

Novel mapping technique targets gene therapy to hibernating heart muscle

15 November 2016



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Gene therapy to repair damaged heart muscle is most likely to succeed if it can be injected at the site of ischemia where there is viable myocardium with reduced contractile ability, and a new technique that combines imaging and electroanatomical mapping does just that. A study of this novel approach that shows increased blood flow in treated areas in patients with refractory angina is published in *Human Gene Therapy*.

Seppo Ylä-Herttuala, Kuopio University Hospital and University of Eastern Finland (Kuo-pio, Finland), together with coauthors Antti Kivelä, Antti Hedman, and Juha Hartikainen, and Antti Saraste and Juhani Knuuti, from Turku University Hospital, Finland, describe their method for targeted cardiac gene transfer in the article entitled "Intramyocardial Gene Therapy Directed to Hibernating Heart Muscle Using a Combination of Electromechanical Mapping and Positron Emission Tomography."

The researchers use a combination of

electromechanical mapping with a NOGA system and [positron emission tomography](#) (PET) radiotracer perfusion imaging to create 2-dimensional bull's eye maps that guide the injection of the gene therapy into the [heart muscle](#). They target a site that has suffered ischemic damage, but is viable as shown by reduced contractile ability, to achieve the best possible outcome.

"Dr. Ylä-Herttuala's milestone clinical trial results demonstrate how [gene therapy](#) for heart disease can be rendered much more specific," says Editor-in-Chief Terence R. Flotte, MD, Celia and Isaac Haidak Professor of Medical Education and Dean, Provost, and Executive Deputy Chancellor, University of Massachusetts Medical School, Worcester, MA.

More information: Iiro Hassinen et al, Intramyocardial Gene Therapy Directed to Hibernating Heart Muscle Using a Combination of Electromechanical Mapping and Positron Emission Tomography, *Human Gene Therapy* (2016). [DOI: 10.1089/hum.2016.131](https://doi.org/10.1089/hum.2016.131)

Provided by Mary Ann Liebert, Inc

APA citation: Novel mapping technique targets gene therapy to hibernating heart muscle (2016, November 15) retrieved 11 April 2021 from <https://medicalxpress.com/news/2016-11-technique-gene-therapy-hibernating-heart.html>

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