



Upregulation of salivary $\alpha 2$ macroglobulin in patients with type 2 diabetes mellitus

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ABSTRACT. We investigated the expression of salivary $\alpha 2$ -macroglobulin ($\alpha 2$ -MG) in patients with type 2 diabetes mellitus (T2DM) to investigate its value for predicting damage to the salivary glands. A total of 116 patients with T2DM and 60 patients with impaired fasting glucose (IFG) were included in this study. Sixty health volunteers were enrolled as a control group. Unstimulated saliva was collected at 8 a.m. prior to breakfast. Expression of $\alpha 2$ -MG was determined using an enzyme-linked immunosorbent assay. The correlation between salivary $\alpha 2$ -MG, serum $\alpha 2$ -MG, and concentration of fasting glucose was analyzed using Pearson correlation analysis. No significant difference was observed in the expression of serum $\alpha 2$ -MG in the T2DM group, IFG group, and control group ($P > 0.05$). Compared with the control group and IFG group, a statistical difference was observed in the salivary $\alpha 2$ -MG in the T2DM group ($P < 0.01$). No statistical difference was observed in the salivary $\alpha 2$ -MG in the IFG group compared with the control group ($P > 0.05$). In the patients with T2DM, a close correlation was identified in the expression of serum $\alpha 2$ -MG and salivary $\alpha 2$ -MG ($r = 0.52$, $P < 0.01$). A poor correlation was

identified between salivary α 2-MG and blood sugar level ($r = -0.12$, $P = 0.199$). The expression of salivary α 2-MG showed a remarkable increase in T2DM patients, which may be associated with functional disorders of the salivary gland.

Key words: α 2-MG; Saliva; Salivary gland; Type 2 diabetes mellitus