

Blood test could reveal bipolar disorder

Below:

Method that could diagnose, assess patients also raises ethical question

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A blood test could be used to diagnose and assess the severity of certain mental illnesses, such as bipolar disorder, according to a new study. But some experts think this raises ethical concerns about prying into a person's mental status.

Lab tests that can accurately detect mental illnesses have long been considered the "Holy Grail" of psychiatry. Currently, bipolar disorder and other conditions such as depression are diagnosed based on the patient's description of their symptoms and the physician's judgment, sometimes making it difficult to get an accurate diagnosis or determine the severity of a patient's condition. But now researchers have shown that 10 genes that can be detected in the blood could provide a better way to assess a patient.

"Patients aren't sure how ill they really are, and neither is the clinician — sometimes dismissing their symptoms, sometimes overestimating them," said Dr. Alexander Niculescu, III, a psychiatrist at the Indiana University School of Medicine in Indianapolis, who led the research published Tuesday by the journal *Molecular Psychiatry*. "Having an objective test for disease state, disease severity, and especially to measure response to treatment, would be a big step forward."

More work remains to be done to confirm these findings, Niculescu said, adding that tests could hit the market in as little as five years.

The goal of the new study was to identify genes or biomarkers that could be used to track the severity of the symptoms of mania or depression in people already diagnosed with bipolar disorder, but these same genes could ultimately be turned into a test to make an initial diagnosis, he said.

Niculescu, who is also working on identifying biomarkers for diagnosing anxiety and stress as well as hallucinations in schizophrenia, said the bipolar findings could be the dawning of a new age in psychiatry. "It would put psychiatry on par with other medical specialties," he said.

This could be especially helpful for ensuring a patient is getting the right medication. Bipolar patients are sometimes first seen by a physician during one of their low periods. Consequently, they may be misdiagnosed with depression and prescribed antidepressants, which can trigger a dangerous manic state. A blood test that could be used to monitor the patient might enable physicians to catch this mood elevation before it was too late.

"This may be especially important in children and adolescents, who are hard to diagnose for sure using clinical criteria only, and in whom mood states can change fast, sometimes dangerously so," Niculescu said.

Beyond the stigma

Dr. Carlos Pato, chair of the psychiatry department at the University of Southern California School of Medicine in Los Angeles, thinks a test for mental illness should be viewed no differently than a test for other medical conditions, such as diabetes or heart disease risk.

"We should look beyond the stigma of a mental illness because the most important thing is to have a very clear diagnosis to get the best treatment for the patient," Pato said.

Genetic testing for disease has long been controversial, but Art Caplan, director of the Center for Bioethics at the University of Pennsylvania and an msnbc.com columnist, said a genetic test for mental state could intensify that debate.

"We're likely to see much more controversy with genetic testing when it's about behavior, mental states and personality characteristics than when you're testing for cancer risk or prostate problems," Caplan said.

The tests are particularly concerning if they could be used to screen for mental illness in the workplace or for college admittance, Caplan said. Other controversial areas include requiring people pass a blood test for mental competency to purchase a gun or for high sensitivity jobs, such as police officer or to enroll in the military.

Genes predict mood state

In the new study, designed to assess the severity of the disease, Niculescu's team first drew blood samples from 29 bipolar patients (27 men and two women) who were also asked about their mood level at the time of collection.

The researchers looked for differences in gene activity (whether the genes were turned on or off) between the high and low mood groups. They then incorporated the results with genetic data from animal models and gene activity from samples taken from the brains of deceased bipolar or depressed patients. The comparison enabled them to identify 10 genes for predicting mood state. (It is not yet known if any of these genes play a direct role in causing bipolar disorder or depression.)

By calculating a score based on whether each gene is active in a blood sample, the researchers could predict high mood if the score was high and low mood if the score was low. When these genes were examined in the initial group of patients, the calculated scores were 85 percent accurate in predicting high mood and 77 percent accurate in predicting low mood.

While this isn't perfect, Niculescu said this accuracy rate is within range of other medical tests, such as some cancer screening methods.

But one challenge of the test could be a disconnect between the results and how a patient says they feel, said Dr. Peter Rabins, a psychiatrist at Johns Hopkins University's Berman Bioethics Institute in Baltimore. Rabins noted that in cases of severe depression, a patient sometimes will look better to their friends and doctors after starting treatment, but will say they don't feel better.

"So who's right? The patient or the test?" he said. "Ultimately, my feeling would be we have to listen to the person and what they're experiencing and not the blood test."

Steve Mitchell is a science and medicine writer in Washington, D.C. His articles have appeared in a variety of newspapers, magazines and Web sites, including UPI, Reuters Health, The Scientist and WebMD.

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