JAMA Neurology Publishes Phase 3 Study of EPIDIOLEX® (cannabidiol) Oral Solution in Patients with Seizures Associated with Tuberous Sclerosis Complex

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EPIDIOLEX significantly reduced difficult-to-treat seizures, both focal and generalized

CARLSBAD, Calif., Dec. 21, 2020 (GLOBE NEWSWIRE) -- GW Pharmaceuticals plc (NASDAQ: GWPH, GW, the Company or the Group), the world leader in the science, development, and commercialization of cannabinoid prescription medicines, along with U.S. subsidiary Greenwich Biosciences, announced today that *JAMA Neurology* has published results of the company's positive Phase 3 clinical trial of EPIDIOLEX ® (cannabidiol) oral solution in seizures associated with tuberous sclerosis complex (TSC). EPIDIOLEX, a pharmaceutical formulation of cannabidiol (CBD), is the first prescription, plant-derived cannabis-based medicine approved by the U.S. Food and Drug Administration (FDA) for the treatment of seizures associated with Lennox-Gastaut syndrome (LGS), Dravet syndrome, or TSC in patients one year of age and older.

The study found that individuals treated with EPIDIOLEX 25 mg/kg/day or 50 mg/kg/day experienced a significantly greater reduction in TSC-associated seizures (48.6% for 25 mg/kg/day and 47.5% for 50 mg/kg/day) compared to placebo (26.5%; p<0.001 and p=0.002, respectively). This trial provided the basis for the July 2020 FDA approval of EPIDIOLEX for seizures associated with TSC.

“People living with TSC may experience focal seizures and spasms as infants and continue to suffer from seizures throughout their lifetime,” said Elizabeth Thiele, M.D., Ph.D., director of pediatric epilepsy and director of The Carol and James Herscot Center for Tuberous Sclerosis Complex at Massachusetts General Hospital, professor of neurology at Harvard Medical School, Boston and lead investigator of the trial. “This study demonstrated that for patients with TSC and a high baseline burden of treatment-resistant, primarily focal, seizures, EPIDIOLEX significantly reduced the frequency of seizures compared with placebo.”

The safety profile observed in the study was generally consistent with findings from previous studies of EPIDIOLEX. Both doses had an acceptable safety profile, with fewer adverse events (AEs) reported with 25 mg/kg/day than 50 mg/kg/day. The most common AEs were diarrhea, decreased appetite, and somnolence. AEs occurred in 93% of the 25 mg/kg/day group, 100% of the 50 mg/kg/day group, and 95% of the placebo group. Eight patients on EPIDIOLEX 25 mg/kg/day, 10 on 50 mg/kg/day, and two on placebo discontinued treatment due to an AE. Additionally, 12% of 25 mg/kg/day patients and 26% of 50 mg/kg/day patients experienced elevated liver enzymes; 79% of these patients were also taking the antiepileptic drug (AED) valproate. Elevations in ALT/AST resolved in all patients. There were no cases meeting Hy's law criteria observed and there were no deaths in the trial.

Secondary endpoint data showed more patients on EPIDIOLEX experienced a 50% or greater reduction in seizures (36% for 25 mg/kg/day and 40% for 50 mg/kg/day) compared to placebo (22%; p=0.07 and p=0.02, respectively). Additionally, patients taking either dose of EPIDIOLEX in the study experienced a greater reduction in total seizure frequency (48%) compared to placebo (27%; p<0.001 and p=0.002, respectively). Caregivers and patients also reported overall improvement on the subject/caregiver global impression of change (S/CGIC) more frequently with EPIDIOLEX: 69% of patients on 25 mg/kg/day and 62% of patients on 50 mg/kg/day compared to 39% on placebo (p=0.007 and p=0.06, respectively).

“The publication of these results in *JAMA Neurology* reinforces the importance of EPIDIOLEX as a new treatment option for people experiencing treatment-resistant seizures associated with TSC,” said Justin Gover, Chief Executive Officer, GW Pharmaceuticals. “We hope that the data will help clinicians to better understand the potential of EPIDIOLEX to reduce focal and generalized seizure frequency in their patients with this condition.”

The results of this study were previously presented at the 2019 American Epilepsy Society (AES) Annual Meeting.

