

혈액투석 환자에서 erythropoietin 저항지수와 좌심실근지수 및 좌심실 기능과 심혈관계 합병증과의 관계

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Relationship between Erythropoietin Resistance Index and Left Ventricular Mass and Function and Cardiovascular Events in Patients on Chronic Hemodialysis

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Background: The response to EPO treatment varies considerably in individual patients on chronic hemodialysis. The erythropoietin resistance index (ERI) has been considered useful to assess the EPO resistance and can be easily calculated in the clinic. The aim of this study was to investigate the association between ERI and left ventricular mass (LVM) and function and to determine whether ERI was associated with cardiovascular events in patients on hemodialysis.

Methods: This study was designed prospectively. Clinical, laboratory, and echocardiographic variables were assessed in 72 patients on hemodialysis. The ERI was determined as the weekly weight-adjusted dose of EPO (U/kg/week) divided by hemoglobin concentration (g/dl). Patients were divided into three groups by tertiles of ERI.

Results: Patients with higher tertiles of ERI had a higher LVM index and lower LV ejection fraction compared to those with lower tertiles of ERI ($p=0.019$ and $p=0.030$, respectively). The median follow-up period was 53 months. The Kaplan-Meier plot showed increased frequency of cardiovascular events in patients with higher tertiles of ERI, compared with those with lower tertiles of ERI ($p=0.011$, log-rank test). The multivariate Cox proportional hazard models showed that the ERI was the significant independent predictor of cardiovascular events (HR 3.00, 95% CI, 1.04-8.62, $p=0.042$).

Conclusions: Our data show that ERI were related with LVM index, LV systolic function and cardiovascular events in patients with hemodialysis. By monitoring of ERI, early identification of the EPO resistance may be helpful to predict the cardiovascular risk in hemodialysis patients.

Key Words: Erythropoietin, 혈액투석, 좌심실기능
Erythropoietin, Hemodialysis, Left ventricular function