Abstract: P3425

Alpha-linolenic acid may lower the rate of atherosclerotic cardiovascular disease in subjects with a low intake of marine n-3 fatty acids

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Introduction:
Previous studies investigating the association between intake of the plant-derived n-3 fatty acid alpha-linolenic and atherosclerotic cardiovascular disease (ASCVD) have shown conflicting results. However, the effect of ALA intake on ASCVD may depend on the intake of marine n-3 fatty acids.

Purpose:
We aimed to explore the association between ALA intake and risk of ASCVD in subjects consuming below and above the 10th percentile of marine n-3 fatty acids, respectively.

Methods:
We followed men and women enrolled into the Danish Diet, Cancer and Health cohort (n = 57,053) by linkage with nationwide registers and identified all incident ASCVD cases. All participants were aged 50 to 65 years at baseline. ASCVD was defined as the first registration of myocardial infarction, peripheral artery disease or ischemic stroke due to large artery atherosclerosis or small-vessel occlusions. Intake of ALA and marine n-3 fatty acids was assessed using a validated food frequency questionnaire and expressed as energy-adjusted intake. Statistical analyses were conducted using Cox proportional hazard regression.

Results:
During a median of 13.4 years of follow-up, we identified a total of 3958 incident ASCVD cases including 366 cases among subjects in the lowest 10th percentile of consumption of marine n-3 fatty acids (<252 mg/day). In multivariable analyses, we found a statistically significant inverse association between ALA modelled as a restricted cubic spline and the rate of ASCVD (p = 0.005) in subjects with a low intake of marine n-3 fatty acids, whereas no statistically significant association was found between ALA intake and ASCVD in subjects with a higher intake of marine n-3 fatty acids (p = 0.155) (Figure).

Conclusion:
Intake of ALA may be associated with a lower rate of ASCVD in subjects with a low intake of marine n-3 fatty acids.
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Conclusion: Intake of ALA may be associated with a lower rate of ASCVD in subjects with a low intake of marine n-3 fatty acids.