New Therapy that Prevents Heart Failure (w/ Video)

September 1 2009

A CRT-D device is implanted in the chest to prevent heart failure.

(PhysOrg.com) -- Patients who had a cardiac resynchronization device combined with a defibrillator (CRT-D) implanted had a 34 percent reduction in their risk of death or heart failure when compared to patients receiving only an implanted cardiac defibrillator (ICD), according to a landmark study published online today in the *New England Journal of Medicine* and presented today at the European Society of Cardiology Congress (ESC) in Barcelona, Spain. The overall benefit observed from resynchronization therapy was driven by a 41 percent reduction in heart failure. Women who received CRT-D had an "astonishing" 63 percent reduction in their risk of heart failure.

About one million cardiac patients in the United States die each year from either electrical, heart rhythm disorders that result in sudden cardiac death or from mechanical disorders where the heart's pumping ability is impaired (heart failure), according to the study authors.

In 2002, Arthur Moss, M.D., professor of Medicine at the University of Rochester Medical Center, and the MADIT (Multicenter Automatic Defibrillator Implantation Trial) research group showed that an implanted defibrillator, or ICD, reduced the risk of death by 31 percent in cardiac patients as part of the MADIT-II trial. This therapy was soon approved by the U.S. Food and Drug Administration and became part of professional guidelines from the American Heart Association, the American College of Cardiology and the Heart Rhythm Society. Long-term follow-up studies showed, however, that ICDs were so effective at preventing sudden death that patients lived longer and were subsequently at increased risk for heart failure. This created an urgent need to better address both risks in tandem.

Cardiac resynchronization therapy (CRT) is currently approved for treatment only for patients with symptoms of severe heart failure (New York Heart Association [NYHA] class III and IV) in whom it reduces symptoms by improving the mechanical pumping action of the heart. Moss, also principal investigator of the current MADIT-CRT trial, and his team designed MADIT-CRT as follow-up to MADIT-II. The new trial sought to determine if preventive CRT-D therapy, the combination of an ICD with CRT, could reduce the risk of mortality and heart failure in patients with mild cardiac disease and few symptoms (NYHA class I or II).

Over a 4½ year period, 1820 patients from 110 medical centers in the United States, Canada, and Europe were enrolled and followed in MADIT-CRT. The trial was sponsored by Boston Scientific Corp.

through a research grant to the University of Rochester. It is the world's largest randomized study involving NYHA class I and II patients. About 70 percent of the approximately 5.5 million Americans with some form of heart disease, or 3.9 million people, fall into NYHA class I or II.

"The findings from MADIT-CRT show that CRT-D effectively reduces the risk of heart failure," Moss said. "There is a very large population of patients with heart disease whom we believe will benefit from CRT-D therapy."

Prior to 2009, Moss received honoraria from Boston Scientific for talks at scientific programs. He holds no stock in any device company, has never been a member of any corporate speakers' bureau, and since Dec. 1, 2008, has chosen not to accept honoraria from Boston Scientific for any professional activity.

"This is a very important trial," said Richard Page, M.D., president of the Heart Rhythm Society. "Previous studies have shown that the ICD saves lives. This trial demonstrates that in this population, an ICD with biventricular pacing can be expected also to improve clinical outcome as measured by hospitalization for heart failure. I anticipate that these results may improve acceptance of ICD therapy, both by patients and their physicians, in that the patient would not only live longer, but also would live better."

More information: www.americanheart.org/download … acResynchTherapy.pdf

Source: University of Rochester Medical Center (news : web)