Medical Xpress

Gene breakthrough on lithium treatment for bipolar disorder

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Bipolar disorder is characterized by transitions between depression and mania. Credit: Wikipedia

Genes linked to schizophrenia in psychiatric patients suffering from

bipolar disorder are the reason why such patients don't respond to the "gold standard" treatment for bipolar - the drug lithium - according to international research led by the University of Adelaide.

Lithium has been widely used as a treatment for bipolar disorder since the 1950s because of its mood stabilizing effect. It has unique protective properties against both manic and depressive episodes, and an ability to decrease the risk of suicide.

However, about 30% of patients are only partially responsive, more than a quarter show no clinical response at all, and others have significant side-effects to lithium.

Until now, researchers have not understood why these patients have not responded to the common treatment, while others have responded well to the drug.

Published today in the journal *JAMA Psychiatry*, an international consortium of researchers led by the University of Adelaide's Professor Bernhard Baune reports a major discovery that could affect the future quality of treatment for people with this significant mental health condition.

Known as the international Consortium on Lithium Genetics, the group has studied the underlying genetics of more than 2500 patients treated with lithium for bipolar disorder.

"We found that patients clinically diagnosed with bipolar disorder who showed a poor response to lithium treatment all shared something in common: a high number of genes previously identified for schizophrenia," says Professor Baune, Head of the Discipline of Psychiatry at the University of Adelaide and lead author on the paper.

"This doesn't mean that the patient also had schizophrenia - but if a bipolar patient has a high 'gene load' of schizophrenia risk genes, our research shows they are less likely to respond to mood stabilizers such as lithium.

"In addition, we identified new genes within the immune system that may play an important biological role in the underlying pathways of lithium and its effect on treatment response," Professor Baune says.

Understanding the underlying biology of people's response to lithium treatment is a key area of research and urgent clinical need in mental health.

"These findings represent a significant step forward for the field of translational psychiatry," Professor Baune says.

"In conjunction with other biomarkers and clinical variables, our findings will help to advance the highly needed ability to predict the response to treatment prior to an intervention. This research also provides new clues as to how patients with bipolar disorder and other psychiatric disorders should be treated in the future."

More information: *JAMA Psychiatry* (2017). DOI: 10.1001/jamapsychiatry.2017.3433

Provided by University of Adelaide