Zogenix Announces New Efficacy Data From a Long-Term Study of Low-Dose Fenfluramine for Treatment of Dravet Syndrome

May 27, 2015

- *New data presented at European Paediatric Neurology Society Congress in Vienna, Austria includes 10 patients who continued treatment with low-dose fenfluramine for Dravet syndrome following the original study published in 2012, plus 2 new patients who began treatment in 2011*
- *During 5-year follow-up period from 2010-2014:*
  - *At least 80% of patients experienced a greater than or equal to 75% reduction in seizure frequency every year*
  - *A majority of patients experienced long periods of seizure freedom*
  - *The drug was well tolerated and no patient discontinued treatment due to adverse events*

SAN DIEGO, May 27, 2015 (GLOBE NEWSWIRE) -- Zogenix, Inc. (Nasdaq:ZGNX), a pharmaceutical company developing and commercializing unique therapies for the treatment of central nervous system (CNS) disorders, today announced new data demonstrating sustained efficacy and tolerability for patients treated with low-dose fenfluramine as an adjunctive therapy for Dravet syndrome. The data was authored by world-renown experts in the field of Dravet syndrome, Berten Ceulemans, M.D., Ph.D. and Lieven Lagae, M.D., Ph.D., from the Universities of Antwerp and Leuven in Belgium, and was presented at the European Paediatric Neurology Society meeting taking place this week in Vienna, Austria (see study data here). Zogenix intends to initiate Phase 3 clinical studies for ZX008, the Company's investigational proprietary pediatric formulation of low-dose fenfluramine, during the second half of 2015. ZX008 is designated as an orphan drug in both the U.S. and Europe for the treatment of Dravet syndrome.

Patients with Dravet syndrome experience frequent, severe and potentially life-threatening seizures that typically start in the first year of life. These seizures do not respond to standard anti-epileptic medications and current treatment options are very limited.

Clinical Efficacy Data

Clinical Efficacy Data

"The most important element of treating patients with Dravet syndrome is to reduce the frequency of all seizures and to prevent status epilepticus, which is a continuous state of seizure," said Prof. Berten Ceulemans. "As this most recent data analysis demonstrates, in our experience, we have been able to achieve major seizure control for Dravet syndrome patients using a low-dosage form of fenfluramine as adjunctive therapy. It is my hope that these outcomes will be replicated in the Phase 3 program to be undertaken by Zogenix."

"We continue to be encouraged by the results of the ongoing open-label study of the use of low-dose fenfluramine in patients with Dravet syndrome. It is very exciting to observe a reduction of greater than or equal to 75% in seizure frequency for at least 80% of patients over the latest 5-year follow-up period with the use of fenfluramine as an add-on treatment. In addition, there continues to be a majority of Dravet patients who experience sustained periods of seizure-freedom. We believe these data represent the most robust, long-term data set of any investigational treatment for Dravet syndrome, especially since some of these patients have been treated for well over 20 years," said Stephen Farr, Ph.D., Chief Executive Officer of Zogenix. Farr continued, "Our current focus is to finalize the Phase 3 study protocol, based on recent feedback received from the U.S. Food and Drug Administration, and initiate the studies of ZX008 in the U.S. and Europe."

The results presented are from the latest 5-year follow-up period (2010-2014) in a group of Dravet syndrome patients being treated with low-dose fenfluramine (10 mg to 20 mg per day). This analysis, which includes ten patients from the original study group (as published in 2012[1]) and two patients who began treatment in 2011, demonstrated that during any given year of the follow-up period, at least 80% of patients achieved a greater than or equal to 75% reduction in the frequency of seizures. In addition, three patients (25%) were seizure-free for all 5 years and five patients (42%) were seizure-free for 2 to 4 years. The use of low-dose fenfluramine in this group of patients was shown to be generally well tolerated, with the most common adverse events being transient loss of appetite and fatigue/somnolence. No clinically meaningful cardiac adverse events were noted. No patient discontinued treatment due to adverse events.

In addition, a recently published translational research study[2] to elucidate fenfluramine's mechanism of action in Dravet syndrome demonstrated the ability of fenfluramine to significantly reduce locomotion and eliminate epileptiform EEG activity in a gene knockdown zebrafish model of Dravet syndrome. These data support the clinical results obtained in the Belgium cohort of patients.

Clinical Efficacy Data

Categorical response to low-dose fenfluramine in Dravet syndrome patients:

http://media.globenewswire.com/cache/35369/file/34413.pdf

Clinical Safety Data

Cardiovascular evaluations, including echocardiogram every 3 months during Year 1, every 6 months during Year 2, and annually thereafter, demonstrated: Valvular thickening observed at only 1 examination in 5 patients and not seen at any other examination; observed 4 times in one patient, but was normal at most recent examination.

