Effects of omega-3 fatty acids on dementia and cognitive Impairment in the ASCEND trial

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Background: Observational data suggest that higher fish consumption is associated with a lower risk of dementia and supplementation with omega-3 fatty acid (FA) is associated with better cognition. The aim of this study is to assess the effect of omega-3 fatty acid (FA) supplementation on the risk of dementia and cognitive impairment in a pre-specified secondary analysis, with longer follow-up, of a randomized comparison in the ASCEND trial.

Methods: The study included 15,427 people in the United Kingdom with diabetes and no history of prior cardiovascular disease or recorded dementia randomized in the ASCEND trial between June 2005 and July 2011 randomly assigned to 1g capsules daily containing omega-3 fatty acids or matching placebo for a mean of 7.4 years. The main pre-specified comparison by randomized treatment in this cognitive study was a "broad dementia outcome" of dementia, cognitive impairment or confusion ascertained through participant, carer or general practitioner report or hospital admission diagnosis, by 31 March 2019 (~2 years beyond the scheduled treatment period).

Results: During a mean follow-up of 7.4 years within the scheduled treatment period and 1.7 years afterwards, the broad dementia outcome occurred in 1146 participants, a similar percentage of participants in the omega-3 FA group and placebo groups: 574 participants (7.4%) vs. 572 (7.4%), rate ratio 1.00 (95% CI, 0.89–1.12) p=0.99. Allocation to omega-3 FA was not associated with any significant effect on measured cognitive function at end of the scheduled treatment period.

Conclusions: Omega-3 FA allocation was not associated with risk of the broad dementia outcome in this population of people with diabetes and the results excluded a proportional impact greater than 11%. Further trials are needed to assess the impact of higher dose omega-3 FA supplementation, but the current evidence does not support supplementation with omega-3 FA for dementia prevention.