

Clearside Biomedical Announces Positive Topline Results from Pivotal Phase 3 Clinical Trial of CLS-TA in Macular Edema Associated with Non-Infectious Uveitis

Primary Endpoint Achieved – Statistically Significant Improvement in Proportion of Patients Gaining 15 or More Letters in Visual Acuity

All Key Secondary Endpoints Achieved

Clearside to Host Conference Call Today at 8:30 AM Eastern Time

ALPHARETTA, Ga., March 5, 2018 – Clearside Biomedical, Inc. (NASDAQ:CLSD), a late-stage biopharmaceutical company developing first-in-class drug therapies to treat back-of-the-eye diseases, today announced positive topline results from its pivotal Phase 3 clinical trial of suprachoroidal CLS-TA in patients with macular edema associated with non-infectious uveitis.

Suprachoroidal CLS-TA is Clearside’s proprietary suspension of the corticosteroid triamcinolone acetonide formulated for administration to the back of the eye via the suprachoroidal space, or SCS™, which is the space located between the choroid and the outer protective layer of the eye known as the sclera.

Clearside enrolled 160 patients in this randomized, controlled, masked Phase 3 pivotal clinical (“PEACHTREE”) trial. Of the 160 patients enrolled, 96 patients were randomized to the treatment arm to receive two 4.0 mg doses of suprachoroidal CLS-TA 12 weeks apart, and 64 patients were randomized to undergo sham procedures at the same 12-week interval. Patients were evaluated every four weeks for a total of 24 weeks, and a total of 155 patients, or 97% of those enrolled, completed the full evaluation period of the trial.

In the PEACHTREE trial, 47% of patients who received suprachoroidal CLS-TA every 12 weeks gained at least 15 letters in best corrected visual acuity (“BCVA”), as measured using the Early Treatment of Diabetic Retinopathy Study (“ETDRS”) scale, from baseline at week 24, compared to 16% of patients who underwent a sham procedure. This improvement, which was the primary endpoint of the trial, was statistically significant ($p < 0.001$). Further, in terms of improvements in BCVA, the mean change from baseline was better in the treatment arm than the sham arm at each monthly evaluation. The mean improvement from baseline was maintained throughout the evaluation period, with 9.6 letters gained at week 4 and 13.7 letters at week 24 in the active arm, compared to 1.2 letters at week 4 and 2.9 letters at week 24 in the control arm, respectively.

The following tables summarize the topline BCVA improvement data observed in the PEACHTREE trial:

Subjects Gaining \geq 15 ETDRS Letters at Week 24 from Baseline

	CLS-TA (N=96)	Control (Sham) (N=64)
Proportion (n) of Subjects Gaining \geq 15 ETDRS Letters at Week 24 from Baseline	46.9% (45)	15.6% (10)
p-value	<0.001	

Mean Change from Baseline

Change from Baseline in Each Arm	CLS-TA Arm [ETDRS Letters]	Control Arm (Sham) [ETDRS Letters]
Week 4	9.6	1.2
Week 24	13.7	2.9

For the other key secondary endpoint, administration of suprachoroidal CLS-TA resulted in a mean reduction from baseline of 157 microns in central subfield thickness at week 24 in the active arm compared to a 19 micron mean reduction in the sham arm, a result that was also statistically significant ($p < 0.001$).

Suprachoroidal CLS-TA was generally well tolerated, with no treatment-related serious adverse events reported in the trial. Through 24 weeks, corticosteroid-related elevated intraocular pressure adverse events were reported for approximately 11.5% of patients in the CLS-TA treatment group, compared to no patients in the sham group.

Detailed results from PEACHTREE will be presented at an upcoming medical conference.

“These positive topline data from PEACHTREE are very encouraging for this population with macular edema as a complication due to their uveitis,” said Rahul N. Khurana, MD, an investigator for PEACHTREE, Partner at Northern California Retina Vitreous Associates, and Clinical Associate Professor in Ophthalmology at UCSF Medical Center. “The PEACHTREE study was the first pivotal phase 3 clinical trial of a drug candidate for patients with uveitic macular edema in which a BCVA measure was the primary efficacy endpoint, potentially raising the bar for future trials in this population. Typically, uveitic macular edema may persist despite adequate control of uveitis itself, and it is challenging to treat and may persist despite multiple interventions. Also, while corticosteroids are the most common treatment for all complications of uveitis, including the associated macular edema, systematic controlled studies of this kind are rare. I believe that based on these positive results, and if marketing authorization is obtained from the FDA, suprachoroidal CLS-TA has the potential to become a new paradigm for the treatment of visual impairment associated with macular edema associated with non-infectious uveitis.”

