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복막투석환자에서 내피세포기능부전이 심혈관 질환의 발생에 미치는 효과

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박경숙, 이미정, 김영리, 류한작, 권영은, 윤창연, 이정은
오형중, 박정탁, 최훈영, 한승혁, 강신욱, 유태현

Endothelial Dysfunction Assessed by Flow-mediated Dilatation is associated with Major Adverse Cardiovascular Events in Peritoneal Dialysis Patients

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Background: Endothelial dysfunction is implicated in increased cardiovascular risk in the non-dialyzed population. Although patients on dialysis are at a great risk of cardiovascular disease, the prognostic impact of endothelial dysfunction on cardiovascular outcome has not been fully investigated in these patients.

Methods: We prospectively determined endothelial function by brachial artery endothelium-dependent vasodilation (flow-mediated dilatation; FMD) in 143 non-diabetic peritoneal dialysis (PD) patients and 32 controls. Primary outcome was major adverse cardiac and cerebrovascular events (MACCEs).

Results. Brachial FMD was significantly lower in PD patients than in controls [2.9 (1.3-4.7)% vs. 6.2 (5.4-8.3)%, $p < 0.001$]. During a mean follow-up of 42 months, primary outcome was observed in 25 patients (17.5%). When patients were dichotomized by the median value of FMD (2.9%), incidence rates of MACCEs were significantly higher in the group with lower FMD compared to higher FMD (7.2 vs. 3.0 per 100 person-years, $p=0.03$). In multivariate Cox analysis, low FMD ($\leq 2.9\%$) was a significant independent predictor of MACCEs (hazard ratio=2.73, 95% confidence interval: 1.03-7.22, $p=0.04$). Furthermore, multivariate fractional polynomial analysis showed that the risk of MACCE decreased steadily with higher FMD values.

Conclusions: Impaired brachial FMD was a significant independent predictor of MACCEs in PD patients. Estimating endothelial dysfunction by brachial FMD could be useful for stratifying cardiovascular risk in these patients.

Key Words: 심혈관 부작용, 복막투석, 혈류매개 혈관확장반응
Cardiovascular event, PD, Flow mediated dilatation