Blood Polyunsaturated fatty acids (PUFAs) Levels and Depressive Symptoms in Patients with Cardiovascular Diseases

Jane Pei-Chen Chang[1,2], Shih-Sheng Chang[3], Kuan-Pin Su[1,4]

[1]Department of Psychiatry, China Medical University Hospital
[2]Department of Psychiatry, College of Medicine, China Medical University
[3]Division of Cardiology, Department of Internal Medicine, China Medical University Hospital
[4]Graduate Institute of Neural and Cognitive Sciences, China Medical University

Abstract

Background

Depression and CVDs are two highly comorbid diseases, they are both chronic and debilitating. Omega-3 polyunsaturated fatty acids (PUFAs) have close relations with the etiologies of CVDs and depression individually based on epidemiological studies and neurophysiology and treatment studies. The aim of the study is to assess the blood PUFAs levels and its correlates in patients with cardiovascular diseases comorbid with depression

Method

The sample consisted of 44 patients with stable cardiovascular diseases enrolled from Cardiology Clinic, with 22 depressed patients and 22 non-depressed patients. They received interview with Hamilton Rating Scale for Depression (HAMD) by a research nurse and reported on psychiatric and somatic symptoms. Blood PUFAs levels were analyzed.

Results

Depression group had lower education (0=0.049), higher scores in HAMD (p=0.000), Fatigue (p=0.001), NTS (p=0.007), and all HAMD subscale scores (core, sleep, activity, somatic anxiety, anxiety, psychiatric anxiety, and delusion) (p=0.000). No significance was noted in the blood PUFAs between the two groups but a trend with lower blood EPA levels in the depressed group was observed. Moreover, correlation analysis showed that blood DHA had negative correlation with fatigue severity (0.004), HAMD core subscale scores (p=0.032), and HAMD delusion subscale scores (p=0.027).

Conclusion

Despite fatigue being a common complaint among patients with cardiovascular disorders, depression seems to exacerbate the fatigue severity in these patients. Moreover, the negative correlation between DHA and fatigue and depression severity may suggest a possible common pathway shared by these two diseases via PUFA modulation on neurophysiological mechanisms.