Biogen Announces Positive Topline Results from Study of Higher Dose Regimen of Nusinersen, Showing Significant Benefit in Treatment of SMA

September 4, 2024

- Positive study demonstrates the potential for investigational higher dose nusinersen regimen to advance the treatment of SMA; Biogen plans to submit for regulatory approval of this investigational dose regimen
- Higher dose nusinersen regimen showed statistically significant improvement compared to a prespecified matched sham control group
- Among key measures of clinical efficacy, higher dose regimen showed positive trends compared to the approved dosing regimen

CAMBRIDGE, Mass., Sept. 04, 2024 (GLOBE NEWSWIRE) -- Biogen Inc. (Nasdaq: BIIB) today announced positive, topline data from the pivotal cohort (Part B) of the Phase 2/3 DEVOTE study evaluating the safety and efficacy of a higher dose regimen of nusinersen in treatment-naïve, symptomatic infants with spinal muscular atrophy (SMA). The investigational higher dose regimen of nusinersen comprises a more rapid loading regimen, two 50 mg doses 14 days apart, and a higher maintenance regimen, 28 mg, every 4 months, compared to the approved nusinersen regimen (SPINRAZA). The study met its primary endpoint at six months, achieving a statistically significant improvement in motor function in infants who received the higher dose regimen as compared to a prespecified matched sham (untreated) control group from the ENDEAR study.

“While there has been remarkable progress in the treatment of SMA, there remains significant unmet need. Building on the well-characterized profile of SPINRAZA established over the past 10 years, we continue to explore the potential for maximizing efficacy outcomes while maintaining our commitment to safety,” said Stephanie Fradette, Pharm.D., Head of the Neuromuscular Development Unit at Biogen. “The encouraging topline results from DEVOTE show that the higher dose regimen can slow neurodegeneration faster, as shown by greater reductions in neurofilament at day 64 relative to the approved dose. Over time, the higher dose regimen led to meaningful clinical benefit in infants with symptomatic SMA. We look forward to sharing the detailed results with the SMA community and health authorities.”

DEVOTE is a three-part study that enrolled 145 patients across ages and SMA types. The pivotal Part B cohort was comprised of treatment-naïve children with infantile-onset SMA (n=75) who were randomized 2:1 to receive the investigational higher dose regimen of nusinersen or the approved 12 mg regimen (comprising four loading doses and maintenance doses every four months). The primary endpoint of Part B measured the change from baseline on the Children's Hospital of Philadelphia-Infant Test of Neuromuscular Disorders (CHOP-INTEND) at six months comparing the higher dose regimen of nusinersen to a matched, untreated sham control group from the Phase 3 ENDEAR study. ENDEAR is one of the two pivotal studies that formed the basis of regulatory approval for SPINRAZA® 12 mg.

The higher dose cohort showed statistically significant improvement over the matched sham comparator on the primary endpoint of change in CHOP-INTEND from baseline to six months (least squares mean difference: 26.19; $p<0.0001$). Results favored the higher dose regimen relative to sham across secondary endpoints and trended in favor of the higher dose regimen over the currently approved 12mg regimen on key biomarker and efficacy measures. The higher dose regimen was generally well tolerated, with reported adverse events generally consistent with SMA and the known safety profile of nusinersen. The percentage of serious adverse events was lower in the higher dose regimen (60%; 30) as compared to the 12 mg group (72%; 18). Detailed results from DEVOTE will be presented at upcoming medical conferences.

More information about the DEVOTE study (NCT04089566) is available at clinicaltrials.gov. Nusinersen is currently commercialized under the brand name SPINRAZA and the U.S. Food and Drug Administration-approved dose is 12 mg.

About the DEVOTE Study
DEVOTE was a Phase 2/3 randomized, controlled, dose-escalating study designed to evaluate the safety, tolerability, pharmacokinetics and potential for even greater efficacy of nusinersen when administered at a higher dose (50 mg/28 mg) than currently approved regimen (12 mg) for the treatment of spinal muscular atrophy (SMA). The study enrolled 145 patients across ages and SMA types at approximately 42 sites around the world. DEVOTE includes an open-label safety evaluation cohort (Part A), a double-blind, active control randomized treatment cohort (Part B), followed by an open-label treatment cohort (Part C) 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. Part B is comprised of an infantile-onset cohort which is considered pivotal and a later-onset cohort.

