

Press release: European College of Neuropsychopharmacology

[Study shows diet and weight may affect response to Bipolar Disorder treatment](#)

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Type of study: randomised controlled trial/not peer-reviewed/people

Data from a clinical trial has shown that how people respond to treatment for Bipolar Disorder may be influenced by their weight and the overall quality of their diet, including whether they are eating a diet high in foods thought to contribute to general inflammation. These are early results, but if replicated may mean that treatment of some mental health problems could benefit from the inclusion of dietary advice. This is presented at the ECNP Conference in Barcelona.

Bipolar Disorder (which used to be called 'manic depression') is characterised by episodes of mood swings, between being very up or very down with periods in between the two extremes. The fact that there are two opposite sets of symptoms means that finding an effective treatment is difficult. While current medications are useful, they are better at targeting mania symptoms (the 'up' phase), leaving a lack of effective treatment for people experiencing depressive episodes. Now a group of Australian, German and American scientists have shown those who have a high quality diet, a less inflammatory diet, and/or a low BMI (Body Mass Index) may respond better to an add-on nutraceutical treatment provided as part of a clinical trial.

"If we can confirm these results, then it's good news for people with Bipolar Disorder, as there is a great need for better treatments for the depressive phase of Bipolar Disorder" said lead researcher Melanie Ashton of Deakin University in Australia.

A total of 133 participants were randomly assigned to take a combination of nutraceuticals (compounds derived from foods such as vitamins or minerals that treat or prevent a disease or disorder) including the anti-inflammatory amino acid n-acetylcysteine (NAC), or NAC alone, or a placebo (a dummy pill) for 16 weeks. Participants received the study medication in addition to any stable treatments they were already receiving. Researchers measured BMI at the beginning of the study, and then measured depression and how a person is able to function in their day to day life. Researchers also rated whether a participant was improving and, if so, how much, over the next 20 weeks. Participants filled in a questionnaire about what they usually eat over the year and researchers calculated a diet quality score, where good diets included a healthy diet with lots of fruit and vegetables, whereas poorer-quality diets had more saturated fat, refined carbohydrates and alcohol. These types of diets were then categorised as either anti-inflammatory or pro-inflammatory based on foods that affect inflammation.

Melanie Ashton continued, *“We found that people who had a better-quality diet, a diet with anti-inflammatory properties, or a lower BMI, showed better response to add-on nutraceutical treatment than did those who reported a low-quality diet, or a diet including foods that promote inflammation, or who were overweight.*

What this means, if these results can be repeated in a larger trial, is that treatment for Bipolar Disorder would need to take into account what a person eats and their weight.

There are some points we need to note about this study. This is a randomised, controlled trial, but what we found were exploratory outcomes; in other words, it wasn't the main result that we were testing. Our result is statistically significant, but because the study wasn't specifically designed to test the effect of diet quality, inflammatory diets and BMI on drug response in general, it is necessary to see the work replicated in a larger study before any firm conclusions can be formed”.

Commenting, Professor Eduard Vieta (Barcelona) said:

“This is interesting work, which holds out the possibility that patients with Bipolar Disorder may benefit from a balanced diet. However, it is an early study, and we need more research before we can think whether this might affect clinical practice”.

Professor Vieta was not involved in this work, it is an independent comment.

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The European College of Neuropsychopharmacology (ECNP)

The ECNP is an independent scientific association dedicated to the science and treatment of disorders of the brain. It is the largest non-institutional supporter of applied and translational neuroscience research and education in Europe. Website: www.ecnp.eu

The 31st annual ECNP Congress takes place from 6th to 9th September in Barcelona. It is Europe's premier scientific meeting for disease-oriented brain research, annually attracting between 4,000 and 6,000 neuroscientists, psychiatrists, neurologists and psychologists from around the world. Congress website: <https://2018.ecnp.eu/>

Abstract

Poster P.039 Diet quality, dietary inflammatory index and body composition as predictors of N-acetylcysteine and mitochondrial agents efficacy in bipolar disorder

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See abstract online for institute details.

Introduction: Bipolar depression is often the hardest phase to treat in bipolar disorder. While current pharmacotherapies are useful, they often target mania symptoms, leaving a potential shortfall in recovery for people experiencing depressive episodes [1]. Underlying these symptoms are disturbances in neuroinflammation, oxidative stress, mitochondrial activity and neurotransmitters [2]. These processes could be modulated by diet quality (that is often poor in people with bipolar disorder) and this may have an impact on treatment outcomes [3].

Therefore, the current study aimed to assess if participants diet quality, dietary inflammatory index and body mass index (BMI) predict response to treatment in a clinical trial [4].

Methods: Participants with bipolar depression (n=181) took part in a three-arm, 16-week trial. Participants were randomised to receive one of three treatments, the first being a combination treatment of mitochondrial enhancing agents consisting of N-acetylcysteine (NAC), Acetyl L-carnitine (ALC), ubiquinone (Co Q10), Alpha Lipoic acid, magnesium, α -tocopherol, cholecalciferol, retinyl palmitate, calcium ascorbate dehydrate, vitamin B co-factors: thiamine hydrochloride, nicotinamide, riboflavin, calcium pantothenate, pyridoxine hydrochloride, Biotin, folic acid and cyanocobalamin. The second arm of the study was NAC alone treatment and the third arm was placebo. Participants were assessed every four weeks of the study including a post discontinuation of study medication visit at week 20. Diet quality was measured by a Food Frequency Questionnaire converted into an Australian Recommended Food Score and Dietary Inflammatory Index. BMI was measured at baseline. Participants with post-baseline and dietary intake data (n=133) were included in the analysis. Linear Mixed Models were used to assess if diet quality, dietary inflammatory index or BMI predicted response to the significant outcomes of the study, week 20 scores for: depression symptoms (measured by the Montgomery Åsberg Depression Rating Scale), clinician rated improvement (measured by Clinical Global Impression-Improvement), Social and Occupational Functioning Scale and Longitudinal Interval Follow-Up Evaluation - Range of Impaired Functioning Tool.

Summary of Results: BMI significantly predicted Clinical Global Impression-Improvement in relation to treatment received. Participants with lower BMI and in the combination treatment arm showed greater Clinical Global Impression-Improvement over time in the study ($p=0.020$). Participants with lower BMI also predicted a greater Clinical Global Impression-Improvement for those randomised to the NAC only arm ($p=0.020$). BMI, dietary inflammatory index and Australian recommended Food Scores were further explored as predictors for social and occupational functioning, impairment of functioning, and depression symptoms.

Conclusions: Diet quality, in particular the inflammatory capacity of a diet, and BMI of participants with bipolar disorder may predict response to treatment. Participants who have lower BMI may show greater clinician rated improvement when receiving the combination mitochondrial enhancing treatments. Further research is required for a more comprehensive assessment of diet quality and other common bipolar disorder treatments.

References

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