CORRECTION OF ZINC DEFICIENCY IN CHILDREN WITHTYPE 1 DIABETES MELLITUS

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The most important in the pathogenesis of diabetes mellitus type 1 (DM-1) among trace elements has zinc (Zn). With the participation of Zn ions is an allocation of insulin from β-cells of Langerhans islands, the inclusion of insulin to transport complex, inhibition of insulinazy. Therefore, zinc deficiency can be considered as one of the factors of development and labile course of DM-1 in children.

The aim of the study was to examine the content of Zn in serum of children with DM-1 depending on the level of glycemic control and to correction of zinc deficiency.

There were examined 64 children with DM-1. State compensation of DM-1 was assessed according to ISPAD (Consensus for the Management of Type 1 Diabetes Mellitus in Children end Adolescens 2000). The optimal level of glycemic control had 10 children (group I), suboptimal level of glycemic control - 30 (group II), level of glycemic control with a high risk to life was in 24 patients (group III).Comparison group was 30 healthy children. To identify zinc in serum the method of atomic absorption spectrometry was usedon a spectrophotometer C-115 M1, production of the NGO «Selmi» (Ukraine).Correction was performed drug with trace elements "Vitam" producer of "Kiev vitamin plant" (Ukraine). Children aged from 4 to 13 years administered 1 capsule 1 time per day, children after 14 years - 2 capsules 1 time per day for 30 days.

Found that most zinc deficiency had patients of group III. They serum Zn concentration decreased by 2,5 times relative to the comparison group (16,04 ± 1,263 mmol/l) and almost 2 times as compared to group I. In patients of group II the content of Zn was 1,6 times lower relative to the comparison group. It should be noted that patients of group I almost Zn content did not differ from healthy children.

As a result of the drug in children of group I of serum Zn concentration increased by 20%, reaching a rate of healthy children. In patients of group II Zn content increased by 36,2% and almost equal to the value of the comparison group. In patients of group III serum concentration of Zn increased by 50%, but remained 22% lower than in healthy children.

Thus, in children with diabetes mellitus type 1 occurs early zinc deficiency in the blood serum, which may be one of the links in the pathogenesis of disease and chronic diabetic complications. Use of drug with trace elements "Vitam" for 30 days in combination with standard therapy promotes recovery of serum zinc in patients with optimal and suboptimal levels of glycemic control.