A decrease in tricuspid regurgitation pressure gradient during follow-up in patients with heart failure

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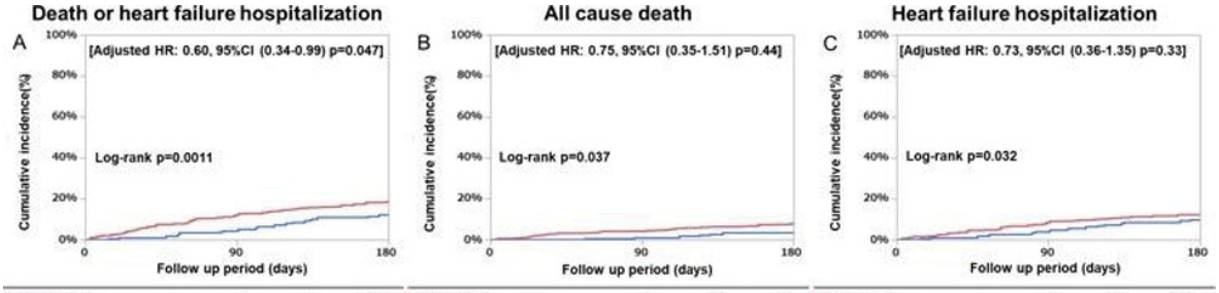
Objective: This study aimed to investigate the prognostic impact of the decrease in tricuspid regurgitation pressure gradient (TRPG) at 6-month follow-up in patients after discharge with heart failure (HF).

Background: No previous study has reported the association between TRPG decrease during follow-up and clinical outcomes in HF.

Methods: Among 748 patients with 6-months follow-up echocardiography after discharge from the acute decompensated heart failure in 19 centers in Japan, we analyzed 721 patients with available TRPG data and divided into two groups: the decrease in TRPG group (N=179) and no decrease in TRPG group (N=542). We defined the decrease in TRPG as >10mmHg decrease compared in the initial hospitalization. The primary outcome measure was a composite of all cause deaths and hospitalization due to HF.

Results: The patients in the decrease in TRPG group had a lower prevalence of hypertension, dyslipidemia, atrial fibrillation, and a reduced EF, higher levels of blood albumin and lower levels of sodium than those in no decrease in TRPG group. The median follow-up duration after the follow up echocardiography was 302 (inter quartile range: 206–490), with a 90.9% follow up rate at 6-month. The cumulative 6-month incidence of the primary outcome measure was significantly lower in the decrease in TRPG group than in no decrease in TRPG group (12.2% vs. 18.9%, P=0.0011). After adjusting confounders, the excess risk of the decrease in TRPG relative to no decrease in TRPG for the primary outcome measure remained significant (HR: 0.60, 95% CI 0.34–0.99). There were no significant interactions between the subgroup factors and the effect of the decrease in TRPG for primary outcomes.

Conclusions: HF patients with the decrease in TRPG at 6-month after discharge had a lower risk of clinical outcome than those without decrease in TRPG.



Interval (Years)	0	90	180
No decrease in TRPG			
N of patients with at least 1 event		65	100
N of patients at risk	542	474	405
Cumulative incidence		12.1%	18.7%
Decrease in TRPG			
N of patients with at least 1 event		8	21
N of patients at risk	179	167	141
Cumulative incidence		4.6%	12.2%

Interval (Years)	0	90	180
No decrease in TRPG			
N of patients with at least 1 event		24	42
N of patients at risk	542	513	460
Cumulative incidence		4.4%	7.9%
Decrease in TRPG			
N of patients with at least 1 event		2	6
N of patients at risk	179	173	153
Cumulative incidence		1.1%	3.5%

Interval (Years)	0	90	180
No decrease in TRPG			
N of patients with at least 1 event		44	64
N of patients at risk	542	474	405
Cumulative incidence		8.4%	12.4%
Decrease in TRPG			
N of patients with at least 1 event		7	17
N of patients at risk	179	167	141
Cumulative incidence		4.0%	9.9%