



## Correlation between serum YKL-40 levels and albuminuria in type 2 diabetes

J.Y. Han<sup>1</sup>, X.Y. Ma<sup>1</sup>, L.J. Yu<sup>1</sup>, Y. Shao<sup>2</sup> and Q.Y. Wang<sup>2</sup>

<sup>1</sup>The Geriatrics Department,  
The First Affiliated Hospital of China Medical University, Shenyang,  
Liaoning Province, China

<sup>2</sup>The Endocrine Department,  
The First Affiliated Hospital of China Medical University, Shenyang,  
Liaoning Province, China

Corresponding author: Q.Y. Wang  
E-mail: wqycmu@163.com

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**ABSTRACT.** We explored the correlation between serum YKL-40 levels and albuminuria in type 2 diabetes mellitus (T2DM) and its clinical significance. This study used a cross-sectional survey method. According to the American Diabetes Association 2007 Clinical Practice Recommendations, 738 patients with T2DM were divided into three groups: a normoalbuminuria group [albumin-to-creatinine ratio (ACR) <30 µg/mg, N = 360], a microalbuminuria group (ACR 30-300 µg/mg, N = 246), and a macroalbuminuria group (ACR ≥ 300 µg/mg, N = 332). The serum YKL-40 levels were determined by a quantitative sandwich enzyme-linked immunosorbent assay in all the cases and in 210 control subjects. Serum YKL-40 levels were significantly higher in the T2DM group vs the control group ( $P < 0.05$ ), the macroalbuminuria group vs the microalbuminuria group ( $P < 0.05$ ), and the microalbuminuria group vs the normoalbuminuria group ( $P < 0.05$ ). Serum YKL-40 levels correlated with ACR in all

participants. Significant correlation of YKL-40 was found with ACR, 2-h plasma glucose, glycated hemoglobin, fasting blood glucose, homeostatic model assessment of insulin resistance index, systolic blood pressure, duration, diastolic blood pressure, age, triglycerides, and high-density lipoprotein cholesterol (r-values: 0.713, 0.524, 0.515, 0.467, 0.438, 0.409, 0.407, 0.374, 0.112, 0.097, and -0.123, respectively). ACR correlated with serum YKL-40 levels (Beta = 0.555,  $P < 0.001$ ). YKL-40 may be involved in the occurrence and development of diabetic nephropathy and would be useful as a new marker for the disease.

**Key words:** Diabetic nephropathy; Type 2 diabetes mellitus