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복막투석 환자에서의 irisin 값과 경동맥 동맥경화의 관계

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Circulating Irisin Levels are associated with Carotid Atherosclerosis in Peritoneal Dialysis Patients

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Background: Protein-energy wasting (PEW) including sarcopenia is an established risk factor for cardiovascular morbidity and mortality in end-stage renal disease. Irisin, a recently introduced myokine, has been proposed to regulate energy homeostasis and metabolism. However, the association of irisin with PEW and cardiovascular risk has never been elucidated in peritoneal dialysis (PD) patients. This study was aimed to investigate whether circulating irisin levels were associated with PEW and carotid atherosclerosis in PD patients.

Methods: Serum irisin levels were determined by enzyme-linked immunosorbent assay in 102 prevalent PD patients. Clinical, anthropometric, and biochemical variables representing PEW were collected. Carotid atherosclerosis was defined as increased carotid intima-media thickness (cIMT) > 1.0 mm or presence of plaque. Independent association between irisin and carotid atherosclerosis was ascertained by multivariate binary logistic regression analysis.

Results: The mean age was 54.1±11.6 years (20-80 years) and 60 patients (58.8%) were male. Overall, the mean serum irisin levels were 184.2±88.0 ng/mL. Thirty-seven patients (36.3%) had carotid atherosclerosis. In univariate linear regression analysis, serum irisin concentrations were postively associated with mid-upper arm muscle area (MUAMA), but negatively with cIMT and residual renal function. Multivariate analysis revealed that serum irisin concentrations were significantly associated with MUAMA [β=0.28, 95% confidence interval (CI): 1.75-4.37, p=0.01] and cIMT (β=-0.25, 95% CI: -84.93~-7.19, p=0.02). In addition, serum irisin levels were independently associated with carotid atherosclerosis after adjustment for confounding variables (per 1 ng/mL increase, odds ratio=0.989, 95% CI: 0.982-0.997, p=0.01).

Conclusion: This study demonstrates for the first time that low circulating irisin concentration is a surrogate marker of carotid athersclerosis in PD patients.

Key Words: 아이리신, 동맥경화, 복막투석
Irisin, Atherosclerosis, Peritoneal dialysis