GW Pharmaceuticals Announces New Physician Reports of Epidiolex(R) Treatment Effect in Children and Young Adults With Treatment-Resistant Epilepsy

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- As previously announced, seven posters relating to the physician sponsored Expanded Access Program for Epidiolex have been presented at the American Epilepsy Society Annual Meeting across Sunday, December 6, and today
- Included within the information presented is new data issued in a poster presentation on 261 patients enrolled in this expanded access program, representing a two-fold increase in patient numbers over the previous disclosure in April 2015
- Promising signals of efficacy have been reported, with median reduction in total seizures of 45% across all patients after 12 weeks treatment, and maintenance of clinical effect at 36 weeks
- 47% of patients experienced a ≥50% reduction in seizures after 12 weeks treatment
- Epidiolex was well tolerated - only 4% of patients withdrew due to side effects
- Additional data in patients with diagnoses of Dravet syndrome, Lennox-Gastaut syndrome (LGS) and Tuberous Sclerosis Complex (TSC), the targets of the GW sponsored Phase 3 clinical trial program for Epidiolex, were presented and this data further supports GW's choice of these indications

LONDON, Dec. 7, 2015 (GLOBE NEWSWIRE) -- GW Pharmaceuticals plc (Nasdaq:GWPH) (AIM:GWP) ("GW," "the Company" or "the Group"), a biopharmaceutical company focused on discovering, developing and commercializing novel therapeutics from its proprietary cannabinoid product platform, today announced new physician reports of clinical effect and safety associated with the Epidiolex® (Cannabidiol or CBD) expanded access program. These data were presented by study authors at the American Epilepsy Society Annual Meeting (AES) in Philadelphia, PA[1,2].

"We are pleased to report these promising data on significant numbers of children," said lead author Orrin Devinsky, M.D., of New York University Langone Medical Center's Comprehensive Epilepsy Center. "These data reinforce and support the safety and efficacy we have shared in previous studies. Most importantly it is providing hope to the children and their families who have been living with debilitating seizures." However, Devinsky cautions that "these results are from an uncontrolled study. Further study is needed before results can be confirmed. Randomized controlled studies are now underway to help us better understand the effectiveness of the drug. We very much look forward to the results from these studies during 2016."

"It is reassuring that this Epidiolex data on almost twice the number of patients from the last presentation further reinforces and supports the encouraging signals of efficacy and safety reported previously. Specifically, in the patient populations that GW is targeting for development, Dravet syndrome, Lennox-Gastaut syndrome and Tuberous Sclerosis Complex, Epidiolex treatment was associated with meaningful reductions in seizures as well as a sustained response," stated Justin Gover, GW's Chief Executive Officer. "GW now looks forward to top-line results from the Phase 3 pivotal safety and efficacy studies in Dravet syndrome and LGS in 2016."

Clinical Effect Data - all patients in Epidiolex expanded access program[1]

Physician reports of clinical effect and safety data have been presented on 261 children and young adults with treatment-resistant epilepsy who have been treated with GW's investigational product, Epidiolex, for a period of at least 12 weeks (Devinsky et al). These data are from 16 clinical sites in the United States and were generated under expanded access Investigational New Drug applications (INDs) authorized by the U.S. Food and Drug Administration (FDA). In addition, physician reports of safety data were presented on 313 patients (261 patients with 12 weeks treatment effect data plus additional 52 patients still in their first 12 weeks of treatment or who withdrew from treatment). The expanded access program comprises clinical studies performed by individual physicians.

FDA authorized expanded access programs facilitate access to investigational drugs for treatment use for patients with a serious or immediately life-threatening diseases or conditions who lack therapeutic alternatives. The patients included in the Epidiolex program had Dravet syndrome (17% of the total) and LGS (15% of the total), epilepsy types that can lead to intellectual disability and lifelong seizures, as well as 14 other types of severe epilepsy, such as TSC, Aicardi syndrome and Doose syndrome. Many of these other types of epilepsy are severe and rare, and several patients with these epilepsies have major congenital structural brain abnormalities.

The 261 patients were predominately children with an average age of 11.8 years. In all cases, Epidiolex was added to current anti-epileptic drug (AED) treatment regimes. On average, patients were taking approximately 3 other AEDs. At baseline, the median number of convulsive seizures per month was 31.

At the request of the study authors, the data disclosed in this press release is limited to the data presented at the AES meeting.

