Serum YKL-40 levels are associated with type 2 diabetes mellitus in patients with obstructive sleep apnea syndrome

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ABSTRACT. Patients with obstructive sleep apnea syndrome (OSAS) have an increased risk for type 2 diabetes mellitus (T2DM). It has been recently demonstrated that serum YKL-40 levels, also named as human cartilage glycoprotein 39, are elevated in T2DM patients. The aim of this study was to determine whether serum YKL-40 levels are associated with T2DM in patients with OSAS. This study consisted of 432 patients with OSAS (234 and 198 patients with and without T2DM, respectively). Serum YKL-40 levels were examined using the enzyme-linked immunosorbent assay method. OSAS patients with T2DM had significantly elevated serum YKL-40 levels compared to those without T2DM [205.02 (146.16-272.70) vs 135.72 (114.06-163.38)]. According to the multivariable logistic regression analysis, serum YKL-40 levels were an independent determinant of T2DM in patients with OSAS. Furthermore, based on the linear regression analysis, serum YKL-40 levels were positively associated with the body mass index, systolic blood pressure, serum triglyceride levels, homeostasis model assessment of insulin resistance, and levels of C-reactive protein, fasting plasma...
glucose, 2-h postprandial plasma glucose, and HbA1c in patients with OSAS. Elevated serum YKL-40 levels may serve as a new biomarker to predict T2DM in patients with OSAS.

**Key words:** YKL-40; Inflammation; Obstructive sleep apnea syndrome; Type 2 diabetes mellitus