Can South Asian Diet Leads to Healthy Brain Ageing

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Introduction

Traditional South Asian diet is rich in pulses, cereals, fruits and vegetables. To the best of our knowledge this is the first brain autopsy study that has investigated the possible protective effect of South Asian diet on ageing cerebrovascular pathologies.

Materials & Methods

- Human brain samples from 76 elderly subjects aged ≥60yrs (mean age 67-3yrs ± 10.0, mean ± SD, male: female = 52:24, mean post mortem interval 17-hours ± 14.2, mean ± SD) were used for this study.
- Atherosclerotic changes in the circle of Willis (CW) was graded in all samples based on degree of stenosis of the CW.
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Introduction: Traditional South Asian diet is rich in pulses, cereals, fruits and vegetables. To the best of our knowledge this is the first brain autopsy study that has investigated the possible protective effect of South Asian diet on ageing cytoskeletal pathologies.
Methods: Human brain samples from 76 subjects aged ≥50yrs were used to assess atherosclerosis of the circle of Willis (CW), and out of that 50 brains aged ≥60yrs were subjected to neuropathological diagnosis using histopathological/ immunohistochemical techniques. Alzheimer's disease (AD) related neuropathological changes were counted in specific neuroanatomical regions. Antimortem questionnaire was administrated to obtain the consumption pattern of pure black tea, green-yellow vegetable, and fish, of the deceased via kin.

Results: Frequent consumption of pure black tea ≥4cups/day showed a significant reduction in β-amyloid (Aβ) accumulations- senile plaque counts in the region of entorhinal cortex (p=0.009), superior frontal gyrus (p=0.041) and in all region (p=0.04) and the average cerebral amyloid angiopathy grades in cortical and leptomeningeal region (p=0.037) compared to decedents who had consumed lightly (≤2-3cups/day) with 2 sample independent t-test. Moderate consumption of green-yellow vegetables (1-6times/week) showed a significant negative association with moderate and severe atherosclerosis of CW with the odds of 0.17 [p=0.011, 95% confident level (CI) = 0.04–0.67] adjusted for age and sex. Cerebrovascular lesions: spongiform changes of neuropil [odds ratio (OR) =0.09; 95% CI 0.13–0.63; p=0.016], dilated perivascular spaces (OR=0.05; 95% CI 0.00–0.65; p=0.022) and hippocampal CA1 cell loss (OR=0.05, 95% CI 0.00–0.85, p=0.038) were also found significantly low in cases who had not consumed fish adjusted for age and sex.

Conclusions Despite methodological limitations, our findings revealed a possible protective effect between diet and both Alzheimer and cerebrovascular pathologies in aging brains that warrants future studies to ascertain healthy eating habits among the South Asian population.