

審査の結果の要旨

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The research question of this study was to examine the association of dietary glycemic index (GI), glycemic load (GL) and sugary drink consumption with the risks of mortality. The three main objectives of this study were 1) to quantify the association between dietary GI, GL, and sugary drink consumption and risk of death from all causes; 2) to examine the association between dietary GI, GL, and sugary drink consumption and cause-specific mortality; and 3) to perform sex-stratified analysis to examine whether there are gender differences in the associations. The data from The Japan Public Health Center-based Prospective Study were used for the analysis.

The key findings of this study are as follows:

1. For the dietary GI and GL analysis, during a mean follow-up of 17.1 years, 7,535 deaths among men and 4,913 among women were documented. Of these, 4,964 deaths were due to cancer, 2,941 to circulatory system diseases, 1,501 to heart disease, 1,157 to cerebrovascular disease, 919 to respiratory diseases, and 459 to digestive diseases.
2. As compared with the lowest quartile, the multivariable hazard ratio (HR) for those who had the highest quartile of GI was 1.13 (95%CI, 1.07–1.19). The HRs for death comparing the highest with the lowest quartile were 1.26 (1.13–1.40) for circulatory system diseases, 1.32 (1.13–1.54) for heart disease, 1.27 (1.07–1.51) for cerebrovascular disease, and 1.39 (1.14–1.70) for respiratory diseases.
3. The associations between dietary GI and total and cause-specific mortality risk were not modified by sex, except for circulatory system disease mortality and heart disease mortality.
4. Dietary GL showed a null association with all-cause mortality. Among those who had the highest GL, HRs for death from circulatory system diseases was 1.23 (1.04–1.44) and cerebrovascular disease was 1.30 (1.01–1.69) as compared with the lowest quartile.
5. The associations between dietary GL and total and cause-specific mortality risk were not modified by sex.
6. For the sugary drink analysis, during a mean follow-up of 17.1 years, 7,118 deaths among men and 4,693 among women were documented. Of these, 4,713

deaths were due to cancer, 1,088 to cerebrovascular disease, 2,766 to circulatory system diseases, 1,412 to heart disease, 888 to respiratory diseases, and 433 to digestive diseases.

7. Sugary drink consumption was associated with higher total mortality, with multivariate HR of 1.06 (1.00–1.13) for quintile 3, 1.07 (1.01–1.13) for quintile 4, and 1.15 (1.09–1.22) for quintile 5, compared with the quintile 1. Additionally, positive associations with cause-specific mortality were observed, including death from circulatory system diseases and heart disease diseases.
8. The associations between sugary drinks and total and cause-specific mortality risk were not modified by sex.

The results of this study suggest that dietary GI and sugary drink consumption were associated with a greater risk of total and cause-specific mortality. The findings did not support a positive association between dietary GL with overall mortality, but dietary GL was associated with cause-specific mortality, especially with circulatory system disease and cerebrovascular disease mortality.

This study is the largest Asian-based analysis of the association between dietary GI/GL, sugary drinks, and mortality outcomes to date. The findings of this study provide new perspectives and further evidence to support public health actions in Japan to raise public awareness of healthier food choices. Given the reasons above, the committee considers that this thesis is worthy of a doctoral degree.

よって本論文は博士（保健学）の学位請求論文として合格と認められる。