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New depression treatments reported

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New insights into the physiological causes of depression are leading to treatments beyond common antidepressants such as Prozac and Zoloft, researchers are reporting in the in the journal *Current Psychiatry*.

Depression treatments on the horizon include new medications, electrical and magnetic stimulation of the brain and long-term cognitive behavioral therapy for stress management.

Authors are Murali Rao, MD, and Julie M. Alderson, DO. Rao is professor and chair of the Department of Psychiatry and Behavioral Neurosciences at Loyola University Chicago Stritch School of Medicine, and Alderson is a resident at East Liverpool City Hospital in East Liverpool, Ohio.

For more than 50 years, depression has been studied and understood as a deficiency of chemical messengers, called neurotransmitters, that carry signals between brain cells. Commonly used antidepressants are designed to either increase the release or block the degradation of three neurotransmitters – dopamine, norepinephrine and serotonin.

But drugs that target neurotransmitters, such as Prozac, Zoloft and Paxil, succeed in inducing the remission of depression in fewer than half of patients. This has prompted researchers "to look beyond neurotransmitters for an understanding of depressive disorders," Rao and Alderson write.

New theories of depression are focusing on differences in neuron

density in various regions of the brain; on the effect of stress on the birth and death of brain cells; on the alteration of feedback pathways in the brain and on the role of inflammation evoked by the stress response.

Chronic stress is believed to be the leading cause of depression, the authors write. Long-term stress harms cells in the brain and body. Stressful experiences are believed to be closely associated with the development of psychological alterations and, thus, neuropsychiatric disorders. In conditions of chronic stress exposure, nerve cells in the hippocampus begin to atrophy. (The hippocampus is a part of the brain involved with emotions, learning and memory formation.)

The new depression theories "should not be viewed as separate entities because they are highly interconnected," Rao and Alderson write. "Integrating them provides for a more expansive understanding of the pathophysiology of depression and biomarkers that are involved."

Such biomarkers are molecules in the body that can be indicators of depression. The authors identify more than a dozen potential biomarkers depression, including monoamine regulators; proinflammatory cytokines and other inflammatory mediators; mediators of glutaminergic activity and GABAergic activity; and regulators of neurogenesis.

Depression treatments currently offered or on the horizon include corticotropin-releasing hormone antagonists; dexamethasone; partial adrenalectomy; long-term cognitive behavioral therapy; ketamine and other NMDA antagonists; benzodiazepines; anesthetics; deep brain stimulation; transcranial magnetic stimulation; exogenous brain-derived neurotrophic factor; selective serotonin reuptake inhibitors; tricyclic antidepressants; atypical antidepressants; reduction in inflammation; and anti-inflammatory drugs.

It can take several months to recover from depression. Thus, Rao and

Alderson write, current depression treatment programs that average six weeks "are not long enough for adequate recovery."

More information: The article is titled "Dissecting melancholia with evidence-based biomarker tools."

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