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Alterations in peripheral fatty acid composition in bipolar and unipolar depression

Gustavo Scola^{a,1}, Amelia Versace^{b,1}, Adam H. Metherell^c, Luz A. Monsalve-Castro^d, Mary L. Phillips^e, Richard P. Bazinet^f, Ana C. Andreazza^{g*}

^aCentre for Addiction and Mental Health, Department of Molecular Neuroscience. University of Toronto, Department of Psychiatry, Toronto, Ontario, Canada

^bDepartment of Psychiatry, Western Psychiatric Institute and Clinic, University of Pittsburgh Medical Center, University of Pittsburgh, Pittsburgh, United States of America

^cDepartment of Nutritional Sciences, University of Toronto, Toronto, Ontario, Canada

^dDepartment of Pharmacology and Toxicology, University of Toronto, Toronto, Ontario, Canada

^eDepartment of Psychiatry, Western Psychiatric Institute and Clinic, University of Pittsburgh Medical Center, University of Pittsburgh, Pittsburgh, United States of America. Department of Psychological Medicine, Cardiff University, Cardiff, United Kingdom

^fDepartment of Nutritional Sciences, University of Toronto, Toronto, Ontario, Canada

^gDepartment of Psychiatry and Pharmacology and Toxicology, University of Toronto, Toronto, Ontario, Canada

***Corresponding Author.** Ana C. Andreazza, Pharm, PhD, University of Toronto, Medical Science Building, Room 4204. 1 King's College Circle, Toronto, ON, M5S 1A8. Phone/Fax: +1416-978-6042. ana.andreazza@utoronto.ca

Abstract:

Background:

Lipid metabolism has been shown to play an important role in unipolar and bipolar depression. In this study, we aimed to evaluate levels of fatty acids in patients with unipolar (MDD) and bipolar depression (BDD) in comparison to patients with bipolar disorder in euthymia (BDE) and non-psychiatric controls.

Methods:

Levels of saturated fatty acids (SFAs), monounsaturated fatty acids (MUFAs) and polyunsaturated fatty acids (PUFAs) were assessed in serum of (87) patients with BD (31 euthymic, 22 depressive) or MDD (34) and (31) non-psychiatric controls through GC-FID.

Results:

No significant difference in total levels of PUFAs (polyunsaturated fatty acids), SFAs (saturated fatty acids), MUFAs (monounsaturated fatty acids) and total fatty acids were found between groups. Our results demonstrated higher levels AA:EPA and AA:EPA+DHA in patients with BDD. Additionally, we observed that overall omega-6 present a positive correlation with illness duration in patients with BDD and AA:EPA ratio positively associated with illness duration in MDD group. Depression severity was positively associated with AA:EPA+DHA ratio in all participants.

Conclusion:

Together, our results support the relevance for the balance of omega-3 and omega-6 in BDD. Also, our results suggest a potential subset of stage-related lipid biomarkers that further studies are needed to help clarify the dynamics of lipid alteration in BD and MDD.

¹ Contributed equally

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