

Fats and multiple sclerosis: association between fats/oils intake and disability in patients with MS

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Introduction: Multiple sclerosis (MS) is a chronic demyelinating disease of the nervous system which is the most common cause of neurological irreversible disability in young adults who are professionally and socially active persons. Due to the variable clinical course of MS, it is classified into relapsing and progressive phases and three phenotypes of relapsing remitting MS (RRMS), primary progressive MS (PPMS), and secondary progressive MS (SPMS). Assessment of dietary intakes of fats is an approach that has been used to evaluate diet-disease and diet-disability association.

Method: 126 patients with diagnosed MS (84 RRMS, 21 PPMS and 21 SPMS) with MRI assessment of brain and spinal cord were recruited from multiple sclerosis clinic in Kashani Hospital of Isfahan University of Medical Sciences, Isfahan, Iran include from present cross-sectional study. A 168-item semi-quantitative food frequency questionnaire was used for assessment of dietary intakes of fatty acids. Medical history questionnaire, Expanded Disability Status Scale (EDSS) and Fatigue questionnaire record from all participants.

Results: Mean \pm SD of EDSS and fatigue scale in SPMS and PPMS groups was significant higher than RRMS group. There

was a negative significant correlation between intakes of Poly Unsaturated Fatty Acids (PUFAs) including Linolenic Acid ($r=-0.418$, $p=0.018$), Linoleic Acid ($r=-0.312$, $p=0.031$) with EDSS in all participants. In addition, there was a negative significant correlation between intakes of Mono Unsaturated Fatty Acids (MUFAs) ($r=-0.348$, $p=0.028$) with EDSS in all participants. Correlation between Saturated Fatty Acids (SFAs) with EDSS ($r=0.465$, $p=0.009$) and fatigue scale ($r=0.298$, $p=0.043$) was significantly positive in all participants. Although correlation between total dietary fats with EDSS and fatigue scale in all participants and subgroups were positive, but was not significant. Age, gender and blood pressure were not confounder variables. In addition, we adjusted energy intakes in subgroups.

Conclusion: Our study demonstrated that there is a positive significant correlation between intakes of SFAs with EDSS and fatigue scale in all participants. In addition, dietary intakes PUFAs and MUFAs can decrease EDSS in all patients with MS. Further studies with larger sample sizes and other population needed to prove this correlation.

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