

Fever may trigger heart failure in patients with the genetic disease LQT-2

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The potentially fatal heart disease LQT-2, which is characterized by the prolongation of a specific interval of time (known as the QT interval) in the heart's electrical cycle, is caused by mutations in the HERG gene.

What triggers the changes in the electrical activity in the heart (and therefore in the beating of the heart) has not been completely determined, although loud noises and emotional stress can be triggers.

In a new study, a team of researchers from the Academic Medical Centre, The Netherlands, and the University of Wisconsin, Madison, has revealed that fever can also trigger life-threatening changes in the electrical activity in the heart of patients with LQT-2.

The team, led by Arthur Wilde and Craig January, measured the electrical activity in the heart over time (something that is recorded in an ECG) of two LQT-2 patients with the same HERG mutation (A558P), and found that fever was associated with prolonged QT intervals in these individuals. When this mutation was introduced into a cultured human cell line, the cells exhibited temperature-dependent characteristics, including altered electrical currents across their cell membranes at high temperatures.

The authors therefore conclude that similar changes in electrical currents occur in heart cells at the high temperatures associated with fever and that fever is a potential trigger of the potentially lethal changes in the electrical activity in the heart of patients with LQT-2.

Source: Journal of Clinical Investigation

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