Clearside Biomedical Announces Positive Safety Results from OASIS Phase 1/2a Clinical Trial of CLS-AX (axitinib injectable suspension) for the Treatment of Wet AMD

December 21, 2021

- Suprachoroidal Injection of CLS-AX 0.1 mg Dose Well-Tolerated in Cohort 2 with No Treatment Related Adverse Events –
- Consistent Safety Profile Observed in Cohorts 1 and 2 Supports Advancement to Cohort 3 -
- Webcast and Conference Call Today at 8:30 A.M. ET Hosted by Management and Including Key Opinion Leader, Peter Kaiser, M.D. -

ALPHARETTA, Ga., Dec. 21, 2021 (GLOBE NEWSWIRE) -- Clearside Biomedical, Inc. (Nasdaq:CLSD), a biopharmaceutical company revolutionizing the delivery of therapies to the back of the eye through the suprachoroidal space (SCS®), announced today positive safety results from OASIS, its ongoing Phase 1/2a clinical trial of CLS-AX (axitinib injectable suspension) administered by suprachoroidal injection via Clearside's SCS Microinjector®. OASIS is evaluating CLS-AX for the treatment of neovascular age-related macular degeneration (wet AMD).

Data reported today includes results from Cohort 2 as well as combined data from Cohorts 1 and 2. The primary endpoints were achieved in Cohort 2 (n=5), as the 0.1 mg dose of CLS-AX was well tolerated with no serious adverse events; there were no treatment emergent adverse events related to aflibercept, CLS-AX or the suprachoroidal injection procedure; and there was no dispersion of drug into the vitreous. In addition, there were no adverse events related to intraocular pressure (IOP), inflammation, or vasculitis. The OASIS Safety Monitoring Committee has reviewed the data and approved advancing to Cohort 3 with a dose of 0.5 mg of CLS-AX.

Thomas A. Ciulla, M.D., MBA, Chief Medical Officer and Chief Development Officer, commented, "Our OASIS trial continues to demonstrate positive safety results as we escalate the dose. Given that this trial represents the first time a tyrosine kinase inhibitor has been injected suprachoroidally in humans, we started OASIS with low dose levels to establish a foundation for safety. We believe the absence of any dose limiting toxicities in the first two cohorts of the OASIS trial, combined with our pre-clinical toxicology data, supports our plan to escalate to the higher CLS-AX dose of 0.5 mg in Cohort 3 rather than the previous 0.3 mg dose. We have initiated patient screening for Cohort 3, with target completion of this cohort planned for mid-year 2022. We look forward to gathering more data on the potential benefits of combining targeted and compartmentalized suprachoroidal delivery with the broad pan-VEGF attributes of axitinib for patients suffering from wet AMD."

Data Summary

In Cohort 2, five patients were enrolled with an average age of 78 years. All patients were anti-VEGF treatment-experienced, having undergone numerous injections of standard-of-care anti-VEGF treatments prior to entering the OASIS trial. The mean number of anti-VEGF treatments prior to the start of the trial was 9.2 injections within twelve months and 21.6 injections within 3 years. In Cohort 2, at three months post CLS-AX dose, one patient did not require any retreatment and one other patient was retreated per protocol defined retreatment criteria. Two patients were retreated at month two and one patient was retreated at month one, although based on independent reading center assessment, the protocol defined retreatment criteria were not met in these three patients.

In the combined Cohorts 1 and 2, eleven patients were enrolled with an average age of 80 years. The mean number of anti-VEGF treatments prior to the start of the trial was 9.1 injections within twelve months and 22.1 injections within 3 years. In the combined cohorts: four patients (36% of the total) went at least three months post CLS-AX dosing without retreatment; six patients (55% of the total) went two months without retreatment; and one patient (9% of the total) was retreated at one month. The mean best corrected visual acuity (BCVA) score as measured by Early Treatment Diabetic Retinopathy Study (ETDRS) letters and the mean change in central subfield thickness (CST) of the macula were stable in the combined first two cohorts of the OASIS study.

"The suprachoroidal injection procedure has been easy to perform, reliable and well tolerated by patients during this study. The consistent safety data from Cohorts 1 and 2 support escalation to higher dosing, which we anticipate will provide further insights related to safety, visual acuity, ocular anatomy and durability," added Mark R. Barakat, M.D., Director of Research, Retinal Consultants of Arizona, and Clinical Assistant Professor, University of Arizona College of Medicine, Phoenix, and an investigator in the OASIS clinical trial.

