First oral neurosteroid treatment for postpartum depression approved

October 20 2023, by Sunitha Konatham

On Aug. 4, 2023, the United States Food and Drug Administration (FDA) approved zuranolone (Zurzuvae) as the first oral neurosteroid treatment for postpartum depression (PPD) in women.

Postpartum depression is a potentially life-threatening condition that occurs after a woman gives birth and can cause new mothers to feel extreme sadness, anxiety, despair and, in extreme cases, thoughts of
harming themselves or their children.

Samba Reddy, a Regents Professor of neuroscience and experimental therapeutics at Texas A&M University School of Medicine, is the lead researcher who made groundbreaking contributions to neurosteroid replacement therapy (NRT) research, paving the way for the development of this new medication for postpartum depression. The work is published in the journal Psychopharmacology.

Neurosteroids are steroids that are produced in the brain and have significant regulatory effects on brain function. "These neurosteroids are released each time we undergo mild stress, and that means that they are 'stress-busters,'" Reddy said.

During pregnancy, one particular neurosteroid, allopregnanolone, is produced in greater quantities. After labor and delivery, neurosteroid levels fall, causing chemical imbalances in the brain that might result in postpartum depression.

Citing the examples of hormone replacement therapy for menopause or insulin replacement therapy for diabetes, Reddy asked: "Why don't we replace the allopregnanolone to compensate for the loss of naturally occurring levels to combat these symptoms of PPD?"

This question led to the development of intravenous allopregnanolone for the treatment of postpartum depression. This medicine, renamed brexanolone, was approved in 2019 as the first PPD treatment to be administered in certified health facilities. This landmark journey on brexanolone, from concept to clinic, was archived in the journal Psychopharmacology.

"Ten percent of mothers experience PPD, but before NRT-based neurosteroid therapeutics, we didn't have any medicine that worked
"I have spent 25 years of my life just researching neurosteroids. My job is to create new knowledge. I have created dozens of new pieces of knowledge, and some remain as ideas, some only become papers, and some turn into clinical products," Reddy said. With publications going back as far as 1995 with the concept of "Neurosteroids: a new class of
neuromodulators," published in the journal *Drugs Today* (1995), his research on neurosteroid therapies has gone through all these phases.

The neurosteroid concept Reddy and his collaborators came up with over two decades ago has finally enabled the creation of a new type of product that is accessible to the public as zuranolone.

Throughout his career, Reddy has made stellar contributions to the development of new brain disease therapies, as recognized by the Texas A&M Innovation office, which featured him as the Inventor of the Month in September 2023.

The clinical approval of zuranolone recognizes Reddy's pioneering research on neurosteroids, the endogenous molecules that regulate neuronal excitability, seizure and mood by rapidly interacting with ionotropic GABA-A receptors on neurons. Now, he will be able to see this medication on the pharmacy shelf because of the fruition of his decades of painstaking work in unraveling the cellular mechanisms behind neurosteroid effects in the brain.

This commitment has motivated Reddy to identify therapeutic measures for various neurological conditions, including postpartum depression, epilepsy and brain injury.

The success of Reddy's pioneering research on the neurosteroids brexanolone and ganaxolone has ushered in a new era of research with the potential to develop new treatments for other neurological and psychiatric conditions. In addition to being a professor and researcher, Reddy is a licensed pharmacist.

**More information:** Doodipala Samba Reddy et al, Preclinical and clinical pharmacology of brexanolone (allopregnanolone) for postpartum depression: a landmark journey from concept to clinic in neurosteroid

Provided by Texas A&M University

Citation: First oral neurosteroid treatment for postpartum depression approved (2023, October 20) retrieved 27 October 2023 from https://medicalxpress.com/news/2023-10-oral-neurosteroid-treatment-postpartum-depression.html

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.