Resynchronization Cuts Heart Failure Risks

BY BRUCE JANCIN

BARCELONA — Cardiac resynchronization therapy reduced the risk of death or hospitalization for heart failure by nearly two-thirds in asymptomatic or mildly symptomatic heart failure patients already on optimal medical therapy at 24 months' follow-up in the randomized, prospective multicenter REVERSE trial.

Moreover, CRT also resulted in across-the-board highly significant improvements in measures of left ventricular structure and function at the 24-month mark in REVERSE (Resynchronization Reverses Remodeling in Systolic Left Ventricular Dysfunction), Dr. Stefano Ghio reported at the annual congress of the European Society of Cardiology.

"I think we can conclude from this new analysis from REVERSE that CRT modifies disease prognosis in mildly symptomatic heart failure patients," said Dr. Ghio of the University of Pavia (Italy).

The REVERSE findings were hailed as a triumph by discussant Dr. John G.F. Cleland, professor and head of the academic unit of cardiology at University of Hull (England). "The results suggest that perhaps the impact of CRT on outcome might be greater if you don't wait until patients have advanced heart failure. I wonder if after seeing these results we shouldn't be preferentially implanting CRT in patients with mild heart failure."

The 24-month follow-up involved 262 REVERSE participants with New York Heart Association class I or II heart failure and a left ventricular ejection fraction of 40% or less in 15 European countries. All had a CRT device implanted, after which 180 were randomized to have the device turned on, while 82 were assigned to have it kept off.

At 24 months, the key combined end point of death or hospitalization for heart failure occurred in 12% of the CRT-on group compared with 24% with CRT-off. The CRT-on group had significant reductions in both components of this end point.

End-systolic volume index decreased

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over time from a baseline 100 to 70 mL/m^2 in the CRT-on group but was unchanged in the CRT-off group. Similarly, the end-diastolic volume index dropped from 133 to 103 mL/m^2 in the CRT-on group but remained stable in controls.

A clinical composite response end point that incorporated quality of life scores, worsening NYHA functional class, heart failure hospitalization, crossover to CRT-on status due to worsening heart failure, and all-cause mortality showed that 54% of the CRT-on group improved and 19% worsened over time, compared with 29% and 34%, respectively, of controls.

Dr. Cleland noted that the 62% relative risk reduction in death or heart failure hospitalization documented in REVERSE was nearly identical to that previously reported in the Multicenter InSync Randomized Clinical Evaluation–Implantable Cardioverter-Defibrillator (MIRACLE-ICD) trial, which enrolled patients with NYHA class II heart failure.

In contrast, the reduction in morbidity and mortality was considerably smaller, albeit still significant, in the Cardiac Resynchronization in Heart Failure (CARE-HF) and Comparison of Medical Therapy, Pacing, and Defibrillation in Chronic Heart Failure (COMPANION) trials, both of which enrolled patients with more advanced heart failure.

The 12-month REVERSE results have previously been reported and published (J. Am. Coll. Cardiol. 2008;52:1834-43). Only the European cohort was followed for 24 months because the U.S. branch of the study was stopped after 1 year.

Dr. Ghio reported having received research grants and consulting fees from Medtronic, which funded REVERSE. At press time, no disclosures were available from Dr. Cleland. ■