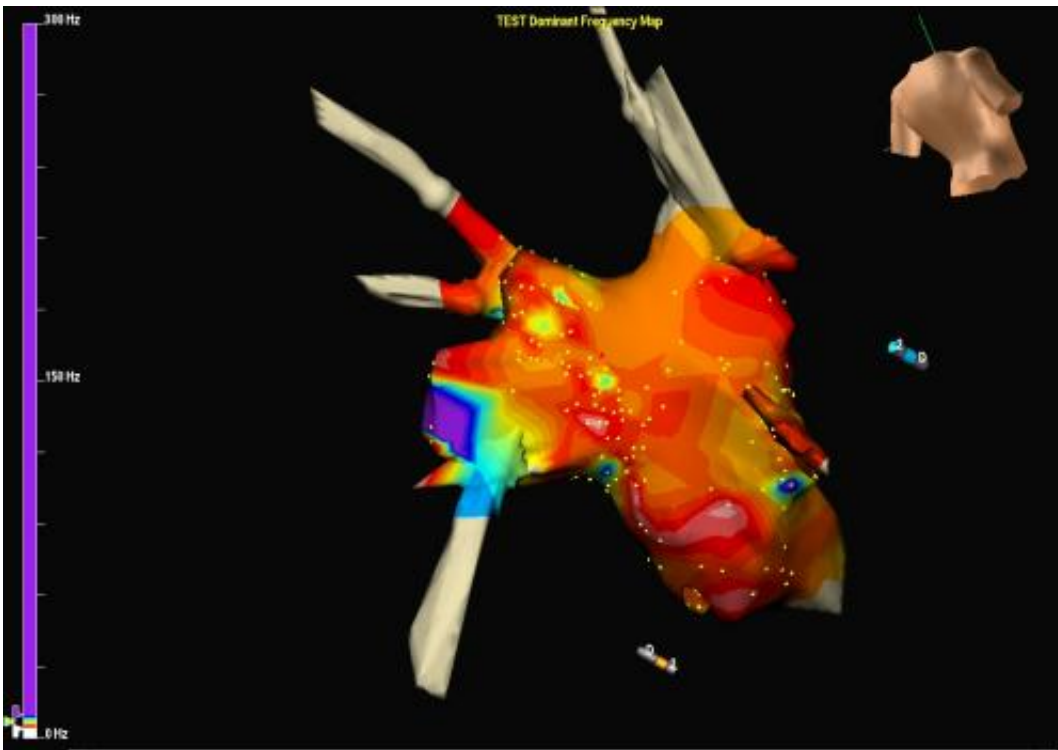


High frequency source ablation effective in treating atrial fibrillation

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Real-time dominant frequency map of the left atrium (posterior view) showing a high frequency site located at the antrum of the left inferior pulmonary vein.
Credit: Felipe Atienza, M.D., Ph.D.

High frequency source ablation is as safe and effective as a more standard ablation treatment for patients with paroxysmal atrial fibrillation, according to a late-breaking clinical trial presented at the American Heart Association's Scientific Sessions 2013.

Ablation is a procedure in which doctors use radiofrequency energy (similar to microwave heat) to destroy the [heart](#) tissue that causes the rhythm problem in order to restore your heart's regular rhythm.

The Radiofrequency Catheter Ablation of Drivers vs. Circumferential Pulmonary Vein Isolation in Patients with Atrial Fibrillation (RADAR-AF) researchers looked at 232 patients with paroxysmal [atrial fibrillation](#) an irregular heartbeat in which the abnormal rhythm comes and goes on its own, or persistent atrial fibrillation in which the abnormal rhythm doesn't return to normal on its own.

Paroxysmal atrial fibrillation patients underwent either standard circumferential pulmonary vein isolation [ablation](#), which electrically isolates the veins that bring blood to the left side of the heart, or high frequency source ablation, a more targeted approach that uses computer mapping to single out abnormal heart tissue.

The paroxysmal atrial fibrillation patients who underwent high frequency source ablation did equally well as those receiving the circumferential pulmonary vein isolation with a freedom from atrial fibrillation (69 percent) one year after treatment. They also experienced fewer major side effects with [high frequency](#) source ablation.

There was no difference in either efficacy or safety in the two groups of persistent atrial fibrillation patients.

"Improved computer systems can analyze the electrical activity of the heart, localize them and through ablation, eliminate those areas faster," said Felipe Atienza, M.D., Ph.D., lead researcher of the study and senior electrophysiologist at Hospital General Universitario, Gregorio Marañón in Madrid, Spain. "This offers a personalized treatment, directed to selectively eliminate the sources causing atrial fibrillation, and is beneficial and safe."

The researchers now plan to try high-density electrocardiograms to identify the areas in the heart causing faulty electrical signals before the intervention to better target treatment.

"Current ablation treatments for atrial fibrillation have reached a 70 percent efficacy ceiling, and more extensive procedures are associated with a higher complication rate," Atienza said. "More advanced computer systems and software programs will enable us to spot the harder-to-reach areas in the heart that are triggering electrical irregularities and correct these abnormalities in less invasive ways."

Provided by American Heart Association

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