

Study shows potential usefulness of non-invasive measure of heart tissue scarring

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Scarring of tissue in the upper chamber of the heart (atrium) was associated with recurrent rhythm disorder after treatment, according to a study in the February 5 issue of *JAMA*.

Left atrial fibrosis (formation of scar tissue in the heart) is prominent in [patients](#) with [atrial fibrillation](#) (AF), according to background information in the article. Extensive atrial tissue fibrosis identified by delayed enhancement magnetic resonance imaging (MRI) has been associated with poor outcomes of AF [catheter ablation](#), a procedure in which electrical energy is used to treat AF.

Nassir F. Marrouche, M.D., of the University of Utah School of Medicine, Salt Lake City, and colleagues conducted a study to characterize the feasibility of measuring atrial scar tissue using delayed enhancement [magnetic resonance imaging](#) (MRI), and assessed the association between the amount of [scar tissue](#) and response to ablation. The study was conducted between August 2010 and August 2011 at 15 centers in the United States, Europe, and Australia; delayed enhancement MRI images were obtained up to 30 days before ablation.

There were 329 patients enrolled in the study; 57 patients (17.3 percent) were excluded due to poor MRI quality. The researchers found that the incidence of recurrence increased with the amount of scarring, from 15.3 percent recurrence at day 325 with less than 10 percent scarring of the atrial wall to 51.1 percent recurrence for 30 percent or greater scarring.

The authors write that this study demonstrates the feasibility and potential clinical value of using delayed enhancement MRI in the management of patients with AF considered for ablation. "In current practice, criteria for selecting good candidates for AF ablation are limited." They add that the amount of left atrial wall fibrosis estimated by delayed enhancement MRI has the potential to offer a noninvasive and effective method for determining which patients with AF are likely to benefit from [ablation](#) while avoiding procedures in patients likely to have arrhythmia recurrence.

More information: [DOI: 10.1001/jama.2014.3](https://doi.org/10.1001/jama.2014.3)

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