

# Evaluation of celiac disease antibodies and 25-OH vitamin D in type 1 diabetic patients

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## Objectives:

In diabetic patients vitamin D seems to play a role not only on bone metabolism, but also on many other organs and/or systems, such as lipid profile, cardiovascular system, etc. We decided to evaluate whether the celiac disease antibodies in type 1 diabetic patients have a connection with 25-OH vitamin D status.

## Materials and methods:

78 young patients with type 1 diabetes were evaluated with mean age of  $14 \pm 1.18$ , and diabetes duration of  $7 \pm 0.95$  years, male/female ratio was as 1/1.11. In all investigated patients HbA1c, 25-OH vitamin D, anti-tTG (tissue transglutaminase) autoantibodies were measured, as well as anamnestic data was collected. Hypo- and hyperthyroid patients were excluded. Statistical analyses were performed to determine the significance of findings. In all cases null hypothesis was rejected if  $p < 0.05$ .

## Results:

From 78 investigated patients 45 (57.7%) showed to have vitamin D deficiency  $< 20 \text{ ng/ml}$ . In the rest 42.3%, who had sufficient vitamin D level, it was  $> 20\text{-}30 \text{ ng/ml}$ , which indicates that they have so called "low-sufficient" vitamin D status. No connection between vitamin D status and sex, as well as the diabetes duration was found ( $p > 0.05$ ). HbA1c was significantly high in vitamin D insufficient group ( $p < 0.05$ ). Interestingly no significant difference is found in anti-tTG titers between vitamin D sufficient and insufficient groups ( $p > 0.05$ ), indicating no connection between 25-OH vitamin D and anti-tTG levels. High titers of celiac antibodies also were not associated with poor glucose control ( $p > 0.05$ ). But HbA1c revealed to correlate with age ( $p < 0.05$ ).

## Conclusions:

Glucose control in type 1 diabetic patients correlates with age, as well as is associated with vitamin D status in the organism. No connection between celiac disease antibodies and vitamin D status was found in type 1 diabetic young patients. Further studies are required more profoundly to investigate other parameters' and complications' connection with celiac disease and vitamin D status in type 1 diabetes.

