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2형 당뇨병 환자에서 Adipokine이 당뇨합병증에 미치는 효과

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The Association of Adipokine with Diabetic Complications in Type 2 Diabetic Patients

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Introduction: Glypican-4 is enhanced insulin signaling by direct interaction with the insulin receptor. Irisin is known to be potential role in obesity and diabetes. RBP4 has been proposed to modulate systemic insulin sensitivity. Visfatin has beneficial, insulin-like activity and is able to bind to the insulin receptor, lowering blood glucose levels. However, it is uncertain that the association of them with diabetic complications. We investigated the association of them with diabetic complications in type 2 diabetic patients.

Methods: We conducted a prospective study of 161 patients with type 2 diabetes from 2002 to 2013. Spearman's correlation coefficients were calculated to evaluate the relationship between adipokines and biomarkers associated with diabetic complications. To assess the linear by linear association between adipokine and diabetic complications, score test for trend was performed with grouping each adipokine and biomarkers. All statistical analyses were performed using SPSS version 18.0.

Results: Serum glypican-4 level was positively correlated with ACEI and beta blocker. It was negatively correlated with irisin and eGFR (all $p<0.05$). It was significantly linear increased with beta blocker and metformin (all $p<0.05$). Serum irisin level was positively correlated with 2hrs post-prandial plasma glucose level. It was negatively correlated with sulfonylurea, retinopathy, urine protein creatinine ratio and glypican-4 (all $p<0.05$). It was significantly linear increased with smoking, HTN, 2hrs post-prandial plasma glucose level, sulfonylurea, retinopathy and urine protein creatinine ratio (all $p<0.05$). Serum RBP4 level was positively correlated with HTN, beta blocker, calcium channel blocker, serum Cr, nephropathy and dialysis. It was negatively correlated with eGFR(all $p<0.05$). It was significantly linear increased with HTN, LDL cholesterol, beta blocker, calcium channel blocker, lipid lowering agent, nephropathy and CKD stage (all $p<0.05$). None of them are significantly associated with serum visfatin level. However it was significantly linear increased with use of a-glucosidase inhibitors ($p<0.05$).

Conclusion: Taken together, glypican4, irisin and RBP4 were significant relationship with renal injury. Especially, irisin and RBP4 were significantly linear associated with renal injury. However, more research is needed on the relationship between adipokine and diabetic complications.

Key Words: Adipokine, 제2형 당뇨병, 당뇨합병증
Adipokine, Type 2 DM, Diabetic complications