

ABSTRACT

Type 2 diabetes mellitus (T2D) is a chronic metabolic disease characterized by insulin resistance and several secondary complications. The prevalence of patients is constantly increasing, and thus the effort to improve the quality of therapy, new findings, and procedures capable of being applied in clinical practice are sought. Patients live with the disease for a long time, and the purpose of treatment is to improve the quality of life of diabetics and delay the onset of associated health complications. A combination of regimen measures is essential for successful treatment. Dietary measures in the form of a low-carbohydrate diet are still a popular choice of dietary options among diabetics.

The aim of the practical part of the work was to prove the positive effect of a low-carbohydrate diet on T2D compensation. The primary objective was to demonstrate a significant reduction in glycated hemoglobin (HbA1c) in patients who eat or have eaten according to the principles of a low-carbohydrate diet for at least 12 months. Secondary objectives were set as follows: reduction of relative weight (BMI), reduction of pharmacotherapy and/or reduction of daily doses of antidiabetic drugs, reduction of fasting blood glucose and improvement of the lipid spectrum. The research group included patients from the Diabetes center of VFN Prague. Research data were compared before and after the dietary intervention. The questionnaire survey investigated the motivational factors, compliance, and adherence of patients to the diet (patients from VFN and from Facebook groups).

The results showed a significant reduction in HbA1c by an average of 30 mmol/mol, the diet also had a positive effect on the total reduction of BMI by 1,91 kg/m² (mainly in women, in men the weight fluctuated more and even increased). In most of the examined persons, there was a positive change in reducing the number of medications or there was no change in diabetes treatment (medication was not used before and after the intervention). After the low-carbohydrate diet intervention, fasting glycaemia decreased by an average of 3,6 mmol/l in all participants. Before the intervention, 5 respondents, i.e., 71 %, suffered from dyslipidemia, and there was no reduction in total cholesterol values due to dietary changes in any of the research participants.

The questionnaire survey showed that the respondent's adherence to the diet is high (some follow the diet for several years) and 38 % of the research participants said that they could imagine following the diet for life. The respondents most often learned about the diet from a doctor or from family, acquaintances, or friends (31 %). The main motivation for choosing this diet therapy was stopping medication or reducing doses, this option was chosen by 96 % of the participants. Most use the option of consuming 51-130 g of carbohydrates per day (85 %). The diet regime is satisfactory for 58 % of the

respondents because they feel better overall, 31 % of the respondents said that they are comfortable eating 2-3 times a day.

keywords: type 2 diabetes mellitus, low-carbohydrate diet, glycated hemoglobin, BMI, pharmacotherapy, bariatric, glycaemia, lipid profile, motivation