MedicalXpress

Cardiac Resynchronization: Race, Age, Geography Matter, Study Shows

August 12 2008

(PhysOrg.com) -- Race, age, and geography appear to play important roles in who receives cardiac resynchronization therapy (CRT), a proven treatment for some patients with heart failure, say researchers at Duke Clinical Research Institute (DCRI).

"We looked at figures nationwide, and we found that use of the therapy was extremely variable," says Dr. Jonathan Piccini, M.D., a cardiologist at Duke University Medical Center and the lead author of the study. "Basically, a lot of people who should be getting the therapy aren't, and some of the people who are getting it may not need it."

The study, appearing in the journal Circulation, showed that only a small percentage of patients with severe heart dysfunction received the device, and those who did were disproportionately younger, white men. Researchers also found that in about 10 percent of the time, doctors who prescribed CRT did not follow published recommended clinical guidelines.

Study leaders say the findings reveal a troubling picture. It has been estimated that anywhere from a third to a half of all patients hospitalized with heart failure could benefit from CRT. Previous studies have shown that when CRT is used with optimal medical treatment, it can dramatically reduce the need for repeated hospitalization and lower the risk of untimely death. Two years ago, the American College of Cardiology/American Heart Association strongly recommended CRT therapy for selected patients with severe heart failure. But until now, it

has not been known if the therapy is being used, or if it is being used appropriately.

To find out, investigators examined the records of nearly 34,000 admissions for heart failure from January 2005 to September 2007 in 228 hospitals enrolled in the American College of Cardiology/ American Heart Association's "Get with the Guidelines" program, a project designed to improve the quality of heart failure care nationwide.

The researchers tracked which patients came into the hospital with CRT in place, and those who had it when they left. They found that the use of the therapy varied significantly, with some hospitals not using it at all, while others hospitals showed up to 23 percent of potentially eligible patients were receiving the treatment.

They also found that blacks were less likely than whites to receive CRT – even though blacks are twice as likely to suffer from heart failure as whites. In addition, researchers discovered that older, sicker patients and those who lived in the Northeast were less likely to receive CRT than were younger patients who lived in other parts of the country.

"Our findings parallel previous studies evaluating adoption of new medical technology in that they show racial disparity in who is receiving the newest therapies," says Piccini. "In contrast to previous studies, however, we didn't find any gender gap in the use of CRT." The study showed that roughly equal numbers of men and women received CRT for the first time during their hospital stay.

Cardiac resynchronization involves implanting a specialized pacemaker in the upper part of the chest and running leads into the heart to correct an electrical conduction problem that allows the two ventricles to beat separately, instead of together. In "resetting" the electrical system, CRT enables the ventricles to pump in tandem again.

Clinical guidelines recommend that CRT be reserved for patients with left ventricular ejection fractions of 35 percent or less. An ejection fraction is a numerical measure reflecting how much blood leaves the ventricle with each heartbeat. But the study found that in about 10 percent of the time, physicians were prescribing CRT for patients who had ejection fractions above 35 percent.

"We will be watching these trends closely," says Adrian Hernandez, M.D., a cardiologist at Duke and senior author of the study. "CRT is an effective therapy for many patients, and this study suggests clinically practice varies greatly compared to what it should be, according to recommended guidelines."

The study was funded by the American Heart Association.

Provided by Duke University