1. No.
   2020G036

2. Title
   Clinical Study on the Relationship between Individual Differences in Fatty Acid Composition Caused by Smoking Habits and Susceptibility to Lifestyle-Related Diseases

3. Period
   2020-2024

4. Summary
   In this study, we investigated the effects of smoking habits on the relationship between fatty acid composition balance and metabolic diseases. We used cluster analysis based on the weight ratio of fatty acids in the blood to express fatty acid balance using the fuzzy c-means method, targeting 400 subjects who had undergone a medical checkup and 193 patients with type 2 diabetes. In the study of 400 subjects who had undergone a health checkup, the results showed that the proportion of subjects who had smoked was high in the cluster with a high proportion of saturated and monounsaturated fatty acids and a low proportion of polyunsaturated fatty acids, and that the proportion of people with obesity, hypertension, diabetes, dyslipidemia and fatty liver was high. In addition, it was suggested that smokers are more likely to have a diet high in carbohydrates and low in protein and fat, and that changes in fatty acid balance due to this may affect the incidence of various lifestyle-related diseases. In a study of type 2 diabetes patients, those in the cluster with a high proportion of saturated and monounsaturated fatty acids and a low proportion of polyunsaturated fatty acids had lower kidney function. While there was no difference in smoking habits between the clusters, the presence or absence of smoking experience affected the relationship between each cluster and albuminuria, and a difference was only observed between each cluster and albuminuria in patients who had smoked.