

No association found between contrast agents used for MRIs and nervous system disorder

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In a study appearing in the July 5 issue of *JAMA*, Blayne Welk, M.D., M.Sc., of Western University, London, Canada, and colleagues conducted a study to assess the association between gadolinium exposure and parkinsonism, a degenerative disorder of the central nervous system characterized by tremor and impaired muscular coordination.

Gadolinium-based contrast agents are used for enhancement during [magnetic resonance imaging](#) (MRI). Safety concerns have emerged over retained gadolinium in the globus pallidi (an area of the brain). Neurotoxic effects have been seen in animals and when gadolinium is given intrathecally (a type of method for administering a drug) in humans. Consequences of damage to the globus pallidi may include parkinsonian symptoms. For this study, multiple linked administrative databases from Ontario, Canada were used. All [patients](#) older than 66 years who underwent an initial MRI between April 2003 and March 2013 were identified. Patients who were exposed to gadolinium-enhanced MRIs were compared with patients who received non-gadolinium-enhanced MRIs.

Of the 246,557 patients undergoing at least 1 MRI (not of the brain or spine) during the study period, 99,739 (40.5 percent) received at least 1 dose of gadolinium. Among patients who underwent gadolinium-enhanced MRIs, 81.5 percent underwent a single study, and 2.5 percent underwent 4 or more gadolinium-enhanced studies. Incident parkinsonism developed in 1.2 percent of unexposed patients and 1.2 percent of those exposed to gadolinium. No significant association between gadolinium exposure and parkinsonism was found.

"This result does not support the hypothesis that

gadolinium deposits in the globus pallidi lead to neuronal damage manifesting as parkinsonism. However, reports of other nonspecific symptoms (pain, cognitive changes) after gadolinium exposure require further study," the authors write.

More information: *JAMA*, [DOI: 10.1001/jama.2016.8096](#)

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