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NeuroRx announces FDA IND clearance for NRX-101 phase 2b/3 study and publication of promising biomarker data

Clinical stage biopharma company advances development of first-in-class drug to decrease the risk of suicide in those suffering from bipolar depression

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NeuroRx, a clinical stage biopharma company developing the first oral therapy for Acute Suicidal Ideation and Behavior (ASIB) in Bipolar Depression has received FDA clearance to proceed with its phase 2b/3 study protocol under an Investigational New Drug (IND) application and is now enrolling study sites for its clinical trial of NRX-101. The clinical trial, details of which are posted on www.clinicaltrials.gov, seeks to demonstrate that NRX-101 is safe and effective in maintaining remission from ASIB and depression following initial stabilization with ketamine.

NRX-101 is a fixed dose combination of D-Cycloserine, a glycine site NMDA antagonist and lurasidone, a 5-HT2a antagonist. The Mass General Clinical Trials Network and Institute will provide leadership for the clinical trial, and Prof. Andrew Nierenberg, M.D., Director of Bipolar Research in the department of Psychiatry at Massachusetts General Hospital will serve as the study's Principal Investigator. Initial study sites will be posted shortly.

NRX-101 is the first oral drug to target ASIB, a life-threatening condition that kills more than 70 Americans a day and over 1,000 worldwide. Today, there is no approved medicine to treat increased suicidal ideation; SSRI/SNRI's bear a warning about the risk of potential for increased suicidal ideation. The current standard of care, as published by the American Psychiatric Association consists of voluntary or forced admission to a psychiatric hospital and electroconvulsive therapy (ECT). Although ECT is associated with a decrease in suicide deaths, it requires 6 – 10 sessions of general anesthesia and is known to cause memory loss and confusion.

Ketamine – a potent NMDA blocker - is used off-label for Treatment Resistant Depression and Suicidal Ideation, but is known to cause hallucinations and other dissociative side effects. Recently released information on intranasal ketamine additionally showed a 20% incidence of vomiting.1

Last month the FDA issued a warning about neurotoxicity associated with prolonged or repeated use of ketamine, particularly in those under 3 years of age and pregnant women. NeuroRx recently completed a preclinical study in which NRX-101 showed no detectable neurotoxicity at any of the studied doses, meeting the requirement of at least a 10-fold safety margin of the maximum human dose.

In the latest issue of the American Journal of Psychiatry information published by Dr. Joshua Kantrowitz and colleagues at the New York State Psychiatric Institute (NYSPI) showed that the neurochemical (i.e. biomarker) effect of NRX-101 can be evaluated using Magnetic Resonance Spectroscopy to observe the levels of glutamate/glutamine (Glx) in the brain. This non-invasive technique, akin to the MRI that is familiar to the public, has previously shown that patients with severe depression have markedly reduced levels of Glx in the brain.2 ECT has been associated with increased Glx levels in those who experience clinical remission from depression. Comparable effects have not been seen with traditional SSRI antidepressants. These findings in aggregate make Glx a potentially a promising biomarker to monitor the effect of NRX-101.

Kantrowitz and colleagues reported that D-cycloserine, a component of NRX-101 was shown to raise brain Glx levels in normal volunteers.3 This effect has similarly been demonstrated with ketamine, suggesting that drugs which target the brain's NMDA pathway, unlike SSRI antidepressants, may achieve some of the beneficial effects of ECT, without the undesirable side effects of ECT, such as memory loss. In addition to the pivotal study just announced, ongoing studies will explore the effect of NRX-101 on brain Glx to demonstrate a biomarker effect consistent with the Congressional intent of the 21st Century Cures Act overwhelmingly passed by the House and Senate and signed into law this month.

Learn more at Neurorxpharma.com.

About Bipolar Depression and Acute Suicidal Crisis

Bipolar disorder is characterized by significant changes in mood; one of the phases can be severe depression. This phase can trigger thoughts of suicide. For some patients these thoughts can become strong, creating an urge to develop a plan and/or act upon these thoughts, making Acute Suicidal Ideation and Behavior (ASIB) in Bipolar Depression a uniquely lethal disease. Approximately 100 Americans and more than 2,100 people worldwide end their lives each day., patients with bipolar disorder may account for up to 2/3's of all suicides. Those with acute suicidal crisis, as classified by FDA-recognized scales, have a 33% chance of death within six months. Despite the nature of acute suicidal crisis, many patients seek medical care or are brought to care by families and physicians. Yet, there is no currently approved therapy for the treatment of acute suicidal crisis and most commonly used antidepressants bear an FDA-mandated warning label identifying the potential to increase the risk of suicide.

About NRX-101

NRX-101 is a potential rapid-onset and sustained treatment regimen that will be studied for Acute Suicidal Ideation and Behavior (ASIB) in patients with Bipolar Depression. The treatment, which is currently investigational and not approved for sale, is a patented, oral, fixed-dose combination of two FDA-approved drugs: D-Cycloserine, a N-methyl-D-aspartate (NMDA) receptor modulator; and lurasidone, a 5-HT2a receptor antagonist. NeuroRx's investigational treatment approach begins with a single dose of ketamine, an FDA-approved anesthetic, followed by approximately six weeks of daily oral NRX-101. Results from two Phase II clinical studies, involving 26 and 8 patients respectively, have been published in peer-reviewed journals. Findings demonstrate more than a 50% reduction in symptoms of depression and a 75% reduction in suicidal ideation in bipolar patients treated with D-cycloserine, the active ingredient in NRX-101.

About NeuroRx, Inc.

NeuroRx, Inc. is developing NRX-101, the first oral therapeutic for the treatment of Acute Suicidal Ideation and Behavior (ASIB) in Bipolar Depression (ASIB). Currently, there is no approved drug for patients with suicidal depression and current SSRI antidepressants bear an FDA warning about possible increased risk of suicide, leaving hospitalization and electroshock therapy as the only accepted treatment. The company is built upon 30 years of basic science and clinical expertise in understanding the role of the brain's NMDA receptor in regulating human thought processes, particularly depression and suicidality. NeuroRx is currently initiating its Phase 2b/3 clinical trial of NRX-101.

Media Kit: http://biotechshowcase.vporoom.com/Neurorx

1 Canuso CM, et. al. Efficacy and Safety of Intranasal Esketamine for the Rapid Reduction of Symptoms of Major Depressive Disorder…Poster T134, Am College of Neuropsychopharmacology. 2016
2 Luykx, JJ, et. al., Region and state specific glutamate downregulation in major depressive disorder, Neuroscienc and Biobehavioral Reviews 2012;36:198-205
3 Kantrowitz JT, et. Al. D-Cycloserine, an NMDA Glutamate Receptor Glycine Site Partial Agonist, Induces Acute Increases in Brain Glutamate Plus Glutamine and GABA Comparable to Ketamine. Am J Psychiatry, 2016, online ahead of print

To view the original version on PR Newswire, visit:http://www.prnewswire.com/news-releases/neurorx-announces-fda-ind-clearance-for-nrx-101-phase-2b3-study-and-publication-of-promising-biomarker-data-300385188.html

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