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투석 환자에서 심혈관 질환의 예후 인자로서 이완기 심기능 장애의 의의

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류한작, 한재현, 권영은, 김영리, 박경숙, 이미정, 오형중, 박정탁, 한승혁, 유태현, 강신욱

Isolated Diastolic Dysfunction is an Independent Predictor of Cardiovascular Events in Incident Dialysis Patients

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Background: Diastolic heart failure (HF) is associated with cardiovascular (CV) morbidity and mortality in the general population as well as in patients with end-stage renal disease (ESRD). The co-occurrence of diastolic heart failure with systolic dysfunction is common among ESRD patients due to recurrent volume overload and pre-existing cardiovascular disease. However, it is unclear whether diastolic heart failure per se is associated with poor CV outcome in this population. Therefore, this study evaluated the impact of isolated diastolic dysfunction with preserved systolic function on CV outcome in incident dialysis patients.

Methods: This prospective observational cohort study investigated the clinical consequences of diastolic dysfunction and the predictive power of echocardiographic diastolic parameters CV events in 194 incident ESRD patients with normal or near normal systolic function, who started dialysis between July 2008 and August 2012. Preserved systolic function was defined as left ventricular (LV) ejection fraction more than 50%.

Results: The mean age of the patients was 57.9 years, and 114 patients (58.8%) were male. During a mean follow-up duration of 27.2 months, CV events occurred in 57 patients (29.4%). Compared to the CV event-free group, patients with CV events had significantly larger LV mass index, higher ratio of early mitral flow velocity (E) to early mitral annulus velocity (E') (E/E'), larger left atrial volume index (LAVI), and higher right ventricular systolic pressure. In multivariate Cox proportional hazard analysis, severe diastolic dysfunction (E/E' more than 15) and severely enlarged LA volume (LAVI more than 32 mL/m²) were independent risk factors for CV events [E/E'>15: hazard ratio (HR)=5.40, 95% confidence interval (CI)=2.73-10.70, p<0.001; LAVI>32 mL/m²: HR=5.56, 95% CI=2.28-13.59, p<0.001]. When divided into four groups according to E/E' and LAVI, patients with both E/E'>15 and LAVI>32 mL/m² had the worst CV outcome (log rank test, p<0.001).

Conclusion: Isolated diastolic dysfunction on echocardiography, even in patients with preserved LV systolic function, is associated with poor cardiovascular outcome.

Key Words: 이완기 심기능 장애, 심혈관 질환, 투석

Diastolic dysfunction, Cardiovascular event, Dialysis