

Peer Review

Review of: "Chelation Therapy for Rare Earth Element Toxicity: Current Evidence, Challenges, and Future Directions"

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Abstract / Introduction

The abstract is well-written and frames the scope of the review effectively. The manuscript should also note that rare earth elements belong to the f-block of the periodic table and remain physiologically alien in vertebrates. This detail underscores the incongruity of these metals in biology and sharpens the rationale for exploring their toxicity and management.

Section 3.2.3

The statement that “the only confirmed adverse effect of gadolinium retention is nephrogenic systemic fibrosis” should be revised. Food and Drug Administration prescribing information for all magnetic resonance imaging contrast agents includes warnings for acute kidney injury. Early studies show dose-dependent nephrotoxicity, and even within accepted on-label dosing, these agents can induce acute kidney injury in patients with pre-existing chronic kidney disease. Published reports also describe gadolinium-induced skin plaques, and there is a growing body of literature on gadolinium encephalopathy when contrast agents enter cerebrospinal fluid, whether off-label or by accident.

Chelation Section

The section on chelation is nicely encompassing. Patients have shown strong interest in another agent, 3,4,3-LI(1,2-HOPO) ligand (compound CID: 132648). Since the table has already been formatted, consider including a brief mention of this compound. Even a few sentences acknowledging its relevance would respond to ongoing conversations in the field.

General Strengths

I appreciated the emphasis on the need for clinical providers to broaden their understanding of rare earth elements and their management. The discussion of limitations was clear and fairly presented.

Declarations

Potential competing interests: No potential competing interests to declare.