**Introduction**: Cardiac resynchronization therapy (CRT) is the current standard of care for patients with refractory heart failure and ventricular dyssynchrony. However, approximately 30% of patients may not benefit from CRT, despite meeting criteria for implantation.

**Methods**: A total of 512 patients with CRT between January 2010 and December 2015 were retrospectively enrolled and categorized into 2 groups based on serum HDL-C level (HDL-C ≥1.0mmol/L, <1.0mmol/L). After the follow-up, re-hospitalization due to worsening heart failure (HF) or all-cause mortality (including heart transplantation) was analyzed using Kaplan-Meier curves and log-rank test. Serum HDL-C level was evaluated in Cox proportional-hazards regression models as an independent prognostic factor.

**Result**: There were 267 (52.1%) patients with lower HDL-C which had lower cholesterol, proportion prescribed with spironolactone, had higher body mass index, higher proportion of hypertension, diabetes, high-sensitivity C reactive protein, and had lower serum Cholesterol. During a median follow-up period of 36.1±26.0 months, 95 (19.3%) patients died, 7 (1.4%) underwent heart transplantation and 137 (27.8%) had at least one HF readmission. Log-rank test analyses demonstrated that lower HDL-C was associated with a significantly higher HF re-hospitalization ($\chi^2 = 4.876, P = 0.027$) and all-cause mortality ($\chi^2 = 4.267, P = 0.039$). Cox analysis showed that lower HDL-C was the independent risk factor for HF re-hospitalization (hazard ratio $[HR] = 0.301$, 95% confidence interval $[CI]: 0.150$-$0.604$, $P = 0.001$) and all-cause mortality ($HR = 0.193$, 95% $[CI]: 0.080$-$0.470$, $P = 0.006$).

**Conclusion**: In CRT patients, baseline serum HDL-C level was associated with clinical condition. HDL-C level was the independent risk factor for HF re-hospitalization and all-cause mortality.