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Correlation between autoantibodies and clinical presentation in T1DM

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INTRODUCTION

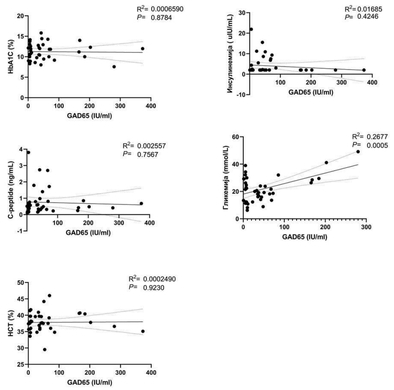
IThe pathogenetic process in T1DM includes a complex mechanism between genetic and immunological factors. Chronic autoimmune reaction relies upon the detection on autoantibodies in the patient's serum long before initiation of the disease. Autoimmune markers include mainly 4 types of antibodies - GAD65, IAA, ICA and IA-2, some present in children less than 10 years (IAA, ZnT8), and some later in life (GAD, IA-2).The presence of more than 2 autoimmune markers predicts earlier presentation of the disease, but there is no clear data between autoantibodies and severity of clinical presentation at the time of diagnosis.

METHOD

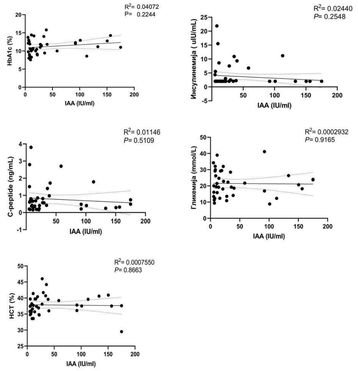
A cohort of 50 children aged 3-18 years with T1DM during the first hospital admission was analyzed. The presence of antibodies was evaluated in all patients, and data were correlated with other clinical and biochemical parameters upon hospitalization. Clinical presentation of the disease in patients was classified as mild, moderate and severe ketoacidosis. Correlation between amount of autoantibodies and basic clinical data that determine severity of ketoacidosis was made with linear regression using *GraphPad Prism 9.0.0* .

RESULTS

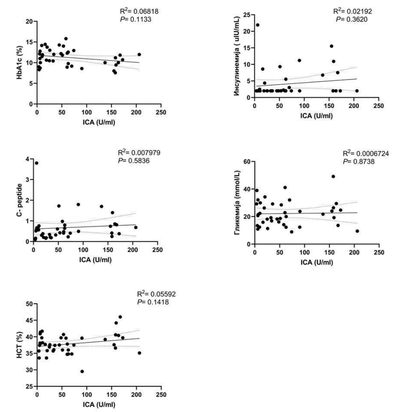
In most of the children at least two autoimmune markers were present. Positive antibodies GAD65 for were found in 65%; IAA in 55%; ICA in 62,5% and IA-2 in 77,5% of patients respectively. Non-significant correlation was found between all autoimmune markers and both clinical presentation and biochemical markers (HbA1C, c-peptide and insulinemia) in patients. Slightly elevated correlation was found between concentration of IAA and glycaemia.



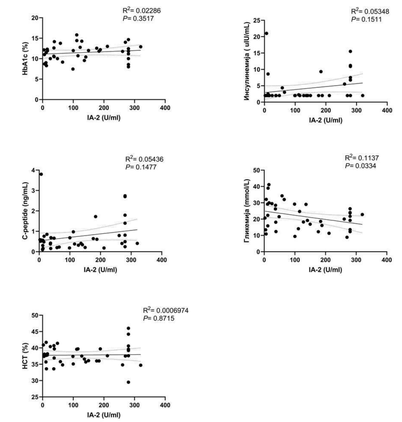
Correlation between GAD65 antibodies and baseline clinical parameters (HbA1c, insulinemia, C-peptide, glycaemia, and HST) in 40 patients with T1D.



Correlation between IAA antibodies and baseline clinical parameters (HbA1c, insulinemia, C-peptide, glycaemia, and HST) in 40 patients with T1D.



Correlation between ICA antibodies and baseline clinical parameters (HbA1c, insulinemia, C-peptide, glycaemia, and HST) in 40 patients with T1D.



Correlation between IA-2 antibodies and baseline clinical parameters (HbA1c, insulinemia, C-peptide, glycaemia, and HST) in 40 patients with T1D.

CONCLUSIONS

Concentration of all autoimmune antibodies at the time of the diagnosis of T1DM is not a good predictive factor for the progression of the disease. High values of GAD65 and ICA in patients indicate greater degree of cell destruction and therefore demand higher insulin dose.

REFERENCES

Cheng BW, Lo FS, Wang AM, et al. Autoantibodies against islet cell antigens in children with type 1 diabetes mellitus. *Oncotarget*. 2018;9(23):16275-16283. Published 2018 Feb 19. doi:10.18632/oncotarget.24527

Orban T, Sosenko JM, Cuthbertson D, et al. Pancreatic islet autoantibodies as predictors of type 1 diabetes in the Diabetes Prevention Trial-Type 1. *Diabetes Care*. 2009;32(12):2269-2274. doi:10.2337/dc09-0934

Bravis V, Kaur A, Walkey HC, et al. Relationship between islet autoantibody status and the clinical characteristics of children and adults with incident type 1 diabetes in a UK cohort. *BMJ Open*. 2018;8(4):e020904. Published 2018 Apr 4. doi:10.1136/bmjopen-2017-020904

Herold KC, Usmani-Brown S, Ghazi T et al (2015) β cell death and dysfunction during type 1 diabetes development in at-risk individuals. J Clin Invest 125:1163–1173

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