CORRECTING and REPLACING New England Journal of Medicine Publishes Data from Phase 2 Study of Asfotase Alfa in Life-Threatening Hypophosphatasia

CHESHIRE, Conn.--(BUSINESS WIRE)--

First subhead should read: Study of First-In-Class Therapy Met Primary Endpoint with 90 Percent of Patients Showing Substantial Skeletal Healing at 24 Weeks (sted ...24 Months).

The corrected release reads:

***NEW ENGLAND JOURNAL OF MEDICINE* PUBLISHES DATA FROM PHASE 2 STUDY OF ASFOTASE ALFA IN LIFE-THREATENING HYPOPHOSPHATASIA**

— Study of First-In-Class Therapy Met Primary Endpoint with 90 Percent of Patients Showing Substantial Skeletal Healing at 24 Weeks —

— Key Secondary Endpoints Including Improvement in Cognitive Development and Motor and Pulmonary Function Also Achieved —

Alexion Pharmaceuticals, Inc. (Nasdaq: ALXN) today announced that asfotase alfa (formerly known as ENB-0040), a highly innovative investigational targeted enzyme replacement therapy, was shown to improve skeletal abnormalities, pulmonary and physical function, and cognitive development in a Phase 2 study of infants and young children with life-threatening hypophosphatasia (HPP). Alexion is developing asfotase alfa as a potential treatment for patients with HPP, an ultra-rare, genetic, life-threatening metabolic disease for which there are currently no approved or effective treatment options. Findings from the study are published in the March 8th issue of the *New England Journal of Medicine.*

Due to a genetic enzyme deficiency, symptomatic patients with HPP face progressive damage to multiple vital organs including destruction and deformity of bones, profound muscle weakness, seizures, impaired renal function, and respiratory failure.[1,2,3,4] About half of newborns with HPP do not survive past one year of age.[1]

"This inborn error of metabolism can cause progressive skeletal deterioration and muscle weakness in severely affected infants and very young children with HPP, leading to respiratory insufficiency and significant mortality," said lead study author Michael P. Whyte, M.D., Medical-Scientific Director, Center for Metabolic Bone Disease and Molecular Research, Shriners Hospitals for Children, St. Louis. "In this study of patients with severe perinatal and infantile forms of HPP, we saw in nearly all patients striking skeletal healing that included improved bone formation and reduced deformity, as well as improved pulmonary function and motor development. These findings are remarkable given the historically grim outlook for patients with life-threatening HPP."

About the Study

The multinational, open-label Phase 2 study of asfotase alfa enrolled 11 patients with HPP ages 3 years or younger whose symptoms began before the age of 6 months. Patients in the study received asfotase alfa for six months and then had the opportunity to enroll in an open-label extension study.

The primary efficacy endpoint was change in the skeletal manifestations of HPP, as assessed by radiography. Response to treatment was defined as a mean improvement of two or more points, as rated by a panel of three independent radiologists, on a seven-point scale known as the radiographic global impression of change (RGI-C). Skeletal changes were also assessed using a 10-point scale that measured skeletal abnormalities at the wrists and knees. Additional efficacy assessments included evaluations of respiratory status, gross motor function, and cognitive development (Bayley-III scale).

Ten patients completed the six-month study and nine patients are currently participating in the extension study. All patients treated with asfotase alfa demonstrated an improvement in two key biochemical indicators of HPP: blood levels of PPi (inorganic pyrophosphate) and PLP (pyridoxal 5' phosphate). For the primary efficacy endpoint, nine of 10 patients (90%) met the criterion for treatment response by week 24, and eight of nine (89%) achieved treatment response by week 48. Skeletal healing became apparent as early as week 3.

Respiratory function improved in all patients. These improvements were evident as early as week 12. Compared to the 10 of 11

patients who required respiratory support at baseline, at week 48 only three of nine patients required any respiratory support and only one patient remained on full mechanical ventilation. In addition to the improvements in bone mineralization and respiratory function, there were improvements in fine motor, gross motor and cognitive development, as assessed by the Bayley-III instrument, for seven of the eight patients who were evaluated. Whereas at baseline, no patients were able to bear weight through their legs owing to skeletal abnormalities and muscle weakness, at 48 weeks of treatment, seven of nine patients were able to bear weight through their legs.

The most common treatment-related adverse event observed in the study was mild injection-site reaction. Severe adverse events observed in the study were generally consistent with the symptoms expected of patients with severe HPP, including infection, respiratory disorders, and nervous-system complications. One patient died, and this was determined to not be related to study drug.

