**Increased Effective Pacing Is Associated with Improved Survival in Cardiac Resynchronization Therapy Patients**

April Bond  
Mark Silver  
Edward Schloss  
Jagmeet Singh  
Brett Atwater  
Yong-Mei Cha  
Eugene Chung  
David O’Donnell  
Maurizio Lunati  
Shufeng Liu  
Thomas Xie

**Introduction**: Higher percentages of ventricular pacing are known to enhance the clinical benefit of cardiac resynchronization therapy (CRT). Conventional device-reported ventricular pacing reports on pulse delivered rather than actual ventricular capture. A novel CRT diagnostic, EffectivCRT, assesses left ventricular capture after each pace to accurately quantify the percentage of effective ventricular pacing (%eCRT). The objective is to evaluate the association between %eCRT and clinical outcomes in a real-world Heart Failure (HF) patient population.

**Methods**: The Personalized CRT Study is a multi-center, single arm prospective observational study of real-world HF patients with CRT devices. Enrolled patients with the EffectivCRT diagnostic were included in this analysis, and their lifetime averages of %eCRT were obtained from device data. The clinical outcomes of the patients with %eCRT \(\geq 95\) were compared to the patients with %eCRT < 95.

**Result**: A total of 1207 patients (71% male, average age 70.1 ± 10.7 years) were included in this analysis, with an average follow-up duration of 8.7 ± 6.6 months. The group of patients with \(\geq 95\) %eCRT (n=822) had a 54% relative reduction in mortality over the group with <95 %eCRT (n=385) (hazard ratio 0.46, p=0.004, Figure 1). The patient group with \(\geq 95\) %eCRT also had significantly decreased risk of HF related hospitalizations (hazard ratio 0.47, p=0.014) and lower probability of having atrial fibrillation (AF) burden \(\geq 5.5\) hours in any day (hazard ratio 0.66, p<0.001).

**Conclusion**: In a real-world cohort of HF patients, \(\geq 95\) %eCRT was associated with reduced mortality, less HF hospitalizations, and lower probability of having AF burden \(\geq 5.5\) hours in any day.