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Reply

We would like to thank Drs. Cantor and Lim for their interest in our work (1). We disagree with their interpretation that the results of our analysis favor iodixanol and believe that the correct interpretation of our study is that iodixanol may be superior to some low osmolar contrast media (LOCM), but there is no data to suggest its superiority to other LOCM.

The authors point out 3 publications not included in the meta-analysis. Of the 3 reports they mention, one (Nie et al. [2]) was published outside our pre-defined search window (1980 through November 30, 2008). Inclusion of the other 2 trials did change the summary statistic slightly, although the results remained nonsignificant (risk ratio [RR]: 0.74, 95% confidence interval [CI]: 0.53 to 1.02, p = 0.069, p for heterogeneity = 0.03). Inclusion of all 3 trials shifts the results in favor of iodixanol compared with the pool of LOCM (RR: 0.70; 95% CI: 0.50 to 0.97; p = 0.03, p for heterogeneity = 0.02). However, the comparison of iodixanol with various types of LOCM remains unchanged: iodixanol causes less contrast-induced acute kidney injury (CI-AKI) compared with ioxaglate (3 studies; RR: 0.58; 95% CI: 0.37 to 0.92; p = 0.02) and iohexol (2 studies; RR: 0.19; 95% CI: 0.07 to 0.56; p = 0.002) but has no relative difference in CI-AKI compared with iopromide (5 studies; RR: 0.731; 95% CI: 0.36 to 1.48; p = 0.38), iopamidol (4 studies; RR: 0.97; 95% CI: 0.58 to 1.58; p = 0.89), and ioversol (2 studies; RR: 0.62; 95% CI: 0.22 to 1.74; p = 0.37). This re-emphasizes the point that iodixanol has similar renal safety compared with some contrast media and may be safer with respect to renal toxicity when compared with other LOCM.

The authors also indicate that the included studies varied in demographic and clinical parameters. Indeed, this is a limitation of all meta-analyses, but to some extent this makes the results more generalizable. With regard to the concern that some randomized trials only checked serum creatinine a single time after 48 h, it is worth reiterating that serum creatinine tends to peak 48 to 72 h after contrast exposure. Although more frequent serum creatinine checks may result in a higher observed incidence of CI-AKI in both the iodixanol and the LOCM groups, it is not clear this would change the overall conclusion of each study.

Contrary to the letter authors' suggestion, the IMPACT (IMpaired PAtients undergoing Computed Tomography) trial appropriately fulfilled the criteria for inclusion in our analysis (3). Further, as demonstrated by our influence analysis, the exclusion of a single trial would not change the overall result of the meta-analysis.

We share the letter authors' advocacy for quality patient care and quality clinical design. Further investigative trials comparing specific contrast media would continue to illuminate the most optimal ways to minimize CI-AKI. In light of conflicting data and ongoing debate, the proposed superior safety of iodixanol compared with all types of LOCM is less well established than when the 2007 American College of Cardiology/American Heart Association guidelines provided a Class IA recommendation for its use in the setting of unstable angina or non–ST-segment elevation myocardial infarction and renal insufficiency (4).

Michael Reed, MD
Pascal Meier, MD
***Hitinder S. Gurm, MBBS**

*University of Michigan
Interventional Cardiovascular Medicine
Internal Medicine
1500 East Medical Center Drive
2A394
Ann Arbor, Michigan 48109
E-mail: hgurm@med.umich.edu

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