Study Design
The randomized, double-blind, placebo-controlled trial was conducted at 46 sites in six countries. A total of 224 people (aged 1 to 65) with a confirmed diagnosis of treatment-resistant TSC were randomized to receive either EPIDIOLEX 25 mg/kg/day (n=75), EPIDIOLEX 50 mg/kg/day (n=73), or placebo (n=76) for 16 weeks (4-week titration and 12-week maintenance phase), added to current AED treatment. The primary endpoint was percent change from baseline in TSC-associated focal and generalized seizure frequency for EPIDIOLEX vs placebo over the treatment period. Key secondary endpoints were ≥50% responder rate, percent reduction in total seizure frequency (including focal sensory and epileptic spasms), and S/CGIC in overall condition. On average, patients were taking three AEDs, having previously tried and discontinued four other AEDs. The most common concomitant AEDs in this trial were valproate (45%), vigabatrin (33%), levetiracetam (29%), and clobazam (27%).

About Tuberous Sclerosis Complex (TSC)
Tuberous sclerosis complex (TSC) is a rare genetic condition that affects approximately 50,000 individuals in the U.S. and nearly one million people worldwide.[1] At least two children born each day will develop TSC, with an estimated prevalence of one in 6,000 newborns.[1] The condition causes mostly benign tumors to grow in vital organs of the body including the brain, skin, heart, eyes, kidneys and lungs[2] and is a leading cause of genetic epilepsy.[3] People with TSC may experience a variety of seizure types. One of the most common is infantile spasms that typically present in the first year of life; focal (or partial) seizures are also very common.[4] TSC is associated with an increased risk of autism and intellectual disability[5] and the severity of the condition can vary widely. In some children the disease is very mild, while others may experience life-threatening complications.[2] Epilepsy is present in about 85 percent of patients with TSC and may progress to become intractable to medication.[4,6,7] More than 60 percent of individuals with TSC do not achieve seizure control[8] with standard treatments such as antiepileptic drugs, epilepsy surgery, ketogenic diet, or vagus nerve stimulation[6] compared to 30-40 percent of individuals with epilepsy who do not have TSC who are drug resistant.[9,10]

About GW Pharmaceuticals plc and Greenwich Biosciences, Inc.
Founded in 1998, GW is a biopharmaceutical company focused on discovering, developing and commercializing novel therapeutics from its proprietary cannabinoid product platform in a broad range of disease areas. The Company's lead product, EPIDIOLEX® (cannabidiol) oral solution, is commercialized in the U.S. by its U.S. subsidiary Greenwich Biosciences for the treatment of seizures associated with Lennox-Gastaut syndrome (LGS), Dravet syndrome, or tuberous sclerosis complex (TSC) in patients one year of age and older. This product has received approval in the European Union under the tradename EPIDYOLEX® for the adjunctive treatment of seizures associated with LGS or Dravet syndrome in conjunction with clobazam in patients two years and older and is under EMA review for the treatment of TSC. The Company has a deep pipeline of additional cannabinoid product candidates, in particular nabiximols, for which the Company is advancing multiple late-stage clinical programs in order to seek FDA approval in the treatment of spasticity associated with multiple sclerosis and spinal cord injury. The Company has additional cannabinoid product candidates in clinical trials for autism and schizophrenia. For further information, please visit www.gwpharm.com.

Important Safety Information
Important safety information for EPIDIOLEX is available at EPIDIOLEX.com.

Forward-looking statements
This news release contains forward-looking statements that reflect GW's current expectations regarding future events, including statements regarding financial performance, the timing of clinical trials, the timing and outcomes of regulatory or intellectual property decisions, the relevance of GW products commercially available and in development, the clinical benefits of EPIDIOLEX®/EPIDYOLEX® (cannabidiol) oral solution and Sativex® (nabiximols), and the safety profile and commercial potential of both medicines. Forward-looking statements involve risks and uncertainties. Actual events could differ materially from those projected herein and depend on a number of factors, including (inter alia), the success of GW's research strategies, the applicability of the discoveries made therein, the successful and timely completion and uncertainties related to the regulatory process, and the acceptance of EPIDIOLEX®/EPIDYOLEX®, Sativex® and other products by consumer and medical professionals. A further list and description of risks and uncertainties associated with an investment in GW can be found in GW's filings with the U.S. Securities and Exchange Commission. Existing and prospective investors are cautioned not to place undue reliance on these forward-looking statements, which speak only as of the date hereof. GW undertakes no obligation to update or revise the information contained in this press release, whether as a result of new information, future events or circumstances or otherwise.

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