

Abstract:

Introduction: The global prevalence of type 1 diabetes mellitus (DM1) is increasing, and despite the availability of new and modern treatments, especially in the field of modern technology, it is difficult to achieve optimal diabetes control in many patients. Properly guided and individualized education in insulin therapy, regimen measures and self-monitoring is now considered an essential part of successful treatment of every patient with diabetes.

Objective: The aim of this thesis was to evaluate the effect of nutrition education on DM1 compensation using available and collected parameters (HbA1c, TIR, TBR, coefficient of variation, mean glycaemia) and body weight.

Method: The study was conducted in a total of 40 selected patients with DM1 of the Diabetology Centre of the 3rd Internal Medicine Clinic of the VFN Prague, who underwent education in the outpatient clinic of a nutritional therapist between January 2020 and January 2022. The effect of nutritional education on parameters of diabetes compensation over a 12-month period was subsequently examined by retrospective analysis.

Results: After 12 months, there was a significant improvement in the parameters measured. TIR increased ($68 \pm 15\%$ vs. $75 \pm 15\%$; $p < 0.0001$), other parameters showed a positive decrease - HbA1c (57 ± 11 mmol/mol vs. 50 ± 10 mmol/l; $p < 0.0001$), TBR ($4 (0; 21)\%$ vs. $3 (0; 12)\%$; $p < 0.05$), mean glycaemia (8.4 ± 1.5 mmol/l vs. 8.0 ± 1.4 mmol/l; $p < 0.01$) and coefficient of variation ($34 \pm 7\%$ vs. $33 \pm 7\%$; $p < 0.05$). Body weight values did not change significantly.

Conclusion: Although the limitation of the study was the smaller number of patients, the results of this thesis showed a positive effect of nutritional education on diabetes compensation over a period of 12 months. Therefore, nutritional therapy should be the standard of care for diabetic patients, as it may contribute, together with other therapies, to reduce the development of chronic complications and improve the quality of life of patients with DM1.

Key words: type 1 diabetes mellitus, nutritional therapy, education, compensation, modern technologies