The relationship between insulin sensitivity and serum AT3 activity in patients with type 2 diabetes

Hong Wang (✉ 1559511223@qq.com)

Nantong City No 1 People's Hospital and Second Affiliated Hospital of Nantong University

Jie Cao

Nantong City No 1 People's Hospital and Second Affiliated Hospital of Nantong University

Jian-bin Su

Nantong City No 1 People's Hospital and Second Affiliated Hospital of Nantong University

Xue-qin Wang

Nantong City No 1 People's Hospital and Second Affiliated Hospital of Nantong University

Dong-mei Zhang

Nantong City No 1 People's Hospital and Second Affiliated Hospital of Nantong University

Xiao-hua Wang

Nantong City No 1 People's Hospital and Second Affiliated Hospital of Nantong University

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Research

Keywords: antithrobin 3, insulin sensitivity, type 2 diabetes

Posted Date: January 29th, 2021

DOI: <https://doi.org/10.21203/rs.3.rs-155395/v1>

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Abstract

Background: Serum antithrombin 3 (AT3) is a physiological inhibitor of thrombin, and AT3 activity was found to be decreased at the status of type 2 diabetes (T2D). T2D was presented with an increased risk of thrombotic complications at the background of impaired insulin sensitivity. The aim of this study was to investigate the relationship between insulin sensitivity and serum AT3 activity in patients with T2D.

Methods: We recruited 1612 patients with T2D for this cross-sectional study from the Second Affiliated Hospital of Nantong University. All patients performed 75-g oral glucose tolerance test (OGTT), and basal and systemic insulin sensitivity were assessed by homeostasis model assessment of insulin resistance (HOMA-IR) and Matsuda index (ISI Matsuda), respectively. Serum AT3, one of the hemostatic parameters, and the relevant clinical data were collected, as well as other laboratory indicators.

Results: It is showed that HOMA-IR decreased, while ISI Matsuda notably increased, across ascending quartiles of serum AT3. Moreover, serum AT3 were was negatively correlated with ($r = -0.189, p < 0.001$) and positively correlated with ISI Matsuda ($r = 0.221, p < 0.001$). After adjusted for metabolic risk factors, hemostatic parameters and glucose-lowering therapies by multivariate liner regression analysis, HOMA-IR ($\beta = -0.179, t = -5.823, p < 0.001$) and ISI Matsuda ($\beta = 0.191, t = 6.395, p < 0.001$) was remained independently associated with the serum AT3 activity patients with T2D, respectively.

Conclusions: Reduced basal and systemic insulin sensitivity are associated with decreased AT3 activity in patients with T2D.

Full Text

Due to technical limitations, full-text HTML conversion of this manuscript could not be completed. However, the manuscript can be downloaded and accessed as a PDF.

Figures

Figure 1

The correlation between insulin sensitivity and AT3 activity.