

복막투석 환자에서 사망을 예측인자로서의 좌심방 용적의 역할

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Left Atrial Volume is an Independent Predictor of Mortality in CAPD

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Background: Echocardiography is an established technique to estimate the risk for cardiovascular complications in patients with end stage renal disease (ESRD). An enlarged left atrium (LA) has recently emerged as a marker of adverse cardiovascular outcomes in various pathologic conditions. However, there have been few studies to evaluate its prognostic value in patients with ESRD, particularly those receiving continuous ambulatory peritoneal dialysis (CAPD).

Methods: We conducted an observational cohort study to investigate whether enlarged LA can predict patient outcome in 216 patients with CAPD. All patients underwent echocardiography at the initiation of PD. Study outcomes were all-cause and cardiovascular mortality.

Results: Increased LA volume index (LAVI > 32 ml/m²) was observed in 99 (45.8%) of the CAPD patients. Compared to patients with LAVI ≤ 32 ml/m², those with LAVI > 32 ml/m² were older (55.3 ± 13.9 vs. 59.8 ± 11.7 years, $p=0.011$) and had higher systolic blood pressure (135.7 ± 16.9 vs. 145.6 ± 18.9 mmHg, $p<0.001$). During the follow-up (26.3 \pm 18.6 months), 20 patients (9.3%) died. Kaplan-Meier analysis revealed that the 5-year survival rate was significantly lower in patients with LAVI > 32 ml/m² than those with LAVI ≤ 32 ml/m² (69% vs. 82%, $p=0.024$). In addition, patients with left ventricular ejection fraction $< 55\%$ (vs. $\geq 55\%$, $p=0.018$), right ventricular pressure > 35 mmHg (vs. ≤ 35 mmHg, $p=0.022$), and ratio of early mitral inflow velocity to peak mitral annulus velocity (E/E' ratio) > 15 (vs. ≤ 15 , $p=0.014$) had higher mortality. In multivariate analyses adjusted for echocardiographic parameters and clinical and laboratory data, increased LAVI was an independent predictor of all-cause mortality [hazard ratio (HR) 1.05, 95% confidence interval (CI) 1.01–1.10, $p=0.03$] and cardiovascular mortality (HR 1.08, 95% CI 1.02–1.14, $p=0.006$). Furthermore, increased LAVI provided the highest predictive value for all-cause mortality [area under the ROC curve (AUC)=0.766, $p<0.001$] and cardiovascular mortality (AUC=0.836, $p<0.001$) among the measured echocardiographic parameters.

Conclusion: We showed that increased LAVI predicted adverse outcomes better than other echocardiographic parameters in patients with CAPD. Our finding suggests that measurement of LAVI may be of help in risk stratification and providing therapeutic implications in the management of ESRD patients.

Key Words: 좌심방 용적, 복막투석, 심초음파
LAVI, CAPD, Echocardiography