To the Editor:

We thank the authors Ehrlich et al for their study, which is a valuable effort to look at the safety of computed tomographic angiography (CTA) in acute stroke patients in terms of renal function.1 Multiple previous papers have also found the use of contrast to be safe in triage of acute stroke patients, some even concluding that contrast could be injected even before waiting for serum creatinine levels.2 However, we would like to raise a few concerns about this study.

Of the 289 patients included in the study, 98 patients did not have 24- to 48-hour creatinine value recorded, including 56 out of the 157 patients who received contrast for CTA. Because the authors are using change in serum creatinine from presentation to 24 to 48 hours, it is unclear why they have not confined all the discussion to patients who actually did satisfy the inclusion criteria.

The authors are relying on no significant difference in change in creatinine in patients who did receive contrast versus those who did not to conclude that contrast is safe in regards to renal function. However, the 2 groups are significantly different in terms of their baseline renal function. The CTA group was younger and healthier with a mean creatinine of 1.06 versus 1.39 for the group who did not get contrast (P=0.004). Nearly 40% of patients who did not get contrast had chronic renal insufficiency versus only 15% of those got contrast for CTA (P<0.001). Preexisting renal disease is known to be the primary risk factor for development of contrast-induced nephropathy.3 So the patients who did not get contrast were already at high risk for developing worsening renal function. Using this group to compare against a healthier population in terms of renal function who developed contrast-induced nephropathy may give a false sense of safety.

In this study, 5% of patients who got contrast developed acute kidney injury. This is similar to previous studies performed in stroke patients.4 However, serum creatinine measured at 24 to 48 hours may not be truly reflective of the extent of renal injury because previous studies have shown that creatinine level typically peaks 3 to 5 days after contrast administration.5

Use of CTA for triage of acute stroke patients has significantly increased since the recent success of the thrombectomy trials. More studies may be needed to deem the use of contrast safe enough to warrant not checking the renal function, especially in patients who may not need it urgently for thrombectomy considerations.

Disclosures

None.

Xiao Wu, BS
Long Tu, MD
Ajay Malhotra, MD
Department of Radiology and Biomedical Imaging
Yale School of Medicine
New Haven, CT


Xiao Wu, Long Tu and Ajay Malhotra


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