

## Invited Commentary



# Contrast-associated acute kidney injury: How can we do better?

In the current issue of *Baylor University Medical Center Proceedings*, Maghoub et al provide an in-depth review of contrast-induced acute kidney injury (CA-AKI).<sup>1</sup> Although there has been discussion about the relevance of the diagnosis, CA-AKI is an entity with pathophysiologic underpinnings which is associated with an increased risk of adverse outcomes for patients as well as increased healthcare utilization and costs.<sup>1</sup> Although predictive risk models and mitigating therapeutics have been described, these tools carry inherent limitations.<sup>1</sup> Most practitioners are likely to encounter CA-AKI in some of their clinical encounters, so a firm grasp of the topic is essential to optimal patient care.

The authors mention that because of concerns about the development of CA-AKI, physicians may be less likely to utilize studies involving the use of radiocontrast material (RCM).<sup>1</sup> This observation raises questions about the practice patterns and attitudes of practitioners. There is limited evidence to guide this discussion. Anecdotally, there is a range of perceptions, including “this study can’t be done because of the patient’s creatinine,” “nephrology won’t want us to use RCM in this patient,” and “we need to get clearance from nephrology before we order that study.” Alternatively, it is common for RCM to be used without regard for risk assessment of the patient. RCM may be used without discussion with a nephrologist if emergency conditions necessitate less weight to be placed on the risks in the decision-making process.

Literature exists describing the underutilization of RCM in patients with kidney disease. Chertow et al coined the term “renalism” to describe the withholding of indicated studies and interventions from patients primarily based on coexisting kidney disease.<sup>2</sup> Specifically, lower rates of cardiac angiography were observed for elderly patients after myocardial infarction who had chronic kidney disease.<sup>2</sup> This mindset has also led to decreased utilization of indicated cardioprotective medications and has clouded conclusions that can be drawn from the literature, as patients with chronic kidney disease are often excluded from studies that may involve the use of RCM.<sup>3–5</sup>


What, then, is the optimal approach when CA-AKI is present or anticipated? A balanced approach is preferred. The primary objective is to provide the best possible, evidence-based, patient-centered care to each patient. For patients who have not yet received an RCM-based study, a nephrologist should provide a risk assessment, including the appropriateness of potential pre- and post-study interventions to reduce risk. Such assessments should involve the use of appropriate, validated clinical tools, but should also allow for nuanced clinical judgment specific to each case. The assessment is usually not a recommendation to proceed or not to proceed but additional information to be considered in the risk-benefit analysis as part of the shared decision-making process.

Ideally, a conversation between nephrology and the primary clinical team will occur early in the decision-making process, preferably before RCM is used.<sup>6</sup> However, this is not always possible, particularly in emergency situations. Potential avenues to create awareness about the risks of CA-AKI and preventive measures include educational activities for all practitioners and targeted discussions with leaders from hospital administration and departments most likely to utilize RCM-based studies. Informal conversations with colleagues may reach fewer people but can have a significant individual impact. Nephrologists and other practitioners can also engage in education with their patients with chronic kidney disease in the outpatient setting, encouraging them to ask questions (rather than attempting to dictate decision-making) if an RCM-based study is considered.

There is a need for additional investigation into this topic. The authors describe existing risk assessment tools and risk mitigation strategies.<sup>1</sup> They also correctly point out limitations that exist with these tools and strategies.<sup>1</sup> Consequently, more well-designed, rigorous studies that include a wider range of patients and clinical scenarios are vital to advancing the knowledge base of this clinical problem.

The use of RCM-based studies is an essential part of modern healthcare and can provide a great deal of beneficial diagnostic and therapeutic use. However, the development of CA-AKI is a problem that must be addressed. Risk assessment,

education, clear communication among providers, and expansion of the knowledge base about CA-AKI are all important steps to provide the best possible care to our patients.

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1. Mahgoub M, Fan J, Concepcion L, et al. Current updates in radio-contrast-associated acute kidney injury. *Proc (Bayl Univ Med Cent)*. 2024;37(6):938–944. doi:10.1080/08998280.2024.2395765.

2. Chertow GM, Normand S-LT, McNeil BJ. “Renalism”: inappropriately low rates of coronary angiography in elderly individuals with renal insufficiency. *J Am Soc Nephrol*. 2004;15(9):2462–2468. doi:10.1097/01.ASN.0000135969.33773.0B.
3. Leung KCW, Pannu N, Tan Z, et al; APPROACH and AKDN Investigators. Contrast-associated AKI and use of cardiovascular medications after acute coronary syndrome. *Clin J Am Soc Nephrol*. 2014; 9(11):1840–1848. doi:10.2215/CJN.03460414.
4. Szummer K, Lundman P, Jacobson SH, et al. SWEDEHEART: relation between renal function, presentation, use of therapies, and in-hospital complications in acute coronary syndrome: Data from the SWEDEHEART register. *J Intern Med*. 2010;268(1):40–49. doi:10.1111/j.1365-2796.2009.02204.x.
5. Szczech LA. Did “renalism” skew the results of a negative study? *Nat Rev Nephrol*. 2010;6(1):18–20. doi:10.1038/nrneph.2009.208.
6. Mehta R, Sorbo D, Ronco F, Ronco C. Key considerations regarding the renal risks of iodinated contrast media: the nephrologist’s role. *Cardiorenal Med*. 2023;13(1):324–331. doi:10.1159/000533282.