Heart rate (HR) and heart rate variability (HRV) may be indicators of prognosis in CHF patients. Decreased mean 24 hour HR may indicate increased cardiac efficiency. Reduced standard deviation measured over normal intervals (SDANN Index) has been shown to be associated with left ventricular (LV) dysfunction and increased mortality. Our goal was to assess whether bi-ventricular (BV) or (LV) pacing therapy can change HR and HRV in CHF patients. Methods: 24-Hour ECG data was collected in 26 PATH-CHF patients at 4 time points during a period of 12 weeks where all measurements were available for 10 of these patients: before implant, at the end of 4 weeks of BV or LV pacing (4 Wk), at the end of 4 weeks of no pacing (8 Wk) and at the end of 4 weeks of BV or LV (12 Wk). At implant, the mean age and NYHA class was 66.5 years and 3.1 respectively. ECG data was processed to obtain normal R-R intervals and SDANN Index. At each point, the minimum 24-hour HR, mean 24 hour HR and SDANN Index were calculated. Results: At 12 weeks, both minimum and mean HR reduced significantly by 7 bpm (P<0.05). Compared to preimplant, SDANN Index increased by 50 ms at 12 weeks (P<0.05).

CONCLUSIONS: Pacing therapy significantly reduces HR and increases HRV. Such improvement may translate into better patient prognosis.