“Having nearly 50% of the PEACHTREE trial patients treated with suprachoroidal CLS-TA gain 15 or more letters in vision is highly compelling. It represents a huge step forward in advancing suprachoroidal administration of CLS-TA towards becoming a powerful new approach in potentially treating blinding eye diseases,” said Daniel H. White, Clearside’s Chief Executive Officer and President. “We currently expect to submit a new drug application for suprachoroidal CLS-TA in patients with macular edema associated with uveitis to the FDA in the fourth quarter of 2018, and we are also evaluating a number of options for submissions to regulatory agencies in additional territories outside of the United States.”

Suprachoroidal CLS-TA, used either alone or together with an intravitreal anti-VEGF agent, is being studied as part of Clearside’s pipeline of treatments for unmet or underserved blinding eye diseases where the pathologies manifest in the retina and the choroid.

Conference Call & Webcast Details

Clearside is pleased to invite all interested parties to participate in a conference call today at 8:30 a.m. Eastern Time, during which the PEACHTREE topline results will be discussed. To participate in this

conference call, please dial (844) 263-8310 (U.S.) or (213) 358-0959 (international), conference ID 5799948, approximately 10 minutes prior to the start time. A live, listen-only audio webcast of the conference call can be accessed by visiting the “Investor Relations” section at www.clearsidebio.com. An archive of the webcast will be available until June 5, 2018.

About PEACHTREE

PEACHTREE, a randomized, masked, sham-controlled Phase 3 trial, enrolled 160 patients with macular edema associated with non-infectious uveitis. Patients were randomized to receive two unilateral suprachoroidal CLS-TA injections or two unilateral suprachoroidal sham procedures approximately 12 weeks apart. The primary efficacy outcome measure in the trial was the proportion of patients with a change from baseline of at least 15 letters in BCVA using the ETDRS scale at 24 weeks. Safety was assessed by analyzing the occurrence of adverse events and changes in key safety parameters over the course of the trial. Additional efficacy and safety endpoints were also evaluated.

About Uveitis

Uveitis, a set of inflammatory conditions affecting the eye, is one of the world’s leading causes of blindness. Uveitis occurs in about 350,000 patients in the United States and is typically found in both eyes. Macular edema is the build-up of fluid in the macula, an area in the center of the retina responsible for sharp, straight-ahead vision. Fluid buildup causes the macula to swell and thicken, which distorts vision. Macular edema occurs in approximately one-third of all non-infectious uveitis cases and is a major contributor to vision loss in these patients.

About Clearside

Clearside Biomedical, Inc., headquartered in Alpharetta, GA, is a late-stage clinical ophthalmic biopharmaceutical company that envisions a world without blindness. Clearside relentlessly pursues transformative, elegant, precise solutions to restore and preserve vision. Clearside is developing advanced clinical and preclinical product candidates using a proprietary treatment approach offering unprecedented access to the back of the eye through the SCS. This offers potentially meaningful treatment benefit to patients suffering from sight threatening diseases like uveitis, retinal vein occlusion, diabetic macular edema and wet age-related macular degeneration, where macular edema is a common complication.

Cautionary Note Regarding Forward-Looking Statements

Any statements contained in this press release that do not describe historical facts may constitute forward-looking statements as that term is defined in the Private Securities Litigation Reform Act of 1995. These statements may be identified by words such as “believe”, “expect”, “may”, “plan”, “potential”, “will”, and similar expressions, and are based on Clearside’s current beliefs and expectations. These forward-looking statements include expectations regarding the clinical development of Clearside’s product candidates, the potential attributes and benefits of Clearside’s product candidates and the timing of Clearside’s submission of a new drug application to the U.S. Food and Drug Administration for suprachoroidal CLS-TA for the treatment of macular edema associated with non-infectious uveitis. These statements involve risks and uncertainties that could cause actual results to differ materially from those reflected in such statements. Risks and uncertainties that may cause actual results to differ materially include uncertainties inherent in the conduct of clinical trials, Clearside’s reliance on third parties over which it may not always have full control, and other risks and uncertainties that are described in

Clearside's Annual Report on Form 10-K for the year ended December 31, 2016, filed with the U.S. Securities and Exchange Commission ("SEC") on March 16, 2017, and Clearside's other Periodic Reports filed with the SEC. Any forward-looking statements speak only as of the date of this press release and are based on information available to Clearside as of the date of this release, and Clearside assumes no obligation to, and does not intend to, update any forward-looking statements, whether as a result of new information, future events or otherwise.

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