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Plant-based dietary patterns and risk of multiple sclerosis in the UK Women's Cohort Study

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Multiple sclerosis (MS) is a neurodegenerative disease that affects approximately 2.8 million people worldwide. Among other risk factors, such as smoking and history of infectious mononucleosis, diet is emerging as a modifiable risk factor for MS. However, there is little evidence associating plant-based diets and MS risk. The few studies available investigated vegetarian diets and MS risk and found conflicting results: in one study, a vegetarian diet was associated with higher risk⁽¹⁾, the other with lower risk⁽²⁾. The aim of this study was to investigate associations between plant-based indices and risk of MS. We used data from the UK Women's Cohort Study, which followed adult women over 20 years (MS cases: n = 88, age = 47.9 years [SD 7.6]; controls n = 25,038, age = 52.1 years [SD 9.2]). We used three plant-based indices: i) plant-based index (PDI), ii) healthy plant-based index (hPDI) and iii) unhealthy plant-based index (uPDI)⁽³⁾. These indices assign scores according to intakes of three food groups: 'healthful plant-foods' (e.g., fruits, vegetables), 'unhealthful plant-foods' (e.g., refined grains, sweets) and 'animal foods' (e.g., meat, fish). For the PDI, both the healthful and unhealthful plant-foods were positively scored from 1 to 5 according to increasing intakes. For the hPDI, healthful-plant foods were positively scored from 1 to 5 according to increasing intakes; unhealthful plant-based foods were scored in reverse. For the uPDI, unhealthful plant-based foods were scored positively, and the healthful plant-based foods were reverse-scored. Animal foods were reverse-scored for all three indices. MS incidence was ascertained from hospital records based on International Classification of Diseases (ICD-10) code G35. Adjusted (age, smoking, education, energy intake) multivariable cox proportional hazard regression models were used to estimate hazard ratios (HRs) and 95% confidence intervals (CIs) for risk of MS according to each dietary pattern separately (PDI, hPDI, uPDI) as well as each food group (healthful plant-foods, unhealthful plant-foods, animal foods). A higher PDI was associated with lower risk of MS (HR: 0.95, 95% CI: 0.92, 0.98, p = 0.001). However, the hPDI and the uPDI were not associated with MS risk. A higher intake of healthful (HR: 0.93, 95% CI: 0.88, 0.98, p = 0.004) and unhealthful (HR: 0.91, 95% CI: 0.85, 0.97, p = 0.008) plant-foods was associated with lower risk of MS, while animal foods were not associated with MS risk. These findings suggest that plant-based foods could be beneficial for people at high risk of MS, with no effect of animal products. However, these findings are from one country and for women only and may not necessarily be generalisable to other population groups. Future research investigating the association between plant-based diets and MS risk in other populations is warranted.

References

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