TECFIDERA® Data Confirm Strong and Sustained Efficacy in Newly Diagnosed MS Patients and Real-World Effectiveness

April 18, 2016

-- More than Half of Newly Diagnosed MS Patients Taking TECFIDERA Remained Free of Relapse and Disability Progression Over Six Years --

-- New Analyses Show TECFIDERA Associated with Significantly Lower ARR Relative to Glatiramer Acetate, interferon β and Teriflunomide; ARR Similar to Fingolimod --

CAMBRIDGE, Mass.--(BUSINESS WIRE)--Biogen (NASDAQ:BIIB) unveiled new TECFIDERA® (dimethyl fumarate) research that reinforces its strong and sustained efficacy in newly diagnosed relapsing-remitting multiple sclerosis (RRMS) patients and further supports its long-term, well-characterized safety profile. These data were presented today at the 68th annual meeting of the American Academy of Neurology (AAN) in Vancouver, Canada.

Data from a post-hoc analysis show that more than half of newly diagnosed patients treated with TECFIDERA were free from relapses and disability progression for six years, reinforcing that early, effective treatment with TECFIDERA improves long-term clinical outcomes. Additional real-world data from a claims database indicate that TECFIDERA is associated with significantly lower annualized relapse rates (ARR) relative to multiple disease modifying therapies (DMTs), including glatiramer acetate, interferon β and teriflunomide. These rates were similar between TECFIDERA and fingolimod.

“The MS treatment landscape has expanded rapidly in recent years, giving physicians and patients options for various stages of disease. Beyond clinical findings, real-world data provide important insights into patients’ experiences outside of clinical trials,” said Kate Dawson, M.D., vice president, U.S. Medical. “These data show TECFIDERA consistently delivers strong and sustained efficacy in newly diagnosed patients both in a real-world and clinical setting, further supporting the value it offers patients and affirming the advantages of early treatment with TECFIDERA in decreasing clinical disease activity.”

Efficacy in Newly Diagnosed MS Patients

New analyses from the Phase 3 DEFINE, CONFIRM and ENDORSE studies demonstrate long-term treatment with TECFIDERA continued to deliver strong and sustained benefits on relapse and disability measures in newly diagnosed patients (defined as those patients diagnosed with MS within one year prior to enrolling in DEFINE or CONFIRM and either treatment-naïve or previously treated with corticosteroids alone). Results show more than half of these patients remained free from relapses and disability progression over six years of study.

Furthermore, a greater proportion of patients who initiated TECFIDERA treatment at the beginning of DEFINE and CONFIRM maintained these effects on relapses and disability progression compared to those who switched to TECFIDERA treatment in ENDORSE after taking placebo for two years in the parent studies (56.3% versus 50.6%). These data further support the benefits of early treatment with TECFIDERA to help slow the progression of MS.

Understanding Therapeutic Effectiveness in Real-World Setting

Additional data evaluate TECFIDERA relative to glatiramer acetate, interferon β, teriflunomide and fingolimod using U.S. health claims data, to provide a comprehensive understanding of therapeutic effectiveness in a real-world setting.

In both newly diagnosed patients and those with previous DMT experience, TECFIDERA was associated with significantly lower ARR of MS relapse relative to glatiramer acetate, interferon β and teriflunomide. On the same measures, TECFIDERA and fingolimod were similar.

- After one year of follow-up, the differences in the unadjusted ARR rate from baseline across the DMT therapies were: TECFIDERA (-0.14; p<0.0001); interferon β (-0.03); glatiramer acetate (+0.03); teriflunomide (-0.04); fingolimod (-0.12; p=0.0016).
- Using TECFIDERA as the reference, after one year the adjusted incidence rate ratios of MS relapse were: 1.25 (95% confidence interval [CI]: 1.08-1.45) for interferon β; 1.28 (1.10-1.48) for glatiramer acetate; 1.28 (1.08-1.53) for teriflunomide; and 1.12 (0.94-1.33) for fingolimod.

Additional Data Support Long-Term Well-Characterized Safety Profile

In an effort to better understand the overall safety profile of TECFIDERA, data presented at AAN explore the treatment’s effects on lymphocyte profiles. The data reinforce the importance of absolute lymphocyte counts (ALC) monitoring, in line with the guidance provided in the current U.S. label, and support the known, well-characterized long-term safety profile of TECFIDERA. Biogen is committed to patient safety and continues to further study these effects in an effort to optimize patient care.

Data presentation details:

- Longer-Term Follow-Up of the Efficacy of Delayed-Release Dimethyl Fumarate in Newly Diagnosed Patients with Relapsing-Remitting Multiple Sclerosis: Integrated Analysis of DEFINE, CONFIRM, and ENDORSE – *Poster P3.033 – Monday, April 18, 8:30 a.m.-7 p.m. PT*
- Comparative Effectiveness Research of Disease Modifying Therapies in Multiple Sclerosis – Findings from a Large Health

Insurance Claims Database – *Poster P3.116 – Monday, April 18, 8:30 a.m.-7 p.m. PT*

- Characterization of Absolute Lymphocyte Count Profiles in MS Patients Treated with Delayed-Release Dimethyl Fumarate: Considerations for Patient Management – *Poster P2.099 – Sunday, April 17, 8:30 a.m.-5:30 p.m. PT*
- Lymphopenia in Patients with Multiple Sclerosis Treated with Delayed-release Dimethyl Fumarate: Analysis of Two United States Electronic Health Record Databases – *Poster P2.098 – Sunday, April 17, 8:30 a.m.-5:30 p.m. PT*

About ENDORSE

ENDORSE is an ongoing global, dose-blind, Phase 3 extension study to determine the long-term safety and efficacy of TECFIDERA (240 mg, BID or TID). The study has enrolled 1,738 patients with RRMS who completed the DEFINE or CONFIRM studies. Patients who received two years of TECFIDERA in DEFINE and CONFIRM continued on the same dose (BID or TID) in ENDORSE. Patients who previously received placebo or glatiramer acetate (CONFIRM only) were randomized 1:1 to TECFIDERA BID or TID. Following TECFIDERA approval at a dose of 240 mg BID, all subjects continuing in this study received open-label TECFIDERA 240 mg BID. Patients participating in ENDORSE will be followed for up to eight years.

