PREDICTING SURVIVAL AMONG PATIENTS UNDERGOING CARDIAC RESYNCHRONIZATION USING A SIMPLE SCORING SYSTEM

ACC Poster Contributions
Georgia World Congress Center, Hall B5
Sunday, March 14, 2010, 3:30 p.m.-4:30 p.m.

Session Title: CRT Optimization and Outcomes
Abstract Category: Myocardial Function/Heart Failure–Clinical Nonpharmacological Treatment
Presentation Number: 1068-59

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Background: Cardiac resynchronization (CRT) improves survival among heart failure (HF) pts in clinical trials, yet predicting survival in higher risk pts using baseline clinical variables would impact clinical care.

Methods: Of 796 HF pts who received CRT, 398 were randomly selected to comprise a derivation cohort (DC). Univariate predictors of survival among 12 baseline variables were identified using Kaplan-Meier analysis. Variables with p<0.2 were entered into a Cox regression model to identify independent predictors of survival. A scoring system was created and validated on the remaining 398 patients (validation cohort, VC). 83 patients with unsuccessful LV lead (ULV) implantation who received an ICD comprised a control group.

Results: DC, VC, and ULV cohorts were similar at baseline. Diabetes (HR 1.5, 1.0-2.2; p=0.05), glomerular filtration rate category (HR 1.9, 1.4-2.5; p<0.001), RBBB (HR 1.7, 1.0-2.8; p=0.04), and pre-CRT inotrope therapy (HR 1.6, 1.2-2.1; p<0.001) independently predicted adverse survival. Survival worsened incrementally with increasing score among DC pts, and this was corroborated in VC pts (Figure). A score of ≥4 among CRT recipients predicted worse survival than ULV patients.

Conclusions: A simple scoring system including diabetes, renal function, RBBB, and prior inotrope therapy provides powerful prognostic information among CRT recipients. A score ≥4 should prompt expeditious consideration of transplantation and may predict no more benefit from CRT than an ICD.