



## **Glycemic control correlation with Problem areas in diabetes (PAID) scale and psychosocial factors in adolescent (11 – 18 years) patients with type 1 or 2 diabetes mellitus.**

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### **Introduction**

According to Latvian Disease Prophylaxis and Control center there were registered 91 571 patients with diabetes mellitus(DM) in 2017. 682 out of these patients were less than 19 years old. Problem areas in diabetes (PAID) is a 20 item self-report questionnaire that assesses a range of emotional problems related to having type 1 or type 2 diabetes. Previous research has shown that the PAID is a clinically relevant and psychometrically sound instrument (Welch, Weinger, Anderson, Polonsky (2003)). Diabetes specific stressors were found to be associated with less adequate self-care and impaired glycemic control (Peyrot, Rubin, Lauritzen, Snoek, Matthews, Skovlund (2005)).

### **Aim of the study**

Evaluate the association of PAID score with HbA1c(%), Hypoglycemia (times/last week) for adolescents (11 – 18 years old) with type 1 or 2 diabetes mellitus. Evaluate the relation of HbA1c(%) with social factors (number of siblings, times of school change, etc.)

### **Material and methods:**

This is a cross-sectional study including 49 adolescent patients (11-18 years old), diagnosed with type 1 or type 2 diabetes mellitus(DM), in a single university hospital (2018-2019). Patients were given anonymous PAID questionnaire that was translated in Latvian and Russian language. To evaluate glycemic control of participants and collect information of social factors anonymous questionnaire of 12 additional questions was designed. Descriptive statistical analysis and Spearman rank correlation was used to evaluate the results.

### **Results**

There were 48 patients diagnosed type 1DM and 1 with type 2DM. The mean age  $13.98 \pm 2.17$  (mean  $\pm$  SD). Diabetes duration  $4.93 \pm 4.03$  years, 53.1% female and 46.9% male. Glycemic control HbA1c%  $11.07 \% \pm 4.72$ , Hypoglycemia (times/last week)  $2.51 \pm 1.70$ . PAID score was  $21.9 \pm 13.7$ . Association between PAID score and HbA1c(%) was not found ( $rs = -0.111$ ;  $p = 0.447$ ). Relation between PAID score and Hypoglycemia (times/last week) was found ( $rs = 0.338$ ;  $p = 0.047$ ). Association between HbA1c(%) and the number of siblings was found ( $rs = 0.285$ ;  $p = 0.048$ ). None of the siblings have been diagnosed with DM. Relation of HbA1c(%) and the number of times patient has changed schools was found ( $rs = 0.408$ ;  $p = 0.004$ ).

### **Conclusions**

Relation between PAID score and HbA1c(%) levels wasn't found. Association between hypoglycaemia times per last week and PAID score was found indicating that patients who had more hypoglycaemia episodes during last week scored higher points in PAID scale. Relation of HbA1c(%) and the number of times patient has changed schools was found showing that patients who had changed schools more times had higher levels of HbA1c(%). Association of HbA1c(%) and the number of siblings was found indicating that patients with more siblings who have not been diagnosed with DM had higher levels of HbA1c(%)