

WHI Ms2729: Impact of inflammatory diet on global cognitive function and incident dementia in older women

Title: Association of Inflammatory Diet with Incident Mild Cognitive Impairment or Dementia in Older Women

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Background:

Adherence to either the Mediterranean or the DASH diet has been associated with a reduced incidence of mild cognitive impairment (MCI) and dementia. Inflammation may play an important role in MCI and dementia, and diet can influence inflammatory processes. Previously, a Dietary Inflammatory Index (DII) was associated with inflammatory biomarkers in the Women's Health Initiative (WHI). Our objective was to evaluate the association of an anti-inflammatory diet, indicated by lower DII scores, with incident MCI/dementia in the WHI Memory Study (WHIMS).

Methods:

DII scores characterize diet on a continuum from minimally inflammatory (low score) to maximally inflammatory (high score). We used baseline food frequency questionnaire data from n = 7,109 WHIMS participants (aged 64 to 80 years) to calculate DII scores which were then partitioned into quintiles. Cox models were used to evaluate risk of MCI/dementia onset across DII quintiles, adjusted for age, race, education, hormone therapy treatment, non-steroidal anti-inflammatory use, diabetes, hypertension, caloric intake, physical activity, and body mass index using the highest DII quintile (Q5) as the referent. MCI/dementia status was adjudicated centrally according to Peterson's MCI criteria and DSM-IV criteria for probable dementia using longitudinal neurocognitive test data, informant Dementia Questionnaires, and health history data.

Results:

Over an average of 9.7 years (standard deviation: 5.4), there were 1,081 incident MCI/dementia cases. Diets that were less inflammatory were associated with later MCI/dementia onset. Hazard ratios (HR) comparing lower, less inflammatory DII quintiles to the highest quintile referent (Q5: pro-inflammatory) were: Q4-HR: 0.77, 95% Confidence Interval (CI) 0.64-0.94; Q3-HR: 0.82, 95% CI 0.67-0.99; and Q2-HR: 0.75, 95% CI 0.62-0.92. The lowest DII quintile (Q1) tended toward a reduced, although not statistically significant risk association for MCI/dementia (Q1-HR: 0.87, 95% CI 0.71-1.06) compared to the highest quintile (Q5).

Conclusions:

Anti-inflammatory diets were associated with a lower risk of MCI/dementia. While evidence for the protective effects of healthy diets has been widely publicized, this is one of few studies to show that an anti-inflammatory diet is associated with a reduced risk for MCI/dementia.

