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신기능에 따른 VEGF A165 isoform의 혈중 농도 변화

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Change of Circulating Vascular Endothelial Growth Factor A165 Isoform Levels according to Renal Function

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Background: Vascular endothelial growth factor-A (VEGF-A), a potent mediator of angiogenesis, contributes to glomerular capillary hyperpermeabilty that underlies the pathogenesis of diabetic nephropathy. However, existing data regarding implication of VEGF in patients with renal insufficiency are equivocal. The purpose of this study was to examine the association of circulating VEGF-A with renal function including non-diabetic patients.

Methods: The study included 197 patients of whom serum VEGF165 isoform level, the most abundant and potent isoform, was measured by enzyme-linked immunosorbent assay. Individuals with evidence of acute illness were excluded. Other parameters including comorbidities were also evaluated in this observational cross-sectional study.

Results: The median value of serum VEGF165 isoform level was 189 pg/mL (interquartile range: 120 to 353 pg/mL) and the mean of estimated GFR was 44.8 ± 43.2 mL/min/1.73m^2. The serum VEGF165 isoform level was highly correlated with eGFR: ($r=-0.256$, $p<0.001$), while the resultant relationship after adjusting the prevalence of diabetes was not significant. We performed subgroup analysis divided into non-diabetic group and diabetic group. In multivariate logistic regression analysis with non-diabetic subgroup, the highest tertile category of VEGF165 had significantly higher odds ratio for renal insufficiency (eGFR <60 ml/min/1.73m^2) compared to the lowest tertile category (OR 3.67, 95%CI 1.37 to 9.86, p=0.03). However, in diabetic subgroup analysis, the odd ratio of highest tertile category of VEGF165 for renal insufficiency was not significant compared to the lowest tertile category (OR 0.75, 95%CI 0.15 to 3.69, p=0.72), even after adjusting several confounding factors.

Conclusion: These results suggest the possibility that serum VEGF165 levels could have a role in pathogenesis of renal dysfunction even in patients without diabetes.

Key Words: VEGF-A165, 신부전, 당뇨
VEGF-A165, Renal insufficiency, Diabetes