Biogen Announces First Patient Treated With Higher Dose of SPINRAZA® (nusinersen) in Phase 2/3 DEVOTE Study

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- DEVOTE will evaluate the safety and potential for even greater efficacy of a higher dose of SPINRAZA in the treatment of spinal muscular atrophy (SMA)
- Well-established safety profile and proven efficacy of SPINRAZA in a broad range of patients supports exploration of the higher dose
- Biogen continues to invest in SPINRAZA clinical development and ongoing research in SMA, for which there is currently no cure

CAMBRIDGE, Mass., April 02, 2020 (GLOBE NEWSWIRE) -- Biogen (Nasdaq: BIIB) today announced that the first patient has been treated in the global clinical study, DEVOTE. The study is designed to evaluate the safety, tolerability and potential for even greater efficacy of SPINRAZA (nusinersen) when administered at a higher dose than currently approved for the treatment of spinal muscular atrophy (SMA). The Phase 2/3 randomized, controlled, dose-escalating study will be conducted at approximately 50 sites around the world and aims to enroll individuals of all ages with SMA.

"Today, people of all ages with SMA are achieving better outcomes related to survival, mobility and independence, yet there is still no cure and unmet needs remain for many," said Kenneth Hobby, President of Cure SMA, a patient advocacy organization dedicated to the treatment and cure of SMA. "Our community is energized by the advances we've made and believes that ongoing research like the DEVOTE study is instrumental to help deepen our understanding and potentially further transform and improve what it means to live with SMA."

The three-part study will include an open-label safety evaluation cohort and a pivotal, double-blind, active control randomized treatment cohort followed by an open-label treatment cohort. After the safety evaluation cohort completes, the pivotal cohort will begin and include a treatment group receiving two loading doses of 50 milligrams (mg) 14 days apart, followed by a maintenance dose of 28 mg every four months. A second treatment group will receive the current U.S. Food and Drug Administration-approved administration of SPINRAZA, which is four loading doses with 12 mg maintenance doses every four months. The third cohort will be an open-label evaluation to assess the safety and tolerability of transitioning patients from the currently approved dose of SPINRAZA to the higher dose being tested in the study.

"As the first treatment for SMA, SPINRAZA fundamentally shifted the disease course compared to natural history, allowing many individuals to reach milestones that may have been previously unattainable," said Alfred Sandrock Jr., M.D., Ph.D., Executive Vice President, Research and Development at Biogen. "With the success we've seen to date with the 12 mg dose, we are exploring a higher dose of SPINRAZA for the potential to deliver even better clinical outcomes."

More information on the study (NCT04089566) is available at clinicaltrials.gov.

About SPINRAZA® (nusinersen)[1-3]
SPINRAZA is the first therapy approved to treat infants, children and adults with spinal muscular atrophy (SMA) and is approved in more than 50 countries. As of December 31, 2019, more than 10,000 individuals have been treated with SPINRAZA. It is the only SMA treatment to combine unsurpassed real-world experience with a robust level of clinical evidence across a broad spectrum of patient populations.

SMA is a rare, genetic, neuromuscular disease that is characterized by a loss of motor neurons in the spinal cord and lower brain stem that can result in severe, progressive muscle atrophy and weakness. Approximately one in 10,000 live births have a diagnosis of SMA, and people of all ages are impacted by the disease. It is a leading genetic cause of infant mortality.

SPINRAZA, a foundation of care in SMA, is an antisense oligonucleotide (ASO) developed using Ionis Pharmaceuticals' proprietary technology that is designed to target a root cause of SMA by increasing the amount of full-length survival motor neuron (SMN) protein, which is critical to maintaining motor neurons. It is administered by intrathecal injection into the fluid surrounding the spinal cord where motor neurons reside to deliver the treatment where the disease starts.

SPINRAZA currently maintains a robust clinical data set in SMA, based on data from approximately 300 patients across a broad range of SMA populations, demonstrating a favorable benefit:risk profile. SPINRAZA was evaluated in two randomized, double-blind, sham-controlled studies of infantile and later-onset SMA (ENDEAR and CHERISH, respectively) and supported by open-label studies that include pre-symptomatic infants (NURTURE), individuals with later-onset SMA (CS2/CS12), and an extension study of individuals who previously participated in the clinical development program (SHINE). The most common adverse events observed were respiratory infection, fever, constipation, headache, vomiting and back pain. Hypersensitivity, meningitis and hydrocephalus have been observed in the post-marketing setting. Renal toxicity and coagulation abnormalities, including acute severe low platelet counts, have been observed after administration of some ASOs. Laboratory tests can monitor for these signs.

