

혈액투석 환자에서 요골동맥의 미세 석회화가 심혈관 사망률에 미치는 영향

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The Impact of Vascular Micro-Calcification of Radial Artery on Cardiovascular Mortality in Hemodialysis Patients

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Background: Vascular gross calcification by imaging study is common in hemodialysis (HD) patients, and it is a significant predictor for cardiovascular mortality in HD patients. But vascular micro-calcification (VMC) by pathologic study has been rarely reported. Recently, we have reported that VMC is associated with vascular access failure as well as aortic stiffness (2010 ASN). The aim of this study was to determine the impact of VMC of radial artery on cardiovascular mortality in uremic patients receiving vascular access operation.

Methods: One-hundred forty nine HD patients (Mean age; 59.0±13.9 years, Male/Female; 86/63, Percent of diabetes mellitus; 65.8%) receiving vascular access operation were included in this study. During the operation, we obtained partial arterial specimen and performed pathologic examination by von Kossa stain to identify VMC. We investigated cardiovascular mortality for at least 1 year after the operation. Finally we compared clinical and laboratory findings, and cardiovascular mortality between the patients with VMC and those without VMC.

Results: Mean duration of follow-up was 37.8±34.5 months and the incidence of VCM was 38.8% (n=57). Diabetes (OR 4.138, 95% CI 1.631-11.830, p=0.002) and peripheral artery disease (OR 9.958, 95% CI 1.021-1339.97, p=0.048) were independent predictors for VCM. Serum parameters were not significantly related to VMC. During the period of flow up, there were 27 cardiovascular deaths. Kaplan-Meier analysis showed an increased cardiovascular mortality risk (HR 2.613, 95% CI 1.196-5.711, p-value= 0.016) in VMC group, and Cox regression analysis confirmed that VMC was an independent predictor for cardiovascular mortality (HR 2.352, 95% CI 1.087-5.088, p-value=0.030).

Conclusion: This study demonstrates that VMC is a strong risk factor of cardiovascular mortality in HD patients.

Key Words: 혈액투석, 석회화, 사망률

Hemodialysis, Calcification, Mortality