STUDY OF SERUM YKL-40 LEVEL AND IMPAIRED GLUCOSE TOLERANCE COMBINED WITH CARDIOVASCULAR DISEASES RISK

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Background and Objective Diabetes has become a common healthy problem in the world, which is an autoimmune disease mediated by inflammatory cytokine. Inflammation plays an important role in the pathogenesis of diabetes and macrovascular complications. Chitinase-3-like protein-1 (YKL-40) is a new inflammatory factor, which can influence the level of other inflammatory markers and related to the development of cardiovascular diseases. This study aims to investigate the level of YKL-40 in patients with diabetes and impaired glucose tolerance. Correlation between YKL-40 and blood glucose, lipids, high sensitivity C-reactive protein, IMT was compared.

Subjects and methods 135 patients (Beijing Tong Ren Hospital) were enrolled (male, 96; female, 39; ages 65±13). They were divided into three groups: DM patients (n=77), IGT patients (n=38) and controls (n=20). The level of serum YKL-40 was measured by ELLISA. Lipids, HbA1C, plasma glucose and serum high-sensitivity C-reactive protein (hs-CRP) were detected by routine methods. Date was performed on High-resolution B-model ultrasound. Data was analysed using SPSS16.

Results (1) Serum YKL-40 levels in DM group was higher than that in control group (p=0.02). It was higher in IGT group than that in control group, but without statistically significance (p=0.08). It was of no significant difference between DM and IGT group (p=0.06). (2) IMT was different among three groups (p<0.05). (3) The serum YKL-40 level was associated with DM (B=−0.08, p=0.007, OR 0.992). After adjusting age, gender, creatinine and the risk factors of CAD, diabetic family history, hypertension, smoking and hs-CRP, it was still associated with DM (B=−0.009, p=0.01, OR 0.991). (4) The serum YKL-40 level was associated with DM combined with atherosclerosis (B=−277, p=0.026, OR 1.319). (5) There was a notable correlation between the serum YKL-40 levels and IGT with cardiovascular risks (X²=6.96, p=0.016).

Conclusions (1) The level of serum YKL-40 was increased in patients with DM and IGT. (2) The level of serum YKL-40 was associated with diabetes. (3) The level of serum YKL-40 may be used as an independent predicted factor for cardiovascular risk in IGT.