Biogen licensed the global rights to develop, manufacture and commercialize SPINRAZA from Ionis Pharmaceuticals, Inc. (Nasdaq: IONS), a leader in antisense therapeutics. Biogen and Ionis conducted an innovative clinical development program that moved SPINRAZA from its first dose in humans in 2011 to its first regulatory approval in five years.

About Biogen
At Biogen, our mission is clear: we are pioneers in neuroscience. Biogen discovers, develops and delivers worldwide innovative therapies for people living with serious neurological and neurodegenerative diseases as well as related therapeutic adjacencies. One of the world's first global biotechnology companies, Biogen was founded in 1978 by Charles Weissmann, Heinz Schaller, Kenneth Murray and Nobel Prize winners Walter Gilbert and Phillip Sharp. Today Biogen has the leading portfolio of medicines to treat multiple sclerosis, has introduced the first approved treatment for spinal muscular atrophy, commercializes biosimilars of advanced biologics and is focused on advancing research programs in multiple sclerosis and neuroimmunology, Alzheimer's disease and dementia, neuromuscular disorders, movement disorders, ophthalmology, immunology, neurocognitive disorders, acute neurology and pain.

We routinely post information that may be important to investors on our website at www.biogen.com. To learn more, please visit www.biogen.com and follow us on social media – Twitter, LinkedIn, Facebook, YouTube.

Biogen Safe Harbor
This news release contains forward-looking statements, including statements made pursuant to the safe harbor provisions of the Private Securities Litigation Reform Act of 1995, about the potential benefits, safety and efficacy of SPINRAZA; the results of certain real-world data; the identification and treatment of SMA; our research and development program for the treatment of SMA; the potential benefits and results from early treatment of SMA; the enrollment of the DEVOTE study; risks and uncertainties associated with drug development and commercialization; and the potential of our commercial business, including SPINRAZA. These statements may be identified by words such as “aim,” “anticipate,” “believe,” “could,” “estimate,” “expect,” “forecast,” “goal,” “intend,” “may,” “plan,” “possible,” “potential,” “will,” “would” and other words and terms of similar meaning. You should not place undue reliance on these statements or the scientific data presented.

These statements involve risks and uncertainties that could cause actual results to differ materially from those reflected in such statements, including without limitation risks that we may not fully enroll the DEVOTE study or it will take longer than expected; uncertainty of success in the development and potential commercialization of higher dose SPINRAZA; unexpected concerns that may arise from additional data, analysis or results obtained during the DEVOTE study; regulatory authorities may require additional information or further studies, or may fail or refuse to approve or may delay approval of higher dose SPINRAZA; the occurrence of adverse safety events; risks of unexpected costs or delays; the risks of other unexpected hurdles; failure to protect and enforce our data, intellectual property and other proprietary rights and uncertainties relating to intellectual property claims and challenges; regulatory authorities may require additional information or further studies; product liability claims; third party collaboration risks; and the impact related to the effect of COVID-19 or other public health epidemics on our sales and operations, including employees. The foregoing sets forth many, but not all, of the factors that could cause actual results to differ from our expectations in any forward-looking statement. Investors should consider this cautionary statement, as well as the risk factors identified in our most recent annual or quarterly report and in other reports we have filed with the U.S. Securities and Exchange Commission. These statements are based on our current beliefs and expectations and speak only as of the date of this news release. We do not undertake any obligation to publicly update any forward-looking statements, whether as a result of new information, future developments or otherwise.
References:

1. As of December 31, 2019, more than 10,000 patients have been treated with SPINRAZA, including commercial patients, early access patients and clinical trial participants.
2. Finkel R, Chiriboga C, Vajsar J, et al. Treatment of infantile-onset spinal muscular atrophy with nusinersen: a phase 2, open-label, dose-escalation study. Lancet. 2016;388(10063):3017-3026.
3. Darras B, Markowitz J, Monani U, De Vivo D. Chapter 8 - Spinal Muscular Atrophies. In: Vivo BTD, ed. Neuromuscular Disorders of Infancy, Childhood, and Adolescence (Second Edition). San Diego: Academic Press; 2015:117-145.

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