Clinical Effect Data - All Patients

Data were presented on all 261 patients who had at least 12 weeks treatment. Treatment was open label. Of these 261 patients, 135 patients had also reached 36 weeks treatment at the time of data analysis. Information collected on all seizures (convulsive and non-convulsive) is reported for each patient. Data are presented showing the median change in seizure frequency compared to a 4-week baseline period.

	Week 4	Week 8	Week 12	Week 16	Week 24	Week 36
Median change in seizure frequency	-33.5%	-42.5%	-45.1%	-49.5%	-45.9%	-44.1%

At the end of 12 weeks, 47% of all patients experienced a ≥50% reduction in seizures and 9% of all patients were seizure-free.

At the end of 12 weeks, the median overall reduction in convulsive seizure frequency was 48.8%.

Clinical Effect Data - Dravet syndrome patients only

Data were presented on 44 patients with Dravet syndrome who had at least 12 weeks treatment data. Of these 44 patients, 25 patients had also reached 36 weeks treatment at the time of data analysis. Information collected on all seizures (convulsive and non-convulsive) is reported for each patient. Data are presented showing the median change in seizure frequency compared to a 4-week baseline period.

	Week 4	Week 8	Week 12	Week 16	Week 24	Week 36
Median change in seizure frequency	-36.8%	-56.4%	-62.7%	-56.2%	-55.4%	-50.6%

At the end of 12 weeks, 13% of Dravet syndrome patients were seizure-free.

Of the 44 patients with Dravet syndrome, 42 patients had convulsive seizures at baseline. At the end of 12 weeks, the median reduction in convulsive seizures in these patients was 52.3%.

Clinical Effect Data - Patients without Dravet syndrome

Data were made available on all 217 patients with diagnoses other than Dravet syndrome who had at least 12 weeks treatment. Of these 217 patients, 110 patients had also reached 36 weeks treatment at the time of data analysis. Information collected on all seizures (convulsive and non-convulsive) is reported for each patient. Data are presented showing the median change in seizure frequency compared to a 4-week baseline period.

	Week 4	Week 8	Week 12	Week 16	Week 24	Week 36
Median change in seizure frequency	-33.3%	-41.2%	-41.4%	-47.0%	-45.5%	-44.1%

Clinical Effect Data - LGS patients only

Data were presented on 40 patients with LGS who had at least 12 weeks treatment data. Of these, 14 patients had atonic seizures at baseline. In these patients, there was a 71.1% median reduction in the number of atonic seizures at the end of 12 weeks.

Safety Data

Safety data were made available on 313 patients (261 patients with 12 weeks treatment effect data plus 52 additional patients for whom 12 week treatment effect data are not yet available or who withdrew from treatment) and represent approximately 180 patient-years of exposure to Epidiolex.

- The most common adverse events (occurring in 10% or more patients and resulting from all causes) were:
  - Somnolence - 23% of patients
  - Diarrhea - 23% of patients
  - Fatigue - 17% of patients
  - Decreased appetite - 17% of patients
  - Convulsions - 17% of patients
  - Vomiting - 10% of patients
- Most adverse events were mild or moderate and transient
- 14 patients (4%) reported an adverse event leading to discontinuation
- There were 36 (12%) withdrawals from treatment due to lack of clinical effect
- Serious adverse events were reported in 106 patients. Of these, SAEs in 16 (5%) patients were deemed possibly related to treatment, including altered liver enzymes (4 patients), status epilepticus/convulsion (4), diarrhea (4), decreased weight (3), thrombocytopenia (1)
- Serious adverse events include 7 deaths, none of which were deemed related to Epidiolex by the independent investigators
- For all patients, clobazam co-therapy was associated with a higher rate of treatment response (median reduction in

convulsive seizures): 56.4% v. 35.0% at week 12. The authors suggest that this may reflect elevations in the N-desmethyl clobazam metabolite. This apparent effect of clobazam co-therapy was not seen in Dravet syndrome or LGS groups - at week 12, 53% of Dravet/LGS patients on clobazam were ≥50% responders compared with 54% not taking clobazam (odds ratio 0.97 (95% CI - 0.35-2.65)).

Clinical Effect Data - TSC patients[2]

Safety and efficacy data on 10 patients diagnosed with TSC from the expanded access program were presented by Massachusetts General Hospital for Children (Geffrey et al) on CBD treatment of refractory epilepsy in these patients. In this poster, there was a response rate of 50%, 50%, 40%, 60% and 66% at 2, 3, 6, 9, and 12 months of treatment with Epidiolex, respectively. Improvements were reported in alertness, verbal capacity/communication, vocalizations, cognitive availability, and initiation of emotional and physical connections, as well as heightened expression of emotion. Side effects were seen in 50% of patients (5) and most were resolved with anti-epileptic drug or CBD dose adjustment.

