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Strensiq® (asfotase alfa) Receives Marketing Approval in Japan for Treatment of Patients with Hypophosphatasia (HPP)

- First Approved Treatment for Japanese Patients Suffering from HPP, a Life-Threatening Ultra-Rare Metabolic Disorder -

CHESHIRE, Conn.--(BUSINESS WIRE)-- Alexion Pharmaceuticals, Inc. (NASDAQ:ALXN) announced today that Japan's Ministry of Health, Labour and Welfare (MHLW) approved the Company's New Drug Application (NDA) for the use of Strensiq® (asfotase alfa) as a treatment for patients in Japan with hypophosphatasia (HPP), a life-threatening, ultra-rare metabolic disorder. Strensiq, a bone-targeted enzyme replacement therapy, is the first therapy approved in Japan for the treatment of patients with HPP. Alexion expects that initial patients with HPP in Japan will start commercial treatment with Strensiq by late Q3 2015.

"The rapid approval of the Strensiq NDA in Japan underscores the devastating nature of HPP and the life-transforming impact that Strensiq can provide to Japanese patients living with HPP," said David Hallal, Chief Executive Officer of Alexion. "We are delighted that this regulatory approval in Japan marks the first treatment option for patients with HPP, and we look forward to urgently working with the healthcare authorities to make Strensiq available to Japanese patients who can benefit from this therapy. I would also like to thank the investigators, patients, and their families in Japan who participated in the clinical trial that led to this approval."

HPP is a genetic, progressive, ultra-rare metabolic disease in which patients experience devastating effects on multiple systems of the body, leading to debilitating or life-threatening complications. It is characterized by defective bone mineralization that can lead to deformity of bones and other skeletal abnormalities, as well as systemic complications such as profound muscle weakness, seizures, pain, and respiratory failure leading to premature death in infants.[1-5] As reflected in the prescribing information in Japan, infants with HPP treated with Strensiq had 84% overall survival, as estimated by Kaplan-Meier analysis, at 168 weeks.

"Hypophosphatasia is an ultra-rare disease with diverse clinical symptoms that may be difficult to diagnose. It can be a lethal disease in Japanese newborns and infants which has led to significant challenges since there have been no approved treatment options," said Professor Ozono, Department of Pediatrics Osaka University. "I am greatly delighted that the first treatment has been approved for HPP. The patients and physicians in Japan who participated in the Strensiq clinical trials have played a critical role in generating valuable data and we appreciate their contributions in enabling the approval of Strensiq. I look forward to using Strensiq in clinical practice and continuing to advance the understanding of HPP diagnosis and treatment."

"Today's approval marks a major turning point for patients and their families in Japan who have waited a long time for a treatment for hypophosphatasia," said Mr. Hara, Director of HypoPhosPhatasia Support Association of Japan. "The approval of Strensiq offers great hope to patients who previously suffered in the absence of an effective therapy, as well as to the healthcare professionals and families who care for and support them."

Alexion has submitted a Biologics License Application for Strensiq with the U.S. Food and Drug Administration, which was accepted for priority review, and received a positive CHMP opinion recommending marketing authorization for Strensiq for patients with pediatric-onset HPP in Europe. Regulatory decisions in the U.S. and Europe are expected in the second half of 2015.

Clinical Data

The approval of Strensiq in Japan was based on clinical data from three pivotal prospective studies and their extensions, a retrospective natural history study in infants, and one investigator-sponsored study in Japan. The pivotal studies comprised 71 patients, including five Japanese patients, with infantile and juvenile-onset HPP (ages 1 day to 65 years). Study results showed that patients with infantile-onset HPP (ages ≤5 years at enrollment) treated with Strensiq demonstrated rapid and sustained improvements in bone mineralization, as measured by the Radiographic Global Impression of Change (RGI-C) scale, which evaluates the severity of rickets based on X-ray images. In addition, infants with HPP treated with Strensiq had 84% overall survival, as estimated by Kaplan-Meier analysis, at 168 weeks. Patients with juvenile-onset HPP treated with Strensiq demonstrated superior improvements in bone health compared to a control group of HPP patients selected from a natural history database, as well as improvements in ambulation, physical function and growth.

The most frequently reported adverse events observed with Strensiq treatment in clinical studies were injection site reactions

and injection-associated reactions. Most of these adverse events were mild to moderate in severity. Serious injection-associated reactions were reported in two patients, with neither patient discontinuing Strensiq treatment: one patient with infantile-onset HPP reported fever and chills, and one patient with juvenile-onset HPP reported numbness of lips, leg pain, chills, and headache.

About Hypophosphatasia (HPP)

HPP is a genetic, chronic and progressive ultra-rare metabolic disease characterized by defective bone mineralization that can lead to destruction and deformity of bones, profound muscle weakness, seizures, respiratory failure and premature death.[1-5]

HPP is caused by mutations in the gene encoding an enzyme known as tissue non-specific alkaline phosphatase (TNSALP).[1,2] The genetic deficiency in HPP can affect people of all ages.[1] HPP is classified by the age of the patient at the onset of symptoms of the disease, with infantile- and juvenile-onset HPP defined as manifestation of the first symptom prior to 18 years of age.