About SPINRAZA
SPINRAZA is approved in more than 71 countries to treat infants, children and adults with spinal muscular atrophy (SMA). As a foundation of care in SMA, more than 14,000 individuals have been treated with SPINRAZA worldwide.[1]

SPINRAZA is an antisense oligonucleotide (ASO) that targets the underlying cause of motor neuron loss by continuously increasing the amount of full-length survival motor neuron (SMN) protein produced in the body.[2] It is administered directly into the central nervous system, where motor neurons reside, to deliver treatment where the disease starts.[2]

SPINRAZA has shown sustained efficacy across ages and SMA types with a well-established safety profile based on data in patients treated up to 10 years,[3,4] combined with unsurpassed real-world experience. The nusinersen clinical development program encompasses more than 10 clinical studies, which have included more than 460 individuals across a broad spectrum of patient populations, including two randomized controlled studies (ENDEAR and CHERISH). The NURTURE open-label extension study is evaluating the long-term impact of SPINRAZA. The most common adverse events observed in clinical studies were respiratory infection, fever, constipation, headache, vomiting and back pain. Laboratory tests can monitor for renal toxicity and coagulation abnormalities, including acute severe low platelet counts, which have been observed after administration of some ASOs.

Biogen licensed the global rights to develop, manufacture and commercialize SPINRAZA from Ionis Pharmaceuticals, Inc. (Nasdaq: IONS). Please click here for Important Safety Information and full Prescribing Information for SPINRAZA in the U.S., or visit your respective country’s product

website.

About Biogen
Founded in 1978, Biogen is a leading biotechnology company that pioneers innovative science to deliver new medicines to transform patients' lives and to create value for shareholders and our communities. We apply deep understanding of human biology and leverage different modalities to advance first-in-class treatments or therapies that deliver superior outcomes. Our approach is to take bold risks, balanced with return on investment to deliver long-term growth.

We routinely post information that may be important to investors on our website at www.biogen.com. Follow us on social media - Facebook, LinkedIn, X, YouTube.

Biogen Safe Harbor
This news release contains forward-looking statements, including related to the potential clinical effects of SPINRAZA; the potential benefits, safety and efficacy of SPINRAZA; the clinical development program for SPINRAZA; the identification and treatment of SMA; our research and development program for the treatment of SMA; the potential of our commercial business and pipeline programs, including SPINRAZA; and risks and uncertainties associated with drug development and commercialization. These forward-looking statements may be accompanied by words such as "aim," "anticipate," "believe," "could," "estimate," "expect," "forecast," "intend," "may," "plan," "potential," "possible," "will," "would" and other words and terms of similar meaning. Drug development and commercialization involve a high degree of risk, and only a small number of research and development programs result in commercialization of a product. Results in early-stage clinical trials may not be indicative of full results or results from later stage or larger scale clinical trials and do not ensure regulatory approval. You should not place undue reliance on our forward-looking statements.

These statements involve risks and uncertainties that could cause actual results to differ materially from those reflected in such statements, including without limitation, uncertainty of success in the development and potential commercialization of SPINRAZA; the risk that we may not fully enroll our clinical trials or enrollment will take longer than expected; unexpected concerns may arise from additional data, analysis or results obtained during our clinical trials; regulatory authorities may require additional information or further studies, or may fail or refuse to approve or may delay approval of our drug candidates, including SPINRAZA; the occurrence of adverse safety events; the risks of unexpected hurdles, costs or delays; failure to protect and enforce our data, intellectual property and other proprietary rights and uncertainties relating to intellectual property claims and challenges; product liability claims; results of operations and financial condition. 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 speak only as of the date of this news release.

We do not undertake any obligation to publicly update any forward-looking statements.

References:

1. Based on commercial patients, early access patients, and clinical trial participants through December 31, 2022.
2. SPINRAZA U.S. Prescribing Information. Available at: https://www.spinraza.com/content/dam/commercial/specialty/spinraza/caregiver/en_us/pdf/spinraza-prescribing-information.pdf. Accessed: July 2024.
3. Core Data sheet, Version 13, October 2021. SPINRAZA. Biogen Inc, Cambridge, MA.
4. Finkle et al. Cure SMA 2024. "Final Safety and Efficacy Data From the SHINE Study in Participants With Infantile-Onset and Later-Onset SMA "

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