

ARRHYTHMIAS

NONINVASIVE
RADIOABLATION FOR VT

A new procedure that combines noninvasive cardiac mapping with noninvasive radioablation shows promise for the treatment of ventricular tachycardia (VT).

“In the short-term, this procedure is safer and faster than current state-of-the-art catheter ablation,” points out the corresponding author of the study, Phillip Cuculich.

Cuculich and colleagues combined electrocardiographic imaging, which enables panoramic, single-beat, noninvasive imaging of the electrical system of the heart, with stereotactic body radiotherapy, a technique used for cancer therapy that enables precise, noninvasive delivery of focused radiation. “This study is a highly unique collaboration between two disparate specialties that rarely interact,” says radiation oncologist and study investigator Clifford Robinson.

Five patients with high-risk, treatment-refractory VT underwent the procedure, which took an average of 14 min. At a median follow-up of 12 months, the treatment led to a marked reduction in VT burden in all patients, with a 99.9% reduction from baseline in VT episodes over the 46 patient-months after the 6-week postablation ‘blinking period’ (when arrhythmias can occur because of ablation-associated inflammation). One patient had a fatal stroke 3 weeks after treatment.

Cuculich *et al.* are now assessing the long-term risks and effects of noninvasive ablation in a prospective clinical trial. “If confirmed in larger trials, entirely noninvasive cardiac ablation could impact the way we approach heart rhythm disorders,” says Cuculich, “but more work is needed before this technique is ready for widespread use”.

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ORIGINAL ARTICLE Cuculich, P.S. *et al.* Noninvasive cardiac radiation for ablation of ventricular tachycardia. *N. Engl. J. Med.* **377**, 2325–2336 (2017)

FURTHER READING Haissaguerre, M. *et al.* Ventricular arrhythmias and the His–Purkinje system. *Nat. Rev. Cardiol.* **13**, 155–166 (2016)