An official website of the United States government
Here's how you know

FULL TEXT LINKS

ELSEVIER FULL-TEXT ARTICLE

Med Hypotheses. 2019 Aug:129:109240. doi: 10.1016/j.mehy.2019.109240. Epub 2019 May 20.

The gadolinium hypothesis for fibromyalgia and unexplained widespread chronic pain

Silvia Maria Lattanzio [1]

Affiliations

PMID: 31371082 DOI: 10.1016/j.mehy.2019.109240

Abstract

Fibromyalgia (FM) is a chronic, painful, heterogeneous, and common disorder carrying a substantial socio-economical burden. It lacks effective cures and its aetiology is still unknown. There exists evidence for central and peripheral neurological contribution to the symptoms but grasping the real source of abnormal nervous system sensitization remains an ongoing challenge. There exists an association between an injury/trauma and the onset of the symptoms, but a causal relationship has not been yet sufficiently supported by scientific evidence. I postulate a role for gadolinium-based contrast agents and retention of gadolinium in the body. This conjecture breaks the hypothesis of a direct role for a physical injury/trauma per se in favour of an indirect one by the subsequent diagnostic procedures. It creates a new link between retention of gadolinium in the body and painful conditions as FM and unexplained chronic widespread pain reported after a trauma, surgery, or medical illness. Experimental evidence demonstrates possible retention of gadolinium species in human body, still lacking conclusive answers on their pathological consequences. Notwithstanding, there exist some initial data that report unexplained chronic widespread pain and symptoms of FM in those patients: they are suggestive for pathological consequences associated with gadolinium retention. Besides clear compelling symptoms overlapping, biochemical findings are provided to sustain the hypothesis of a role for gadolinium in the disease process focusing on neurotransmitters, endogenous metal cations, cytokines, and muscle tissue. Experimental findings strongly support the hypothesis of impairment at the cellular, intracellular, and systemic levels in FM. And these data are highly compatible with collateral effects associated with the interference of the gadolinium ion and its pharmaceutical chelates into biochemical pathways in vivo. The hypothesis presented in this article, along with the support of scientific evidence, links FM and unexplained chronic widespread pain reported after a trauma, surgery, or medical illness to retention of gadolinium in the body. If the hypothesis is confirmed, it could improve diagnosis and prevention, while providing a ground for development of new treatments.

Keywords: Chronic pain; Contrast agents; Fibromyalgia; Gadolinium; Safety; Toxicity; Transmetallation.

Copyright © 2019. Published by Elsevier Ltd.

PubMed Disclaimer

Related information

MedGen
PubChem Compound (MeSH Keyword)

LinkOut - more resources

Full Text Sources

Elsevier Science

Medical

Genetic Alliance

MedlinePlus Health Information