HPP can have devastating consequences for patients at any stage of life.[1] In a natural history study, infants who had their first symptom of HPP within the first 6 months of life had high mortality, with an overall mortality rate of 73% at 5 years.[6] In these patients, mortality is primarily due to respiratory failure.[1,5,7] In patients surviving to adolescence and adulthood, long-term clinical sequelae include recurrent and non-healing fractures, profound muscle weakness, debilitating pain and the requirement for ambulatory assistive devices such as wheelchairs, wheeled walkers and canes.[1,4]

About Strensiq® (asfotase alfa)

Strensiq® (asfotase alfa) is a first-in-class bone-targeted enzyme replacement therapy designed to address the underlying cause of HPP—deficient alkaline phosphatase (ALP). By replacing deficient ALP, treatment with Strensiq aims to improve the elevated enzyme substrate levels and improve the body's ability to mineralize bone, thereby preventing serious skeletal and systemic patient morbidity and premature death.

Strensiq has been granted orphan drug designation by the U.S. Food and Drug Administration (FDA), the European Medicines Agency (EMA), and the Japanese Ministry of Health, Labour and Welfare (MHLW). Alexion has submitted a Biologics License Application for Strensiq with the U.S. Food and Drug Administration, which was accepted for priority review, and a Marketing Authorization Application for Strensiq in Europe is under review.

About Alexion

Alexion is a global biopharmaceutical company focused on developing and delivering life-transforming therapies for patients with devastating and rare disorders. Alexion developed and commercializes Soliris® (eculizumab), the first and only approved complement inhibitor to treat patients with paroxysmal nocturnal hemoglobinuria (PNH) and atypical hemolytic uremic syndrome (aHUS), two life-threatening ultra-rare disorders. Alexion is also establishing a premier global metabolic rare disease franchise with the development of two late-stage therapies, Strensiq™ (asfotase alfa) for hypophosphatasia (HPP) and Kanuma™ (sebelipase alfa) for Lysosomal Acid Lipase Deficiency (LAL-D). In addition, Alexion is advancing the most robust rare disease pipeline in the biotech industry, with highly innovative product candidates in multiple therapeutic areas. As the global leader in complement inhibition, the Company is strengthening and broadening its portfolio of complement inhibitors across diverse platforms, including evaluating potential indications for Soliris in additional severe and ultra-rare disorders. This press release and further information about Alexion can be found at: www.alexion.com.

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Safe Harbor Statement

This news release contains forward-looking statements, including statements related to potential medical benefits of Strensiq® (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 Strensiq for HPP, delays in arranging satisfactory manufacturing capabilities and establishing commercial infrastructure for Strensiq for HPP, the possibility that results of clinical trials are not predictive of safety and efficacy results of Strensiq in broader or different patient populations, the risk that third party payors (including governmental agencies) will not reimburse for the use of Strensiq at acceptable rates or at all, the risk that estimates regarding the number of patients with Strensiq and observations regarding the natural history of patients with Strensiq 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 Quarterly Report on Form 10-Q for the period ended March 31,

2015. 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

1. Rockman-Greenberg C. Hypophosphatasia. Pediatr Endocrinol Rev. 2013; 10(suppl 2):380-388.

2. Whyte MP. Hypophosphatasia: nature's window on alkaline phosphatase function in humans. In: Bilezikian JP, Raisz LG, Martin TJ, eds. Principles of Bone Biology. Vol 1. 3rd ed. San Diego, CA: Academic Press; 2008:1573-1598.

3. Whyte MP, Greenberg CR, Salman N, et al. Enzyme-replacement therapy in life-threatening hypophosphatasia. N Engl J Med. 2012; 366(10):904-913.

4. Seshia SS, Derbyshire G, Haworth JC, Hoogstraten J. Myopathy with hypophosphatasia. Arch Dis Child. 1990; 65(1):130-131.

5. Baumgartner-Sigl S, Haberlandt E, Mumm S, et al. Pyridoxine-responsive seizures as the first symptom of infantile hypophosphatasia caused by two novel missense mutations (c.677T > C, p.M226T; c.1112C > T, p.T371I) of the tissue-nonspecific alkaline phosphatase gene. Bone. 2007; 40(6):1655-1661.

6. Whyte MP, Leung E, Wilcox W, et al. Hypophosphatasia: a retrospective natural history study of the severe perinatal and infantile forms. Poster presented at the 2014 Pediatric Academic Societies and Asian Society for Pediatric Research Joint Meeting, Vancouver, B.C., Canada, May 5, 2014. Abstract 752416.

7. Whyte MP, Rockman-Greenberg C, Hofmann C, et al. Improved survival with asfotase alfa treatment in pediatric patients with hypophosphatasia at high risk of death. Poster presented at the American Society for Bone and Mineral Research (ASBMR) 2014 Annual Meeting, Houston, September 14, 2014. Abstract 1097.

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