Clinical Effect Data - Epileptic Spasms[3]

Safety and efficacy data on 9 patients suffering from epileptic spasms from the Epidiolex expanded access program were presented by Massachusetts General Hospital for Children (Abati et al). Epilepsy spasms often remain refractory to standard anti-epileptic drugs. According to this poster, Epidiolex exerted its effects in a short time course, with a response rate of 67% after two weeks and 78% after 1 month. Three of nine patients became spasm-free after two weeks of Epidiolex treatment. By parent report, patients also showed cognitive gains including improvements in alertness, verbal capacity/communication, and cognitive availability.

GW Epidiolex Development Program - Dravet syndrome, LGS and TSC

GW is currently conducting formal development programs in the treatment of three indications; Dravet syndrome, LGS and TSC. GW has to date received Orphan Drug Designation and Fast Track Designation from the FDA for Epidiolex for the treatment of Dravet syndrome, as well as Orphan Designation from the European Medicines Agency (EMA). GW has also received Orphan Drug Designation for Epidiolex for the treatment of LGS. GW is conducting two Phase 3 trials in Dravet syndrome and two Phase 3 trials in LGS. GW expects to report initial top-line results from these trials in 2016. GW also expects to commence Phase 3 clinical development of Epidiolex in TSC in early 2016.

References:

1. Devinsky et al, Epidiolex (Cannabidiol) in Treatment Resistant Epilepsy, American Epilepsy Society Annual Meeting, Poster, December 7, 2015
2. Geffrey et al, Cannabidiol (CBD) treatment of refractory epilepsy in tuberous sclerosis complex (TSC), American Epilepsy Society Annual Meeting, Poster, December 7, 2015
3. Abati et al, Cannabidiol Treatment of Refractory Epileptic Spasms: An Open Label Study, American Epilepsy Society Annual Meeting, Poster, December 7, 2015

Note Regarding Expanded Access Studies

Expanded access studies are uncontrolled, carried out by individual investigators, and not typically conducted in strict compliance with Good Clinical Practices, all of which can lead to a treatment effect which may differ from that in placebo-controlled trials. These studies provide only anecdotal evidence of efficacy for regulatory review. These studies contain no control or comparator group for reference and these patient data are not designed to be aggregated or reported as study results. Moreover, data from such small numbers of patients may be highly variable. Information obtained from these studies, including the statistical principles that the independent investigators have chosen to apply to the data, may not reliably predict data collected via systematic evaluation of the efficacy in company-sponsored clinical trials or evaluated via other statistical principles that may be applied in those trials. Reliance on such information to design our clinical trials may lead to Phase 2 and 3 trials that are not adequately designed to demonstrate efficacy and could delay or prevent our ability to seek approval of Epidiolex. Expanded access programs provide supportive safety information for regulatory review. Physicians conducting these studies may use Epidiolex in a manner inconsistent with the protocol, including in children with conditions beyond those being studied in GW-sponsored trials. Any adverse events or reactions experienced by subjects in the expanded access program may be attributed to Epidiolex and may limit our ability to obtain regulatory approval with labeling that we consider desirable, or at all.

Forward-looking statements

This news release may contain forward-looking statements that reflect GW's current expectations regarding future events, including statements regarding the therapeutic benefit, safety profile and commercial value of the company's investigational drug Epidiolex®, the development and commercialization of Epidiolex, plans and objectives for product development, plans and objectives for present and future clinical trials and results of such trials, plans and objectives for regulatory approval. 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 of uncertainties related to the regulatory process, and the acceptance of Sativex®, Epidiolex®, and other products by consumer and medical professionals. A further list and description of risks, uncertainties and other risks 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.

About GW Pharmaceuticals plc

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. GW commercialized the world's first plant-derived cannabinoid prescription drug, Sativex®, which is approved for the treatment of spasticity due to multiple sclerosis in 28 countries outside the United States. GW is advancing an orphan drug program in the field of childhood epilepsy with a focus on Epidiolex®, which is in Phase 3 clinical development for the

treatment of Dravet syndrome and Lennox-Gastaut syndrome and which is also expected to enter Phase 3 clinical trials in the treatment of Tuberous Sclerosis Complex. GW has a deep pipeline of additional cannabinoid product candidates which includes Sativex in Phase 3 clinical development as a potential treatment of pain associated with advanced cancer, as well as compounds in Phase 1 and 2 trials for glioma, type 2 diabetes, and schizophrenia. For further information, please visit **www.gwpharm.com**.

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