Left atrial strain and outcome in heart failure with preserved ejection fraction

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Background: Left atrial (LA) function is impaired in heart failure with preserved ejection fraction (HFpEF). However, the association between LA longitudinal strain and heart failure (HF) events in patients with HFpEF is still unknown. We evaluated whether LA strain measurements would be useful to predict hospitalizations for worsening HF in this study.

Methods: This study included 121 patients (Male 73, Female 48) with HFpEF who had echocardiogram at our institute (Age = 76 ± 14y, Left ventricular ejection fraction; LVEF = 63 ± 8%). Patients with atrial fibrillation were excluded. LA longitudinal strain was measured by speckle-tracking echocardiography, using TOMTEC imaging system. The endpoints were hospitalizations for worsening HF.

Results: During follow-up period of 319 ± 269 days, 33 patients (27%) experienced hospitalizations for worsening HF. LA strain was markedly lower in patients with HF events at 11.3 ± 5.6, whereas LA strain was higher at 20.3 ± 10.1 in patients without HF events. Kaplan-Meier analysis demonstrated a significant separation of survival curves stratified by median value of LA strain (Figure).

Conclusions: LA dysfunction in HFpEF is associated with a higher risk of HF hospitalization, and LA strain measurements would be useful to predict HF events.

Abstract Figure