Adherence to a Mediterranean diet is associated with better cognitive performance many years later in the PRIME cohort

Andrea McGrattan, MSc, PhD[1], Claire T Mcevoy, PhD[1], Jayne V Woodside, PhD[1], Gerry Linden, MD[1], Anthony Peter Passmore, PhD, FRCP, MD[1], Clive Holmes, BSc, MB, ChB, MRCPsych, PhD[2], Christopher Patterson, PhD[1], Jessica Teeling, PhD[2] and **Bernadette McGuinness, MD, PhD**[1], (1)Queen's University Belfast, Belfast, United Kingdom, (2)University of Southampton, Southampton, United Kingdom

Abstract Text:

Background: Greater adherence to a Mediterranean Diet (MD) has been associated with reduced cognitive decline and dementia risk. The Prospective Epidemiological Study of Myocardial Infarction (PRIME) recruited 10,600 European male participants between 1991 and 1993 aged 50-59 years. The aim of this study was to examine the association between adherence to a MD (at baseline) and subsequent cognitive performance.

Method: Dietary data was collected via a short, self-administered 16-item Food Frequency Questionnaire; an adapted version of the traditional MD Score was also developed (aMDSR) and median values of intake for each MD component were used as the cut-off point to calculate the aMDSM. In 2017, follow-up cognitive assessments using the Addenbrooke's Cognitive Examination – Revised (ACER) commenced within the Belfast cohort (n=405).

Result: For aMDSM, those in the Low MD category scored lower on all cognitive tests compared to the High MD category, with significant differences reported for ACE-R (p = 0.001), ACE-R sub domain of memory (p = 0.038), fluency (p = 0.001) and visuospatial skills (p = 0.030). For participants with a ACE-R score below 88, suggestive of cognitive impairment, there were 19.3% in the Low MD category and 7.2% in the High MD category (p = 0.004). There were 7.4% in the Low MD category and 2.7% in the High MD category who obtained an ACE-R score below 82, indicative of probable dementia, with no statistically significant difference between categories (p=0.09). In an adjusted model for age, education and cardiovascular risk factors, this significant difference was maintained, with those in the High MD category being 56% less likely to have an ACE-R score of <88/100 (OR 0.442, 95% CI 0.241-0.810, p=0.008) compared to those in the Low MD category. For participants with a ACE-R score below 82, indicative of probable dementia, there were 7.4% in the Low MD category and 2.7% in the High MD category with no statistically significant difference between categories (OR 0.661, 95%CI 0.269-1.621, p=0.37) .

Conclusion: In the PRIME Belfast cohort, higher adherence to a MD was associated with better cognitive performances 26 years later in some but not all analyses.