S-E3

혈액투석 환자에서 동정맥루 기능부전의 예측인자로써 평균혈소판용적의 의의

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김수진, 오지은, 송영림, 김성균, 김형직, 구자룡, 윤종우, 노정우

Mean Platelet Volume as a Predictor for Vascular Access Failure in Chronic Hemodialysis Patients

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Background: Mean platelet volume (MPV), as a marker of platelet activation, has been shown to be related to coronary artery disease and mortality after myocardial infarction. However, the effects of MPV on vascular access failure in hemodialysis (HD) patients is not known.

Methods: 163 chronic HD patients (age 57.6±12.0 years, male 48.5%, diabetes 53.4%, mean dialysis duration 50.1± 52.1 months) were enrolled. After baseline evaluation, all patients were monitored continuously for the development of vascular access stenosis and thrombosis.

Results: MPV was 9.15±0.05 fl (range 7.81 to 11.23). Patients were grouped according to half-tile values of MPV (9.08 fl) at baseline. Patients with higher MPV levels (n=82) had more experienced vascular access thrombosis in the past (p=0.030) and exhibited lower levels of platelet count (p=0.002), albumin (p=0.009), total cholesterol (p= 0.002) and LDL cholesterol (p=0.010). During the follow-up period of 34 months, a total of 80 vascular access failure (stenosis, n=60; thrombosis, n=20) occurred. The Kaplan-Meier curve showed significant difference between two groups in the cumulative events of vascular access failure (30.8% vs 48.8%; log-rank test, p=0.018), and hemodialysis access stenosis (27.2% vs 46.3%; log-rank test, p=0.010), but not of vascular access thrombosis (9.9% vs 14.6%; log-rank test, p=0.358). In multivariate Cox analysis, MPV was an independent risk factor for vascular access failure (hazard ratio (HR), 2.79; 95% confidence interval (CI), 1.55 to 5.05; p=0.001) and hemodialysis access stenosis (HR, 2.41; 95% CI, 1.29 to 4.50; p=0.006).

Conclusion: High MPV was associated with increased risk of vascular access failure, including hemodialysis vascular access stenosis. MPV may be a potential marker for prediction of vascular access survival in chronic hemodialysis patients.

Key Words: 혈액투석, 동정맥루 기능부전, 평균혈소판용적
Hemodialysis, Vascular access failure, Mean platelet volume