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## Extra Heartbeats Could Predict Heart Failure



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Common extra heartbeats that occur in the ventricles, or premature ventricular contractions (PVCs), could predict heart failure and even death, according to researchers at UC San Francisco. The research is based on more than a decade of investigation of 1,139 participants from the national Cardiovascular Health Study.

"We cannot exclude the possibility that PVCs are an 'epiphenomenon' or some marker of future heart failure," according to senior author Gregory Marcus, MD, MAS, director of clinical research in the UCSF Division of Cardiology. Noting that all study participants did not have previous history of heart failure and had a normal left ventricle by an ultrasound of the heart, Dr. Marcus says "our data would appear to be quite convincing that PVCs represent an important predictor of the disease, causal or not."

He adds: "If indeed there is a causal relationship, this could represent a new approach to preventing heart failure from occurring in the first place."

PVCs disrupt the heart's regular rhythm but usually are no reason for concern or require treatment. Earlier studies of patients presenting for catheter ablation suggest that PVCs are a modifiable risk factor for congestive heart failure (CHF). However, the relationship of PVC frequency, CHF incidents and mortality in the general population is unknown.

CHF occurs when the heart does not pump enough blood to meet the body's demands, resulting in reduced blood flow. Risk factors include obesity, diabetes and hypertension, but up 50 percent of cases have no known cause.

In the current study, Dr. Marcus and colleagues examined Cardiovascular Health Study participants randomly assigned to 24-hour ambulatory electrocardiography monitoring with a normal left ventricular ejection fraction (LVEF) and no CHF history. Participants were followed for new onset congestive heart failure and death.

The Cardiovascular Health Study is a community-based cohort study sponsored by the National Heart, Lung, and Blood Institute. Nearly 6,000 people (ages 65 or older) were recruited between 1989-1993 and underwent background testing. They then were followed with annual clinical visits and semi-annual phone calls for 10 years, followed by just phone calls every six months thereafter.

Among the 1,139 study participants examined by Dr. Marcus' team, a higher frequency of PVCs was associated with LVEF decline, increased CHF incidents and greater mortality.

Since PVCs can be prevented through medical or ablation therapy, this study indicates they may be a modifiable risk factor for CHF and death.

Source and image credit: [University of California, San Francisco \(UCSF\)](http://www.universityofcalifornia.edu/sanfrancisco/ucsf/)

Published on : Wed, 8 Jul 2015