"We are thrilled that asfotase alfa has shown significant improvement in the skeletal, respiratory, and developmental symptoms of HPP," said Deborah Sittig, Founder of Soft Bones, the U.S. Hypophosphatasia Foundation. "HPP can be a very challenging disease for families to manage, especially in the absence of a safe and effective treatment. Today, with these compelling study results, we have the first real promise of a treatment for HPP."

Patients continue to be evaluated in the extension study, with mean treatment duration of 18 months and some patients treated for more than three years. Asfotase alfa has also been studied in a Phase 2 study in juvenile patients (ages 5 to 12) with HPP and is currently being evaluated in additional studies in pediatric and adult patients with HPP.

"These published findings from the Phase 2 investigational study in infants and young children provide strong support for the potential of asfotase alfa to correct the underlying enzyme deficiency in patients with HPP, with a positive impact on the severe and life-threatening metabolic complications of the disease," said Leonard Bell, M.D., Chief Executive Officer of Alexion. "We are continuing to drive the development of asfotase alfa in infants, children, and adults with HPP with the objective of bringing the first approved treatment to patients and families with this disease."

About Hypophosphatasia (HPP)

HPP is an ultra-rare, genetic, and life-threatening metabolic disease characterized by defective bone mineralization and impaired phosphate and calcium regulation that can lead to progressive damage to multiple vital organs including destruction and deformity of bones, profound muscle weakness, seizures, impaired renal function, and respiratory failure.[1,2,3,4] The genetic deficiency in HPP can affect people of all ages with a wide-ranging severity, and approximately 50 percent of infants with severe disease do not survive past one year of age.[1]

HPP is caused by a genetic deficiency of an enzyme known as tissue non-specific alkaline phosphatase (TNSALP), which causes life-long abnormalities in metabolism of two minerals, calcium and phosphate, leading directly to the debilitating morbidities and premature mortality of the disease.[1] There are currently no therapies approved for HPP.[1]

About Asfotase Alfa

Asfotase alfa is an investigational, highly innovative, first-in-class targeted enzyme replacement therapy designed to address the underlying cause of HPP by targeting replacement of the missing enzyme to the necessary body tissues. Asfotase alfa is designed to normalize the genetically defective metabolic process and prevent or reverse the severe and life-threatening complications of life-long dysregulated mineral metabolism in patients with HPP.

About Alexion

Alexion Pharmaceuticals, Inc. is a biopharmaceutical company focused on serving patients with severe and ultra-rare disorders through the innovation, development and commercialization of life-transforming therapeutic products. Alexion is the global leader in complement inhibition, and has developed and markets Soliris® (eculizumab) as a treatment for patients with paroxysmal nocturnal hemoglobinuria (PNH) and atypical hemolytic uremic syndrome (aHUS), two debilitating, ultra-rare and life-threatening disorders caused by chronic uncontrolled complement activation. Soliris is currently approved in more than 35 countries for the treatment of PNH, and in the United States and the European Union for the treatment of aHUS. Alexion is evaluating other potential indications for Soliris and is developing four other highly innovative biotechnology product candidates, including asfotase alfa. This press release and further information about Alexion Pharmaceuticals, Inc. can be found at: www.alexionpharma.com.

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Safe Harbor Statement

This news release contains forward-looking statements, including statements related to potential medical benefits of asfotase alfa for hypophosphatasia (HPP). Forward-looking statements are subject to factors that may cause Alexion's results and plans to differ from those expected, including for example, decisions of regulatory authorities regarding marketing approval or material limitations on the marketing of asfotase alfa for HPP, delays in arranging satisfactory manufacturing capabilities and establishing commercial infrastructure for asfotase alfa for HPP, the possibility that results of clinical trials are not predictive of safety and efficacy results of asfotase alfa in broader or different patient populations, the risk that third party payors (including governmental agencies) will not reimburse for the use of asfotase alfa (if approved) at acceptable rates or at all, the risk that estimates regarding the number of patients with asfotase alfa and observations regarding the natural history of patients with asfotase alfa are inaccurate, and a variety of other risks set forth from time to time in Alexion's filings with the Securities and Exchange Commission, including but not limited to the risks discussed in Alexion's Annual Report on Form 10-K for the year ended December 31, 2011 and in our other filings with the Securities and Exchange Commission. Alexion does not intend to update any of these forward-looking statements to reflect events or circumstances after the date hereof, except when a duty arises under law.

References

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