Mediterranean Diet and Incidence of Stroke in the California Teachers Study

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Background

Mediterranean diet (MeDi) has been linked to reduced incidence of cardiovascular and neurodegenerative diseases, and overall mortality, in several prospective studies. There is limited data, however, regarding the relationship between MeDi and stroke and its subtypes. We hypothesized that MeDi would be associated with reduced total, ischemic, and hemorrhagic stroke incidence.

Methods

The California Teachers Study comprises 133,478 women educators enrolled in 1995 and continuously followed since. Using linked California state hospitalization data and national death records from 1996-2011, incident strokes were identified and validated. Socio-demographic and medical risk factor data were collected from the baseline questionnaire. Diet was assessed using a food-frequency questionnaire. We used the MeDi adherence score, a validated 9 point scale. A higher score represents increased adherence. Multivariable Cox proportional hazard models adjusted for socio-demographic variables, moderate-to-strenuous physical activity, total calorie intake, body mass index, cigarette smoking, menopausal/hormonal status and vascular risk factors were used to assess the association (hazard ratios and 95% confidence intervals, HR 95% CI) between MeDi score and risk of stroke and its subtypes.

Results

For the analysis, 104,268 participants were eligible (mean age 52 ± 13.9 years, 87.4% white, 4.6% Hispanic, 3.2% Asian, 2.1% black). The MeDi score distribution was 0-2 (16.1%), 3 (18.2%), 4 (21.4%), 5 (20.1%), and 6-9 (24.3%). During follow-up, 3165 stroke events occurred (2270 ischemic; 895 hemorrhagic). In the multivariable model, compared to those in the lowest MeDi score quintile (score 0-2), those in the fourth quintile (score 5: HR 0.86, 95% CI 0.75-0.98) and highest quintiles (score 6 - 9: HR 0.83, 95% CI 0.73-0.95) were at lower risk of stroke (p for trend 0.009). For ischemic stroke, those in the third (HR 0.84, 95% CI 0.72-0.97), fourth (0.85, 95% CI 0.73-0.98), and highest quintiles (HR 0.82, 95% CI 0.70-0.95) were all at reduced risk (p for trend 0.02). There was no association with hemorrhagic stroke.

Discussion

Adherence to the Mediterranean diet is associated with decreased risk of total and ischemic stroke incidence among women.
Disclosure