The primary objective of the study is to evaluate the long-term safety profile of TECFIDERA. Secondary objectives include: long-term efficacy of TECFIDERA on clinical outcomes and MS brain lesions on MRI scans; and effects of TECFIDERA on quality of life measurements.

About DEFINE and CONFIRM

DEFINE (Determination of the Efficacy and safety of oral Fumarate IN relapsing-rEmitting MS) was a global, two-year, randomized, multi-center, double-blind, placebo-controlled, dose-comparison Phase 3 clinical trial that enrolled more than 1,200 patients with RRMS at 198 sites in 28 countries. The study evaluated TECFIDERA (240 mg, BID or TID) compared to placebo. The primary objective was to determine if TECFIDERA was effective in reducing the proportion of relapsing patients at two years. Secondary endpoints included reduction in: the number of new or newly enlarging T2-hyperintense lesions and gadolinium-enhancing (Gd+) lesions as measured by MRI; ARR; and disability progression as measured by the Expanded Disability Status Scale (EDSS). Safety and tolerability of TECFIDERA were also assessed.

CONFIRM (COmparator and aN oral Fumarate In Relapsing-remitting MS) was a global, two-year, randomized, multi-center, placebo-controlled, double-blind, dose-comparison Phase 3 clinical trial that enrolled more than 1,400 patients with RRMS at 200 sites in 28 countries. The study investigated TECFIDERA (240 mg, BID or TID) compared to placebo and included a reference comparator arm of glatiramer acetate (GA; 20 mg subcutaneous daily injection) versus placebo. The primary objective was to determine whether TECFIDERA was effective in reducing the rate of clinical relapse at two years compared to the placebo group. Secondary endpoints at two years included reduction in: the number of new or newly enlarging T2-hyperintense lesions and the number of new non-enhancing T1-hypointense lesions (MRI scans were obtained at a cohort of sites); the proportion of patients who relapsed; and progression of disability as measured by EDSS. Safety and tolerability of TECFIDERA were also assessed.

About TECFIDERA®

TECFIDERA is an oral therapy for relapsing forms of MS, including relapsing-remitting MS, the most common form of MS. TECFIDERA is currently approved in 24 countries including the United States, the European Union, Canada, Australia and Switzerland. Through a robust clinical trial program and commercial launches starting with the United States in March 2013, more than 190,000 patients have been treated with TECFIDERA worldwide.[1]

TECFIDERA has been proven to reduce the rate of MS relapses, slow the progression of disability, and the number of MS brain lesions, while demonstrating a favorable benefit-risk profile in a broad range of patients with relapsing forms of MS. [2] In clinical trials, the most common adverse events associated with TECFIDERA were flushing and gastrointestinal (GI) events. Other side effects included a decrease in mean lymphocyte counts during the first year of treatment, which then plateaued. TECFIDERA is contraindicated in patients with a known hypersensitivity to dimethyl fumarate or any of the excipients of TECFIDERA. Rare cases of PML have been seen with TECFIDERA patients in the setting of prolonged moderate to severe lymphopenia.

The efficacy and safety of TECFIDERA have been studied in a large, global clinical program, which includes an ongoing long-term extension study. It is believed that TECFIDERA treats MS by activating the Nrf2 pathway, although its exact mechanism of action is unknown. This pathway provides a way for cells in the body to defend themselves against inflammation and oxidative stress caused by conditions like MS.

For additional important safety information, and the United States full prescribing information, please visit www.tecfidera.com.

About Biogen

Through cutting-edge science and medicine, Biogen discovers, develops and delivers worldwide innovative therapies for people living with serious neurological, autoimmune and rare diseases. Founded in 1978, Biogen is one of the world's oldest independent biotechnology companies and patients worldwide benefit from its leading multiple sclerosis and innovative hemophilia therapies. For more information, please visit www.biogen.com. Follow us on Twitter.

Safe Harbor

This press release includes forward-looking statements, including statements about the benefits of TECFIDERA in newly diagnosed MS patients. These forward-looking statements may be accompanied by such words as "anticipate," "believe," "estimate," "expect," "forecast," "intend," "may," "plan," "will," and other words and terms of similar meaning. You should not place undue reliance on these statements. 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. Factors which could cause actual results to differ materially from our current expectations include the risk that unexpected concerns may arise from additional data or analysis, regulatory authorities may require additional information or further studies, or may fail to approve or may delay approval of our drug candidates or expansion of our product labeling, or we may encounter other unexpected hurdles. For more detailed information on the risks and uncertainties associated with our drug development and commercialization activities, please review the Risk Factors section of our most recent annual or quarterly report filed with the Securities and Exchange Commission. These statements are based on our current beliefs and expectations and speak only as of the date of this press release. We do not undertake any obligation to publicly update any forward-looking statements.

[1] Combined post-marketing and clinical trials exposure to TECFIDERA as of December 31, 2015.

[2] TECFIDERA is approved in the European Union for relapsing-remitting multiple sclerosis.

Contact:

Biogen
MEDIA:
Lindsey Smith, +1-781-464-3260
public.affairs@biogen.com
or
INVESTORS:
Matt Calistri, +1-781-464-2442
IR@biogen.com