

복막투석 환자에서의 대동맥 석회화 진행과 사망률에 관한 연구

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이미정, 신동호, 오형중, 고광일, 구향모, 김찬호, 김형래
한재현, 박정탁, 한승혁, 유태현, 최규현, 강신욱

Progression of Aortic arch Calcification Over 1 Year is an Independent Predictor of Mortality in Incident Peritoneal Dialysis Patients

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Backgrounds: Vascular calcification has been recognized as an important predictor of cardiovascular morbidity and mortality in dialysis patients. Moreover, previous studies have reported that the progression of aortic calcification was significantly associated with increase in cardiovascular disease and mortality. However, definition of progression was inconsistent, and studies for peritoneal dialysis (PD) patients were limited. Therefore, the aim of this study was to investigate whether progression of aortic arch calcification (AoAC) on plain chest radiography is an independent predictor for mortality in PD patients.

Methods: We undertook a prospective observational study for 415 incident PD patients in Yonsei University Health System from Jan 2005 to Aug 2011. Chest radiography was examined for the presence of AoAC at baseline and 12 months during follow-up.

Results: Of 415 patients, 106 patients (25.6%) had AoAC with the means of $18.1 \pm 11.2\%$ at baseline. The presence of baseline AoAC was an independent predictor of all-cause [Hazard ratio (HR)=2.181, 95% CI: 1.336–3.561, $p=0.002$] and cardiovascular mortality (HR=3.582, 95% CI: 1.577–8.132, $p=0.002$). Among 363 patients who performed the second chest radiography, 87 patients (23.9%) had baseline AoAC. The AoAC progression was developed more in the group with AoAC at baseline, compared with the group without AoAC [56 patients (64.3%) vs. 15 (5.4%), $p < 0.001$]. In addition, high sensitivity-C reactive protein levels were significantly associated with AoAC progression in both subgroups. Multivariate Cox proportional hazard analyses revealed that the progression of AoAC was an independent predictor of all-cause (HR: 2.491, 95% CI: 1.115–5.561, $p=0.026$) and cardiovascular mortality (HR: 3.451, 95% CI: 1.044–11.401, $p=0.042$) in the group with AoAC at baseline. Furthermore, progression of AoAC was a significant risk factor for all-cause mortality (HR: 3.188, 95% CI: 1.011–10.058, $p=0.048$) in the group without AoAC at baseline.

Conclusions: Baseline AoAC and progression of AoAC on chest radiography were independent prognostic factors in incident PD patients for all-cause and cardiovascular mortality. Therefore, serial evaluation of AoAC by chest radiography may be useful to predict the mortality-risk in the PD patients.

Key Words: 대동맥석회화, 사망률, 복막투석

Aortic calcification, Mortality, Peritoneal dialysis