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CARDIAC FUNCTION AND HEART FAILURE

THRESHOLD CROSSING OF OPTIVOL®-IMPEDANCE IDENTIFIES PATIENTS WITH SIGNIFICANT LONG-TERM MORTALITY RISK

ACC Oral Contributions
Ernest N. Morial Convention Center, Room 243
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Session Title: Device-Based Management in Heart Failure
Abstract Category: 21. Myocardial Function/Heart Failure–Clinical Pharmacological Treatment
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Background: Threshold crossings of impedance trends detected by implanted devices have been associated with clinically-relevant heart failure events, but their long-term prognosis has not been demonstrated.

Methods: We reviewed 21,217 patients with OptiVol®-enhanced implanted devices that were continuously monitored remotely in the de-identified Medtronic CareLink® Discovery Hub (>6months) with cross-referenced mortality data from SSDI up to 4/10 (mean age 68±12 years, 75% male, monitored for 19±9 months, 51% CRT-D). Patients were separated in two groups: those with impedance crossings within the initial 6 months (9,340 pts) and those without. Survival (adjusted for age and gender) was evaluated after this initial 6 month observation period.

Results: Patients who experienced threshold crossing within the initial 6 months of monitoring had a 2.15-fold increased long-term mortality risk (95% confidence interval 1.95-2.38, p<0.0001). Such increased mortality risk remains significant when analyzed within the following subgroups: only CRT-D patients (HR 2.23, p<0.0001), only patients without defibrillator shock (HR 2.10, p<0.0001), only patients without device-detected atrial fibrillation (HR 2.04, p<0.0001) during the initial 6 months of monitoring.

Conclusions: Threshold crossing of impedance trends detected by implanted devices is associated with increased mortality risk. Further studies are warranted to better approach and manage this high-risk population.