

A study of the effects of aging, household, eating habits, and the COVID-19 pandemic on Japanese diabetic patients

SAWADA Mika

Introduction

Diabetes mellitus is a major public concern in Japan. The number of diabetic patients has been on the rise, and the average age of diabetes is rising due to the growing elderly population. Medical nutrition therapy (MNT) is effective on managing diabetes, but the long-term implementation of MNT requires consideration of not only the pathophysiology of diabetes but also their household and eating habits.

Method and Results

Study 1: The relationship among aging, household, eating habits, and dietary intake of Japanese diabetic patients.

Method

This study aimed to clarify the relationship of the dietary intake with age, household, and eating habits. A total of 382 diabetic patients admitted to the diabetes and metabolism ward at the University of Tokyo Hospital were included. Food Frequency Questionnaire, a dietary survey, and laboratory data were collected at the time of admission.

Results

With aging, the rate of living alone decreased in men but increased in women. The frequency of eating out and eating ready-made meals decreased with age in both men and women. In men, the intake changes were most substantial for protein-rich food, whereas in women, significant changes were noted in protein-rich foods, as well as alcohol, vegetables, and seaweed. Furthermore, those who lived alone less frequently ate vegetables and seaweeds than those who did not live alone. The grain intake in men and soybean and soy products intake in women were higher among those who prepared meals by themselves than among those who did not. In both sexes, those who frequently consumed ready-made meals less frequently ate green vegetables and more frequently ate sweets than those who did not eat such meals.

Study 2: Impact of the COVID-19 pandemic on glycemic control, body composition, dietary intake, and exercise habits of Japanese diabetic patients.

Method

This study aimed to evaluate the impact of the COVID-19 pandemic on the glycemic control, body composition, dietary intake, and exercise habits of people with diabetes mellitus; to identify the determinants of worsening glycemic control in diabetic patients. This retrospective, longitudinal observational study was performed on 408 outpatients with diabetes who visited the University of

Tokyo Hospital between April 2019 and March 2020 (pre-COVID-19 period) and continued for follow-up from April 2020 to March 2021 (COVID-19 period). We compared the glycemic control, body composition, nutritional intakes, and exercise habits of people with diabetes mellitus between the two periods. The changes in the HbA1c values (Δ HbA1c) and other study variables were compared between the two periods. Logistic regression analysis was performed to identify the factors associated with the increase of HbA1c levels.

Results

A significant increase of HbA1c was observed during the COVID-19 period. The percent fat mass (FM) also increased, while the percent skeletal muscle mass (SMM) decreased during the COVID-19 period. After adjustments for age and sex, the Δ BMI (OR:2.33), Δ FM (OR:1.45), Δ SMM (OR:0.51), and decrease of physical activity (OR: 1.71) were identified as being associated with elevated levels of HbA1c.

Conclusion

These results suggest that not only age and gender but also dietary and lifestyle changes, including the COVID-19 pandemic, have a significant impact on the pathophysiology of diabetic patients. MNT that takes into account factors such as age, gender, living environment, and eating habits, has the potential to improve glycemic management and to ensure long-term adherence for diabetic patients.