RISK FACTORS FOR APPROPRIATE CARDIOVERTER-DEFIBRILLATOR SHOCKS, INAPPROPRIATE CARDIOVERTER-DEFIBRILLATOR SHOCKS, AND MORTALITY IN 549 PATIENTS WITH HEART FAILURE AND IMPLANTABLE CARDIOVERTER-DEFIBRILLATORS

ACC Poster Contributions
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Authors: Wilbert S. Aronow, Harit Desai, Kaushang Gandhi, Chul Ahn, Sadaf Hussain, Hoang M. Lai, Mala Sharma, William H. Frishman, Martin Cohen, Carmine Sorbera, New York Medical College, Valhalla, NY, University of Texas Southwestern Medical Center at Dallas, Dallas, TX

Background: Risk factors for appropriate implantable cardioverter-defibrillator (ICD) shocks, inappropriate ICD shocks, and mortality needed to be investigated in patients with heart failure (HF) and ICDs.

Methods: We investigated in 549 patients, mean age 74 years, with HF and ICDs risk factors for appropriate and inappropriate ICD shocks and mortality. Variables investigated included age, gender, ischemic cardiomyopathy, ejection fraction, QRS duration, New York Heart Association class, atrial fibrillation (AF) biventricular pacing, right ventricular pacing (RVP), dual chamber pacing, smoking, hypertension, diabetes, dyslipidemia, statins, angiotensin-converting enzyme (ACE) inhibitors or angiotensin receptor blockers (ARBs), beta blockers, digoxin, sotalol, and amiodarone. Mean follow-up was 1243 days.

Results: Appropriate ICD shocks occurred in 163 of 549 patients (30%) and inappropriate shocks in 71 of 549 patients (13%). Of 63 deaths, 28 (44%) had appropriate and 16 (25%) inappropriate ICD shocks. Stepwise logistic regression analysis showed significant independent risk factors for appropriate shocks were smoking (odds ratio = 3.7; 95% CI, 2.4-5.7, p<0.0001) and statins (odds ratio = 0.54; 95% CI, 0.37-0.80, p = 0.002). Significant independent risk factors for inappropriate shocks were AF (odds ratio = 6.2; 95% CI, 3.5-11.2, p<0.0001) and statins (odds ratio = 0.52; 95% CI, 0.30-0.92, p = 0.025). Significant independent risk factors for time to mortality were age (hazard ratio = 1.08 per 1-year increase; 95% CI, 1.04-1.1, p = 0.0002), ACE inhibitors or ARBs (hazard ratio = 0.25; 95% CI, 0.14-0.48, p<0.0001), AF (hazard ratio = 4.1; 95% CI, 2.4-7.1, p <0.0001), RVP (hazard ratio = 3.6; 95% CI, 1.9-7.0, p = 0.0001), digoxin (hazard ratio = 2.9; 95% CI, 1.7-5.0, p = 0.0002), hypertension (hazard ratio = 5.3; 95% CI, 2.8-9.9, p <0.0001), and statins (hazard ratio = 0.32; 95% CI, 0.16-0.63, p = 0.0009).

Conclusions: In patients with HF and ICDs, smoking increased and statins reduced appropriate ICD shocks. AF increased and statins reduced inappropriate ICD shocks. Time to mortality was increased by age, AF, RVP, digoxin, and hypertension and reduced by ACE inhibitors or ARBs and statins.