- No cases of pulmonary hypertension were observed
- None of these patients exhibited clinical signs or symptoms associated with valvular thickening or restrictive valve disease

Other adverse events included transient loss of appetite, fatigue/somnolence, mild obesity, and behavior problems in a minority of patients.

About ZX008

ZX008 is a low-dose fenfluramine formulated for pediatric use and is currently under evaluation for the reduction of seizures in Dravet syndrome patients. Fenfluramine was originally developed and approved as an anoretic agent for the treatment of obesity. Although fenfluramine was withdrawn from the market in 1997 due to risk in the indicated patient population of serious heart valve defects, preclinical and clinical evidence of the drug's ability to abolish epileptic seizures had previously been described. In Belgium, under a Royal Decree, the anticonvulsive effects of fenfluramine continued to be evaluated using the limited supply of drug in a clinical trial involving a small group of patients diagnosed with Dravet syndrome. The study is continuing today with fenfluramine sourced by Zogenix, manufactured from a synthetic process consistent with current regulatory standards for drug substances; both

clinical and commercial supply manufacturers have now been selected. ZX008 has been granted orphan drug designation by regulatory agencies in the U.S. and Europe, and an application is pending in Japan. Phase 3 clinical studies will be initiated by Zogenix in the second half of 2015 with New Drug Application (NDA) and Marketing Authorization Application (MAA) submissions targeted for the fourth quarter of 2016.

About Dravet Syndrome

Dravet syndrome (also known as Severe Myoclonic Epilepsy of Infancy) is a rare, severe and therapy-resistant form of epilepsy most often caused by an identifiable gene defect that results in abnormal functioning of a sodium channel in the brain. Children with Dravet syndrome experience severe, long-lasting, fever-related seizures in the first year of life. Other seizures typically arise later, including myoclonus (involuntary muscle spasms) and status epilepticus (prolonged seizures), which often result in severe cognitive and developmental impairment. Episodes of status epilepticus require immediate emergency care and can be fatal.

Individuals with Dravet syndrome face a higher incidence of SUDEP (sudden unexplained death in epilepsy) and have associated conditions, which also require proper treatment and management. Children with Dravet syndrome do not outgrow this condition and it affects every aspect of their daily lives.

About Zogenix

Zogenix, Inc. (Nasdaq:ZGNX) is a pharmaceutical company committed to developing and commercializing therapies that address specific clinical needs for people living with CNS disorders who need innovative treatment alternatives to help them return to normal daily functioning.

For more information, visit www.zogenix.com.

Forward-Looking Statements

Zogenix cautions you that statements included in this press release that are not a description of historical facts are forward-looking statements. Words such as "believes," "indicates," "will," "plans," "designed" and similar expressions are intended to identify forward-looking statements. These statements are based on the company's current beliefs and expectations. These forward-looking statements include statements regarding: the timing of the commencement of Phase 3 clinical studies for ZX008 and the potential to replicate earlier results in such studies; and the potential timing of an NDA and MAA submission for ZX008. Actual results may differ from those set forth in this release due to the risk and uncertainties inherent in Zogenix's business, including, without limitation: the inherent risks of clinical development of ZX008, and Zogenix's dependence on third parties in such development; the potential that earlier clinical studies may not be predictive of future results; unexpected adverse side effects or inadequate therapeutic efficacy of ZX008 that could limit approval and/or commercialization, or that could result in recalls or product liability claims; other difficulties or delays relating to the development, testing, manufacturing and marketing of and obtaining regulatory approval for ZX008; and other risks detailed in Zogenix's prior press releases as well as in public periodic filings with the Securities and Exchange Commission. You are cautioned not to place undue reliance on these forward-looking statements, which speak only as of the date hereof, and Zogenix undertakes no obligation to revise or update this press release to reflect events or circumstances after the date hereof. All forward-looking statements are qualified in their entirety by this cautionary statement. This caution is made under the safe harbor provisions of Section 21E of the Private Securities Litigation Reform Act of 1995.

[1]Ceulemans, Berten, et al. Successful use of fenfluramine as an add-on treatment for Dravet syndrome. EPILEPSIA. July 2012; 53(7):1131-1139.

[2]Zhang, Yifen, et al. Pharmacological Characterization of an Antisense Knockdown Zebrafish Model of Dravet Syndrome: Inhibition of Epileptic Seizures by the Serotonin Agonist Fenfluramine. PLOS. May 12, 2015.

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