

Abstract Number: 1136/O115

Dietary vitamin D and the risk of multiple sclerosis in the Norwegian Mother and Child cohort

Akash Kapali *^{1, 2}, Anne Kjersti Daltveit^{1, 3}, Kjell-Morten Myhr^{2, 4}, Kjetil Bjørnevik^{5, 6}, Trond Riise^{1, 2}, Marianna Cortese⁵,

¹ University of Bergen, Department of Global Public Health and Primary Care, Bergen, Norway² Haukeland University Hospital, Neuro-SysMed, Department of Neurology, Bergen, Norway, ³ Norwegian Institute of Public Health, Bergen, Norway, Department of Health Registry Research and Development, Bergen, Norway, ⁴ University of Bergen, Department of Clinical Medicine, Bergen, Norway⁵ Harvard T.H. Chan School of Public Health, Department of Nutrition, Boston, United States, ⁶ Harvard T.H. Chan School of Public Health, Department of Epidemiology, Boston, United States

Introduction:

Higher vitamin D has consistently been associated with a lower MS risk, but some controversy remains around whether it is vitamin D itself or sunlight that modifies the disease risk and, whether vitamin D is merely a marker of sunlight exposure. Investigating dietary vitamin D intake, especially in regions with low sun-induced vitamin D production most of the year, can help shed light on this question.

Objectives/Aims:

To investigate the association between dietary vitamin D and risk of MS.

Methods:

We conducted a prospective study among women in the Norwegian Mother and Child Cohort Study (MoBa) followed from enrolment in 1999–2008 to 2022. We identified incident cases of MS through data-linkage with the Norwegian MS registry. Dietary vitamin D (food and supplements) was calculated from a food frequency questionnaire administered in pregnancy week 22. Information about pre-pregnancy smoking, body mass index (BMI), and other potential confounders was obtained in week 15. We used Cox regression to estimate hazard ratios (HR) for MS risk with 95% confidence intervals (CI).

Results:

Among 94,967 women in the cohort, 439 developed MS during follow-up. Higher intake of total dietary vitamin D was associated with a 37% lower risk of MS (HR for top vs bottom quintile: 0.63; 95% CI: 0.42–0.95, ptrend=0.02). Results remained similar after adjusting for total energy intake, pre-pregnancy BMI and smoking. We found similar associations for vitamin D intake from food only (HR for top vs bottom quintile: 0.64; 95% CI: 0.42–0.95, ptrend=0.004), and supplements only (HR for >600IU/day vs <200IU/day: 0.68; 95% CI: 0.43–1.07).

Conclusion:

In this prospective study conducted in a Nordic country with insufficient sun-induced vitamin D production during most of the year, the association of higher dietary vitamin D with lower MS risk supports the hypothesis that vitamin D itself modifies MS risk.

Disclosures:

Akash Kapali: Nothing to disclose Anne Kjersti Daltveit: Nothing to disclose Kjell-Morten Myhr: Nothing to disclose Kjetil Bjørnevik: Nothing to disclose Trond Riise: Nothing to disclose Marianna Cortese: Nothing to disclose

