Abstract: P1526

Pre-dialysis left atrial function assessed by two-dimensional speckle tracking echocardiography as a predictor of upcoming heart failure in hemodialysis patients

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Topic(s):
Renal Failure and Cardiovascular Disease

Citation:
Background: Left atrial global longitudinal strain (LA GLS) by 2-dimensional speckle tracking echocardiography is a useful tool to assess LA function and left ventricular (LV) diastolic function. The authors assessed prognostic value of LA GLS, and other diastolic functional parameters in patients undergoing hemodialysis.

Methods: A total of 78 (49 male) patients undergoing hemodialysis who checked echocardiography due to heart failure (HF) symptoms were included for this analysis. Echocardiography was performed at the same day of, and before hemodialysis session. Besides conventional echocardiographic measurements, GLS of the LA and the LV were checked and compared. Incidence of rehospitalization due to HF symptoms during mean follow up duration of 381.4 ± 197.5 days was investigated and echocardiographic parameters were compared between patients who experienced rehospitalization and who did not.

Results: 16 (20.1%) patients experienced rehospitalization due to HF. HF rehospitalization group had significantly low baseline LV ejection fraction (55.7 ± 7.2 vs. 61.3 ± 7.1%, p=0.006) and LV GLS (14.7 ± 3.4 vs. 18.2 ± 3.9%, p=0.002), while LV geometry (LV end-diastolic volume index and LV wall thickness) did not show significant differences. In HF rehospitalization group, baseline LA function and diastolic function were significantly impaired as reflected by LA GLS (18.8 ± 2.6 vs. 23.8 ± 3.6%, p<0.001), E/E’ ratio (20.8 ± 3.3 vs. 15.8 ± 4.6%, p<0.001), and right ventricular systolic pressure (61.4 ± 9.6 vs. 53.4 ± 12.8%, p=0.022). LA end-systolic volume index was not significantly different between the 2 groups. Among various echocardiographic parameters, receiver operation characteristic curve analysis revealed that LA GLS had the strongest power (cutoff value 20.6%, sensitivity 0.813 and specificity 0.790, area under curve 0.849) in prediction of future rehospitalization due to HF.

Conclusions: The present study demonstrated that functional changes of the LA as measured by LA GLS before hemodialysis session can be used as an echocardiographic parameter to predict future rehospitalization due to HF. Further studies are required to evaluate prognostic value of LA function in predicting other cardiovascular events in hemodialysis patients.
Abstract:

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Predialysis left atrial function assessed by two-dimensional speckle tracking echocardiography as a predictor of upcoming heart failure in hemodialysis patients

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Sensitivity

1-Specificity