

# The Medical Letter®

## On Drugs and Therapeutics

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### IN BRIEF

#### Toxicity of Gadolinium-Based Contrast Agents

Gadolinium-based contrast agents, which are used mainly for magnetic resonance imaging and angiography, were first introduced partly because of the discovery in the 1990's that iodine-based contrast agents could cause nephrotoxicity and acute renal failure. Some recent reports have suggested, however, that gadolinium-based agents may also be nephrotoxic.<sup>1</sup> One patient who developed acute renal failure after use of gadolinium-based contrast had a renal biopsy that showed acute tubular injury.<sup>2</sup>

Moreover, after exposure to gadolinium-based contrast, some patients with severe renal insufficiency, or liver disease with any degree of renal insufficiency, have developed nephrogenic systemic fibrosis, with scleroderma-like changes in the skin, connective tissues and other organs, which has sometimes been fatal.<sup>3,4</sup> The mechanism is unknown; release of free gadolinium ions, which are toxic, has been suggested.<sup>5</sup>

Gadolinium-containing contrast agents are marketed in the US as *Magnevist*, *MultiHance*, *Omniscan*, *OptiMARK*, and *ProHance* ([www.fda.gov](http://www.fda.gov)). In patients with renal insufficiency, especially those requiring dialysis, use of any contrast agent should be avoided if possible.

1. C Briguori et al. Gadolinium-based contrast agents and nephrotoxicity in patients undergoing coronary artery procedures. *Cath Cardiovasc Interven* 2006; 67:175.
2. H Akgun et al. Are gadolinium-based contrast media nephrotoxic? A renal biopsy study. *Arch Pathol Lab Med* 2006; 130:1354.
3. AS Boyd et al. Gadolinium deposition in nephrogenic fibrosing dermopathy. *J Am Acad Dermatol* 2007; 56:27.
4. A Deo et al. Nephrogenic systemic fibrosis: a population study examining the relationship of disease development to gadolinium exposure. *Clin J Am Soc Nephrol* 2007; 2:264.
5. T Grobner and FC Prischl. Gadolinium and nephrogenic systemic fibrosis. *Kidney Int* 2007 May 16; epub ahead of print.

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