Association of dietary intake with body mass index and glycemic profile among newly diagnosed patients with type 2 diabetes mellitus

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Abstract

Introduction

Dietary intake plays an important role in determining body mass index (BMI) and glycemic profile in patients with type 2 diabetes mellitus (T2DM). Our aim was to describe habitual dietary intake and its associations with BMI and glycemic profile in a cohort of patients with newly diagnosed T2DM in Sri Lanka.

Methods

A cross-sectional study was carried out among 158 patients with newly diagnosed T2DM in Galle, Sri Lanka. Data on demographic, lifestyle, and family history of diabetes mellitus, and clinical measures were collected. The dietary information was collected using a 24-h dietary recall.

Results

Among the total number of study subjects, only 12.0%, 5.7% and 1.3% met the recommended daily consumption value of protein, fat, and fiber, respectively, whereas 99.4% of subjects had taken carbohydrates that exceeded the recommended consumption. There was a positive association between carbohydrate intake and BMI (0.004, [0.002], $p = .048$) and carbohydrate intake and glycated hemoglobin (HbA_{1C}) (0.001, [0.000], $p = .049$). Fat intake showed positive associations with BMI (0.029, [0.011], $p = .006$) and HbA_{1C} (0.005, [0.002], $p = .050$). Protein intake showed a positive association with HbA_{1C} (0.006, [0.003], $p = .023$). The aforementioned associations were observed after adjusting for demographic, lifestyle, and history of diabetes among the first-degree family members. The carbohydrate intake was positively associated with BMI (0.010, [0.003], $p = .003$) and HbA_{1C} (0.001, [0.000], $p = .050$) with further adjustment in nutrient intake (except when used as an independent variable). Furthermore, the fat intake was associated with BMI (0.031, [0.011], $p = .004$) and HbA_{1C} (0.005 [0.002], $p = .050$) with additional adjustments.

Conclusions

The diet of the majority of newly diagnosed T2DM patients in this cohort consisted of a higher carbohydrate intake than the recommended level. However, they did not meet the recommended daily intake of protein, fat, and fiber. Both carbohydrate and fat intake were significantly and positively associated with BMI and HbA_{1C} in patients with newly diagnosed T2DM.