Hematology

MID-TERM RESULTS FOLLOWING CARDIAC RESYNCHRONIZATION THERAPY FOR PATIENTS WITH COMPLEX CONGENITAL HEART DISEASE

Poster Contributions
Hall C
Saturday, March 29, 2014, 3:45 p.m.-4:30 p.m.

Session Title: Changing the Beat: CRT, ICD and Other Breakthroughs for Patients with Congenital Heart Disease
Abstract Category: 11. Congenital Heart Disease: Therapy
Presentation Number: 1154-275

Authors: Mohamad Khaled Al-Ahdab, David Roberson, Ira Shetty, Anne Freter, Vivian Cui, Janis Dennis, Frank Zimmerman, Advocate Children's Hospital, Oak Lawn, IL, USA

Background: Cardiac resynchronization therapy (CRT) is a valuable adjunct to treatment of refractory congestive heart failure in adults with wide QRS. Favorable short term outcomes have been reported in patients with complex congenital heart disease (CHD). However, there is limited data on mid-term follow up of those who have undergone CRT.

Methods: Retrospective review of consecutive cases of CRT in pts with complex CHD at a single center. Functional status (NYHA) and echocardiographic findings (ejection fraction, 3D ventricular synchrony parameters) were compared at baseline, acutely after CRT (within 6 months) and at last follow-up.

Results: The study included 17 consecutive pts with CHD who underwent CRT (ages 3-68 yrs, mean 23.5yrs). Diagnosis was single ventricle (5), systemic RV (6), and systemic LV (6). 12 pts (70.5%) had ventricular pacing prior to CRT upgrade. Age at time of CRT was 1-61 yrs (mean 21 yrs) and follow-up after CRT was 1-7.5 yrs (mean 4.7 yrs). Overall acute response to CRT occurred in 10 pts (59%), 5 had improved echo findings and 5 had both improved functional status and echo findings. At mid-term follow-up, 14/17 pt's status remained unchanged (stable) but 3/17 pts had deterioration of function. 2/3 pts [1: Double inlet LV/AV block, 2: Double outlet RV/unbalanced AV canal/Pulmonary arterial (PA) band] had initial significant positive response to CRT with late deterioration at 2-3 yrs. 1/3 pts (L-Transposition of the great arteries/ PA band) had no change with CRT and had progressive deterioration of cardiac function.

Conclusions: This is the first study to report the mid-term outcomes of CRT in pts with CHD. Overall, a positive response to CRT was seen in 59% with the majority having stable functional status and echocardiographic findings at mean 4.7 yrs follow-up. Importantly, 20% of pts (2/10) who had an initial positive response to CRT later developed further decline in function over time. Long-term predictors of mortality and morbidity for those patients who respond positively to CRT remain poorly investigated and further studies are needed to select good long-term responders.