

# Letters to the Editor

The Editor welcomes submissions for possible publication in the Letters to the Editor section that consist of commentary on an article published in the Journal or other relevant issues. Authors should:

- Include no more than 500 words of text, three authors, and five references
- Type with double-spacing
- See <http://jtcs.ctsnetjournals.org/misc/ifora.shtml> for detailed submission instructions.
- Submit the letter electronically via [jtcvs.editorialmanager.com](mailto:jtcvs.editorialmanager.com).

Letters commenting on an article published in the JTCVS will be considered if they are received within 6 weeks of the time the article was published. Authors of the article being commented on will be given an opportunity to offer a timely response (2 weeks) to the letter. Authors of letters will be notified that the letter has been received. Unpublished letters cannot be returned.

## Indications for gadolinium for coronary angiography

### To the Editor:

We read with great interest the article by Nicolosi and associates<sup>1</sup> in the July 2002 issue of the *Journal* dealing with the beneficial effects of gadolinium on regional stunning in the canine heart in vivo.

Gadolinium is currently used to enhance magnetic resonance imaging and is known to be well tolerated by the kidneys. We<sup>2</sup> recently reported the first clinical use of gadolinium for coronary angiography in a patient with elevated serum creatinine. We are currently conducting a prospective randomized trial to evaluate the exact role as well as the safety of gadolinium for coronary angiography in patients with abnormal renal function. Although none of our patients had any enzymatic or electrocardiographic changes in relation to myocardial damage, we are still wondering what the exact effects of this drug are on the myocardium. The article by Nicolosi and colleagues suggests that gadolinium is beneficial for the myocardium. This article, together with the promising results of our ongoing trial, might pave the way toward future indications for gadolinium for coronary angiography.

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## References

1. Nicolosi AC, West G, Markley JG, Logan B, Olinger Gn. Gadolinium attenuates regional stunning in the canine heart in vivo. *J Thorac Cardiovasc Surg.* 2002;124:57-62.
2. Sarkis A, Badaoui G, Slaba S, Moussalli A, Jebara VA. Gadolinium-based coronarography in a patient with renal failure: first clinical report. *Cathet Cardiovasc Interv.* 2001; 54:70-1.

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## Reply to the Editor

In response to the letter to the Editor regarding our article,<sup>1</sup> we find the notion of using a gadolinium-based contrast agent for coronary angiography intriguing, particularly in the context of acute coronary syndrome. Our study documented the salutary effect of gadolinium chloride (GdCl<sub>3</sub>), administered before an ischemic insult, on contractile function after 3 hours of reperfusion. There was no observed effect of gadolinium on a load-independent index of contractility in the baseline state, nor were there effects on heart rate or cardiac output. The mechanism(s) by which gadolinium accelerates recovery of contractile function in stunned myocardium are yet to be determined. Its may modulate ischemia/reperfusion-induced pathophysiology of intracellular ions, particularly Ca<sup>2+</sup>, via effects on stretch-activated ion channels, and/or it may directly attenuate superoxide production. These effects, however, have been observed only with the use of GdCl<sub>3</sub>. The gadolinium chelates used as contrast agents for magnetic resonance imaging and used by Sarkis and associates<sup>3</sup> for coronary angiography are generally eliminated by the kidney unmetabolized. These agents do not bind plasma proteins, nor are they thought to react with biologic structures. One cannot assume that these chelates would exert effects similar to those of GdCl<sub>3</sub>. Further studies of gadolinium chelates would therefore be necessary before considering them for possible dual roles as both contrast agents and protective agents in coronary artery disease.

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## References

1. Nicolosi AC, West G, Markley JG, Logan B, Olinger GN. Gadolinium attenuates regional stunning in the canine heart in vivo. *J Thorac Cardiovasc Surg.* 2002;124:57-62.
2. Sarkis A, Badaoui G, Slaba S, Moussalli A, Jebara VA. Gadolinium-based coronarogra-