARRS/AJR

According to a study published *American Journal of Roentgenology* (*AJR*), percent insular ribbon infarction (PIRI) complements current stroke outcome predictors, classifying patients with slowly progressive stroke who could benefit from late-window endovascular thrombectomy (EVT).

Noting that PIRI was independently associated with infarct growth rate and 90-day outcome, "PIRI may help identify [patients](#) who could benefit from late-window EVT when requiring transfer to EVT-capable centers," wrote head researcher Robert W. Regenhardt, MD, Ph.D., from the department of neurology at Massachusetts General Hospital and Harvard Medical School.

Analyzing a previous clinical trial of acute stroke patients untreated with reperfusion therapies from January 2007 to June 2009, Regenhardt et al. reevaluated 31 trial patients ([median age](#), 71 years; 12 female, 19 male) with anterior-circulation large-vessel occlusion who underwent serial MRI examinations.

Two neuroradiologists independently scored PIRI on presentation MRI—mild (0-1), moderate (2), severe (3-4)—based upon length ratios of the insula portion showing restricted diffusion to the insula's total length. A 90-day modified Rankin Scale (mRS) was also obtained.

Ultimately, in multivariable models controlling for age, large-vessel occlusion location, and collateral pattern, PIRI category was a significant independent predictor of presentation-to-48-hour infarct growth rate ($\beta=1.3$) and 90-day mRS ≤ 2 (OR=0.2). Sensitivity and specificity for predicting 90-day mRS ≤ 2 were 90% and 84% for mild-to-moderate

PIRI, versus 70% and 74% for symmetric collateral pattern.

"To our knowledge," the authors of this *AJR* accepted manuscript added, "the present study is the first to show the PIRI category to be an independent predictor of 90-day mRS

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