Gadolinium Contrast Agent Safety and Significance of Recent Data on Brain and Body Deposition

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Gadolinium based contrast agents allow your doctor to understand what is affecting your heart at the tissue level and may lead to life-saving diagnoses.

- It can provide information about your prognosis and survival and will help make diagnoses which will make a difference in how your doctor will treat you
- Among the diseases it can diagnose include a prior heart attack, fibrosis or scarring of your heart which can give rise to life-threatening rhythm problems and may require a defibrillator, clots, tumor, and problems with the outside layer of your heart (pericardium)
- Some diseases cannot be found without gadolinium-based contrast agents. In some cases, not using the contrast agent will delay diagnosis and potentially life-saving treatment

In the last 29 years, over 100 million patients have received GBCA with an excellent safety profile (incidence of acute reaction ranging from 0.08-0.12%).

Gadolinium based contrast agent in its original form is not toxic. This because the contrast agents contain “chelates” which are molecules that bind to the elemental gadolinium and allows it to be removed from your body through your kidneys.

There are 2 different types of contrast agents, linear and macrocyclic agents. They differ based on the type and shape of the chelate molecule binding the gadolinium.

- Macro cyclic agents are thought to be more stable as the chelate has a stronger bond with the gadolinium. However, brain deposits have been found with these agents even with a single dose. More research is needed to understand what this means.
- Macro cyclic GBCAs include: gadobutrol (Gadovist, Gadavist), Gadoteridol (ProHance), and Gadoterate meglumine (Dotarem).

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If you have advanced kidney disease there is a well-known risk of developing a very serious disease known as nephrogenic systemic fibrosis. This disease has nearly disappeared in the medical field by avoiding the use of gadolinium contrast in patients with poor kidney disease.

We do not know if the gadolinium that was detected in brain and tissue is the toxic form or the safer chelated form. We need more data to find out how it will affect your safety.

It is important to discuss with your physician regarding your personal risks and benefits of using a gadolinium-based contrast agent. It depends on what he/she is trying to diagnose and the likelihood of that diagnosis.
References:


