

만성신장병에서 관상동맥CT촬영으로 발견된 관상동맥협착증의 위치와 칼슘침착과의 관련성 연구

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Association between Calcification and Location of Coronary Artery Stenosis Detected by Coronary Computed Tomography Angiography in Patients with Chronic Kidney Disease

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Purpose: Vascular calcification is common in chronic kidney disease (CKD), and contributes to increased cardiovascular risk. It has reported that pathologic mechanism could be various in calcification of the vascular tree. We evaluated renal function and coronary artery calcium scores according to the location of coronary artery stenosis in CKD patients.

Methods: We enrolled 224 CKD patients who underwent 64-slice multidetector row computed tomography angiography, and had estimated glomerular filtration rates (eGFR) over 40 ml/min/1.73m². Subjects were categorized into 3 groups; patients with no stenosis (NS), patients with proximal stenosis (PS), and patients with distal or diffuse stenosis (DS).

Results: Forty-one (18%) patients had significant (>50%) diameter stenosis (17 in PS group vs. 24 in DS group). PS group had lower renal function and higher proportion of proteinuria than DS or NS group (eGFR: 69.9±16.5 in PS vs. 83.0±18.9 in DS vs. 83.1±18.1 mL/min/1.73m² in NS, p=0.016; proteinuria: 21.4% in PS vs. 9.5% in DS vs. 2.9%, p=0.007). In contrast, DS group had higher levels of coronary artery calcium score (CACS) than PS or NS group (911±423 vs. 328±100 in PS vs. 70.1±17.2 in NS, p<0.001). Atherosclerotic plaques were identified in 152 (67.8%, 1.43 segments/subject) individuals. Proportion of non-calcified plaques was higher in the PS group than in the DS group (p=0.012).

Conclusion: We showed that proximal coronary artery stenosis may be associated with poor renal function and non-calcified plaques, and that distal or diffuse stenosis may be associated with higher CACs. It suggests that different therapeutic approach could be needed to manage proximal or distal coronary artery stenosis in CKD patients

Key Words: 만성신장병, 관상동맥 협착증, 칼슘

Chronic kidney disease, Coronary artery stenosis, Calcium