

Polyunsaturated fatty acids levels and initial presentation of somatic symptoms induced by interferon-alpha therapy in patients with chronic hepatitis C viral infection

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Abstract

Background: Somatic symptoms are common in clinical practice and are similar to sickness behaviors due to inflammatory activation after cytokine administration in animals or humans. Polyunsaturated fatty acids (PUFAs) have been suggested to mediate in somatic symptoms in depression in cross-sectional and observational studies. With the patients of hepatitis C virus infection (HCV) infection receiving interferon-alpha therapy, we investigated the role of PUFAs on the development of somatic symptoms in a prospective manner.

Methods: Forty-three patients with chronic HCV ongoing interferon-alpha therapy were assessed with the Mini-International Neuropsychiatric Interview (MINI) for major depressive episodes and Neurotoxicity Rating Scale (NRS) for somatic symptoms. Patients' red blood cell (RBC) samples were collected for PUFAs analyses at baseline and two weeks during interferon-alpha therapy.

Results: Fifteen out of 43 participants (34%) developed interferon-alpha-induced depression. There were no differences between the depression and non-depression groups in age, sex distribution, NRS scores, and levels of eicosapentaenoic acid (EPA), docosahexaenoic acid (DHA) and arachidonic acid (AA) at baseline. However, there was a significant negative correlation between scores of somatic symptoms and levels of EPA at week 2. The initial increases on somatic symptom scores were positively correlated to AA levels at week 2.

Conclusion: The initial presentation of painful and non-painful somatic symptoms were associated with the changes in PUFA levels, which further implicates that pro-inflammatory AA and its antagonist EPA might contribute to the presentation of IFN-alpha-induced somatic symptoms in HCV patients.