Using cardiovascular magnetic resonance to define mechanisms of comorbidity and to measure the effect of biological therapy: the CADERA observational study

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Plain English summary

The CADERA observational study

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Plain English summary

Rheumatoid arthritis is mainly known for the disabling joint changes that it causes, such as stiffness and pain. Patients with rheumatoid arthritis also have a higher rate of heart and blood vessel abnormalities, including a higher risk of heart attack and stroke, than the general population. This is thought to be caused by widespread inflammation affecting not only the joints but also the heart and blood vessels. Newer treatments for rheumatoid arthritis work well to control inflammation in the joints. The aim of the CADERA (Coronary Artery Disease Evaluation in Rheumatoid Arthritis) study was to find out whether or not these treatments also improve the health of the blood vessels.

The CADERA study was carried out alongside a larger, randomised study in which patients with newly diagnosed rheumatoid arthritis received either standard treatment or more effective anti-inflammatory treatment called 'biologics', which directly target the substances that cause inflammation.

Eighty-one patients with newly diagnosed rheumatoid arthritis were randomly started on standard treatment or biologics. At 1 and 2 years after treatment was started, magnetic resonance imaging was used to provide detailed images that can be used to detect the presence and extent of heart and blood vessel problems.

We found that, before any treatment, rheumatoid arthritis patients showed changes of blood vessel function compared with a group of 30 control subjects without rheumatoid arthritis of similar age and sex. Both types of rheumatoid arthritis treatment improved blood vessel function but there was no significant benefit of the newer biologic treatment compared with the standard treatment, although small differences were seen.

The results show that rheumatoid arthritis patients, even at an early stage of their disease, have changes in blood vessel function and that this can be improved with rheumatoid arthritis treatment. Whether or not these improvements lead to lower rates of heart attacks and strokes needs to be established in future studies.

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