

Magnetic resonance imaging before ablation for atrial fibrosis helps predict success of treatment

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In patients with atrial fibrillation, delayed enhancement magnetic resonance imaging (DE-MRI) performed before ablative treatment can stage the degree of damaged heart tissue (atrial fibrosis) and help predict whether treatment will be successful or not, according to results of Delayed Enhancement - MRI determinant of successful Catheter Ablation of Atrial Fibrillation (DECAAF) trial.

"The DECAAF results show that stage of atrial [fibrosis](#) prior to ablation is a new, powerful, [independent predictor](#) of outcome," said lead investigator Nasir Marrouche, MD, from the CARMA Center at the University of Utah in Salt Lake City, USA.

"By performing this imaging before ablative treatment we can triage patients according to likelihood of [treatment success](#), and avoid ablative procedures in those patients for whom it is unlikely to work. If a patient has late stage 3 or stage 4 fibrosis their chance of being cured is only 30-35% which is really low, but if they're in an early stage their chance of cure is 60-80%," he said.

The DECAAF trial included 260 [atrial fibrillation](#) (AF) patients with atrial fibrosis who were undergoing ablation.

The patients, from 15 centers in USA, Europe and Australia were a mean age of 59 years, and 64.6% of them had paroxysmal AF.

High resolution Delayed Enhancement MRI (DE-MRI) was performed up to 30 days before ablation in all patients to determine the presence and extent of atrial fibrosis, while post-ablation DE-MRI was performed at 90-days follow-up in 177 of the subjects, to determine the extent of residual ablation.

At the 90-day follow-up, recurrence of arrhythmia was noted in 88 of the 260 patients (33.8%) based on Holter monitors and electrocardiograms.

Multivariate analysis revealed two independent predictors of successful ablation or recurrent symptoms were stage of atrial fibrosis before ablation (P

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