

Original Article

Comparison of glycemic control status before and after the use of artificial sweeteners with conventional nutrition in patients with type 2 diabetes

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Abstract

Background and Objective: Artificial sweeteners are chemical or natural substances used in foods and beverages. The aim of this study was to compare the glycemic control status before and after the use of artificial sweeteners with conventional nutrition in type 2 diabetic patients.

Methods: This quasi-experimental study was performed on 30 patients with type 2 diabetes (10 males and 20 females) whom referred to the endocrinology clinic in Tabriz in west of Iran. At the beginning of the study, patients were asked to refrain from using dietary supplements containing artificial sweeteners for three months and continue their usual diabetic diet. Then, each patient was received nutritional supplements containing artificial sweeteners including sugar, special biscuits and candy under a dietitian for three months.

Results: Mean glucose level of fasting serum and serum glucose 2 hours after meals in patients during the second trimester increased significantly with the use of artificial sweeteners compared to the first three months ($P < 0.05$). The mean fasting glucose in patients with diabetes mellitus was 121.33 ± 25.3 mg/dl at the end of the first trimester and it was 152 ± 42 mg/dl at the end of the second trimester. The mean serum glucose level increased from 164.44 ± 44.44 mg/dl to 222 ± 7.2 mg/dl 2 hours after meals. The mean of HbA1C in the first trimester was $6.89 \pm 0.9\%$ and in the second quarter it was $7.4 \pm 1\%$.

Conclusion: The use of artificial sweeteners in diabetic patients may result serum glucose increase.

Keywords: Diabetes type 2, Serum glucose, Synthetic sweetener

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