Abstract: 6131

Association between hospital care quality and readmission among Japanese patients with heart failure.

From JROAD-DPC study

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Background: Measuring the process of care has become a widely used practice to improve a quality of care. Recently, some studies have demonstrated poor to no correlation between 30-day readmission rates and quality of care for heart failure (HF) among hospitalized HF patients. However, the investigation about relationships of care quality for HF and 1 year outcome is limited.

Purpose: To investigate the relationship between quality of care in each hospitals and readmission among HF patients in Japan.

Methods: From Japanese Registry of All cardiac and vascular diseases (JROAD-DPC) database in 2014, 84,325 HF patients hospitalized to 741 certificated hospitals by Japanese Circulation Society were analyzed. A primary endpoint was readmission for HF in one year. Five performance measures were defined as prescription rate of angiotensin-converting enzyme inhibitor/angiotensin receptor blocker (ACEI/ARB), prescription rate of beta blocker and prescription rate of spironolactone, measurement rate of echocardiography and measurement rate of B-type natriuretic peptide (BNP) during hospitalization. For each of the five measures, a composite score was created by giving points ranging from 1 to 4 from the lower quartile of rates, with the score ranging from 5 to 20 points. Hazard ratios (HR) indicating the effects of the performance measures were estimated using Cox proportional hazard models. Covariates included age, gender, Charson score, and NYHA class.

Results: In Japanese HF patients (age; 78.1 years old, man 52%), the HF readmission rate in one year was 14,520 (17.2%). The readmission rate decreased with higher quartiles of prescription rate in each medications and performance rates. The highest quartile of each measurements was significantly lower risk for readmission compared to the lowest quartile (ACE/ARB, adjusted HR 0.87 [95% CI, 0.83–0.91], p<0.001; beta-blocker, 0.83 [0.79–0.88], p<0.001; spironolactone, 0.88 [0.83–0.92], p<0.001; echocardiography, 0.90 [0.86–0.94], p<0.001; BNP, 0.92 [0.87–0.96], p<0.001). Kaplan-Meier curves showed that readmission rates were better among higher composite score, compared to lower composite score (Log-rank test=p<0.001). (Figure) Higher composite scores were associated with statistically significant risk reduction of 23% for HF readmission (HR 0.77, 95% CI [0.73–0.81], p<0.001).

Conclusion: The hospital performance measures were associated with a significant risk reduction of readmission in Japanese patients with HF.

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Figure 1

Figure. Kaplan-Meier curves according to 4 groups divided by composite score based on care quality for heart failure.