

Bipolar Disorder

Serge Beaulieu MD, PhD, FRCPC

Associate Professor, Department of Psychiatry, McGill University, Montreal, Quebec; Medical Chief, Direction of Clinical Operations and Knowledge Transfer, Douglas Mental Health University Institute, Montreal, Quebec; Medical Chief, Mood, Anxiety and Impulsivity Disorders, Douglas Mental Health University Institute, Montreal, Quebec; Medical Chief, Bipolar Disorders Program, Douglas Mental Health University Institute, Montreal, Quebec.

Bipolar illness has benefited from a surge of research in the field of neurobiology, psychopharmacology and psychotherapy. Earlier research has allowed us to understand the basic neuronal circuitry of the stress response and to identify that the amygdaloid complex of the limbic system plays a crucial role in the generation of that response. It turns out, as previously demonstrated, bipolar patients have an increased response to stimuli of a “noxious” nature such as loud sounds which activate a neurological reflex called the startle reflex. The amygdala has been demonstrated to be hyperactive even when our patients are euthymic. This is possibly a trait marker when one considers that a recent study (2011) showed that subjects at risk for developing a bipolar disorder, such as unaffected children of parents suffering from a bipolar type I disorder, have also been shown by functional magnetic resonance imaging (MRI) to have this hyperactivity of the amygdaloid complex.

This is a good example of how the process of basic research can also lead to the development of a better understanding of illnesses.

The next step is to generate better treatments based on this new knowledge. Research into the mechanism of action of antidepressants, as well as atypical antipsychotics and mood stabilizers has identified common mechanisms of action. These lead to a decreased reaction to stressful stimuli and/or to neuroprotective actions, for instance by increasing neuronal growth factors such as brain-derived neurotrophic factor. In addition, psychotherapy research has benefited from brain imaging, especially functional MRI, allowing researchers to identify the modulation of specific limbic system areas by psychotherapy techniques such as cognitive-based therapy and mindfulness-based cognitive therapy, either complementing or supplementing the actions of pharmacological treatments.

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