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Cost-Effective CT & MRI Contrast Agents



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Reply

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Reply

We thank Drs Pulli and Yoo for their interest in our results and their subsequent confirmation of our study findings.¹ Our work highlighted the danger of extrapolating findings from previous-generation scanners to newer, faster scanners. In particular, before our publication, there was an established opinion that CTA-signal intensities (SIs) were CBV-weighted and could, in addition to providing vascular data, provide an estimate of infarct core. This observation was true for older-generation scanners and was likely due to the increased scanning time required to cover the region of interest. Slower scanning times allowed contrast to reach the blood vessels in the ischemic/infarct region associated with prolonged transit time.

With the advent of modern scanners, the observation is no longer true. The role of CTA, in our opinion, remains the delineation of vascular anatomy, including the site of occlusion and presence of collaterals. CTA protocols should be optimized for vascular, not parenchymal, imaging. Estimation of infarct volume on CTA-SI was useful when CTP was not widely available but should be relegated to the history books. CTP studies provide outstanding estimates of core and tissue at risk with the area under the curve associated with thresholded parameters approaching 0.90 for core determination.² For those centers where CTP is unavailable, we have shown that a post-contrast CT (PCT) following CTA demonstrates hypoattenuation

that closely estimates core. PCT can be obtained at a lower dose than CTP. We strongly favor CTP over a PCT approach and have previously shown that infarct can be more confidently and correctly diagnosed by using CTP than noncontrast CT or CTA source images.³

References

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