

# Imaging may unlock new mental illness diagnosis options

October 11 2013, by Adela Talbot

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(Medical Xpress)—Imagine suffering from a mental illness and waiting up to a decade to get a proper diagnosis, all the while taking the wrong medications. This is an unfortunate reality for some patients suffering from bipolar disorder (BD) and major depressive disorder (MDD), said Dr. Elizabeth Osuch, a researcher at Western's Lawson Health Research Institute and a psychiatrist at the London Health Sciences Centre.

The problem is, diagnosis isn't an exact science, she noted, being heavily weighted on patient observation and history. BD and MDD are two commonly misdiagnosed disorders in psychiatry.

"The diagnostic criteria are inadequate for the task. They're not about pathophysiology – there's no lab tests, no imaging tests to test for these things," Osuch explained, noting psychiatrists mostly rely on set descriptions of ailments when diagnosing [patients](#).

But, as with any medical condition, mental illnesses can sometimes present themselves differently, varying from patient to patient, so misdiagnosis is a frequent risk. That's where Osuch's work comes in.

In a recent test group of 30 young patients, 15 diagnosed with MDD and 15 with BD, Osuch found a biomarker in the brain of patients with BD. She imaged the brain with [magnetic resonance imaging](#) (MRI), looking for a region that corresponded with the bipolarity index, a diagnostic tool that encompasses varying degrees of BD.

The MRI tests revealed an activation of the putamen, a round structure at the base of the forebrain, which has a positive correlation with BD – and what could be the differentiating factor between BD and MDD.

"In young people, BD presents differently than in an older adult. Sometimes you see mixed states, so you can mistake BD for MDD," she said.

"The first thing you have to keep in mind is these illnesses present themselves in adolescents and young adults, and if someone is malfunctioning in their later high school and university years, that's messed up their life pretty seriously," Osuch continued.

This is why it is so important to get a proper diagnosis – the earlier the better – and treat the ailment appropriately from the start.

"If you treat somebody with MDD as if they have [bipolar disorder](#) and you give them a mood stabilizer, when they need an antidepressant, you're overmedicating them and giving them adverse affects," Osuch said. The same is true when mistaking BD for MDD and prescribing an antidepressant.

Her recent study is unique in the field, as she is not looking at patient diagnoses or mood states of the individual, but instead at the dimensional aspects of the patients. She plans to continue this study with a larger sample group, looking for the same findings.

"We're looking for what really is going on here at the level of pathophysiology, to help better find these (diagnoses). What I published is one piece of the puzzle. The distinction (between BD and MDD) is really quite important and coming up with a better distinction would be great," Osuch said.

She added this is the ideal case scenario, and a possibility, in psychiatry, helping doctors to effectively and rapidly diagnose and treat patients.

"Looking to pathophysiology for diagnoses rather than descriptions would be great."

Provided by University of Western Ontario

Citation: Imaging may unlock new mental illness diagnosis options (2013, October 11) retrieved 29 April 2024 from

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