Conference Call & Webcast Details

Clearside will host a webcast and conference call with accompanying slides today at 8:30 a.m. ET, including comments by management and retinal expert, Peter Kaiser, M.D., Chaney Family Endowed Chair for Ophthalmology Research and a Professor of Ophthalmology at the Cleveland Clinic Lerner College of Medicine, and a member of Clearside's Scientific Advisory Board. The live and archived webcast may be accessed on the Clearside website under the Investors section: Events and Presentations. The live call can be accessed by dialing 844-263-8310 (domestic) or 213-358-0959 (international) and entering conference code: 7369695.

OASIS Phase 1/2a Clinical Trial Design

OASIS is an open-label, dose-escalation Phase 1/2a trial in wet AMD patients to assess the safety and tolerability of a single dose of CLS-AX administered by suprachoroidal injection via Clearside's SCS Microinjector ®. Eligible patients are those who demonstrate stable visual acuity following two or more previous injections with an intravitreal anti-VEGF agent. All enrolled patients undergo diagnostic imaging on screening, followed by masked reading center confirmation of persistent active disease.

Enrolled patients initially receive aflibercept at the first visit followed by a single dose of CLS-AX at the second visit one month later. The primary endpoint for the trial will assess the safety and tolerability of CLS-AX for the three months following the administration of CLS-AX, and secondary

endpoints will evaluate the pharmacokinetics, visual function, ocular anatomy, and the need for additional treatment with intravitreal aflibercept during the three-month period.

The study design includes 3 cohorts of approximately 5 patients each (n=15). Cohorts 1 and 2 are complete. Cohort 1 and Cohort 2 participants received 0.03 mg and 0.1 mg of axitinib, respectively. Cohort 3 is currently enrolling participants for a planned dose of 0.5 mg of axitinib delivered via suprachoroidal injection. There is also a three-month extension study to follow patients in Cohorts 2 and 3. Additional information on the Phase 1/2a trial can be found on https://clinicaltrials.gov (NCT04626128).

About CLS-AX (axitinib injectable suspension)

CLS-AX (axitinib injectable suspension) is a proprietary suspension of axitinib for suprachoroidal injection. Axitinib is a tyrosine kinase inhibitor (TKI) currently approved to treat renal cell cancer that achieves pan-VEGF blockade, directly inhibiting VEGF receptors-1, -2, and -3 with high potency and specificity. Clearside believes this broad VEGF blockade may have efficacy advantages over existing retinal therapies by acting at a different level of the angiogenesis cascade, and may benefit patients who sub-optimally respond to current, more narrowly focused anti-VEGF therapies. Suprachoroidal injection of this proprietary suspension of axitinib has demonstrated meaningful potential in preclinical studies in multiple species. Preclinical results from Clearside and independent investigators have shown pharmacodynamic effects with reduced growth of experimental neovascularization and decreased fluorescein leakage. With suprachoroidal administration of axitinib, there is the potential to achieve prolonged duration and targeted delivery to affected tissue layers. Clearside is developing CLS-AX as a long-acting therapy for the treatment of wet AMD.

About Neovascular Age-Related Macular Degeneration (wet AMD)

Age-related macular degeneration causes a progressive loss of central vision and is the most common cause of legal blindness in individuals over age 55. Wet AMD is generally caused by abnormal blood vessels that leak fluid or blood into the macula, the part of the retina responsible for central vision, and accounts for the majority of vision loss in patients with this disorder. In the U.S., approximately 11 million patients are living with AMD, and about 20% have the wet form. Current treatments require life-long, frequent injections to maintain efficacy. This treatment regimen tends to cause a treatment burden for patients resulting in reduced compliance and under-treatment leading to potentially limited outcomes.

About Clearside's Suprachoroidal Space (SCS ®) Injection Platform and SCS Microinjector®

Clearside's patented, proprietary suprachoroidal space (SCS ®) injection treatment approach offers unprecedented access to the back of the eye where sight-threatening disease often occurs. The company's unique platform is inherently flexible and intended to work with established and new formulations of medications. Clearside's proprietary SCS Microinjector ® can be used to inject a wide variety of drug candidates that are specifically formulated to be delivered via suprachoroidal injection. The SCS Microinjector provides targeted delivery to potentially improve efficacy and compartmentalization of medication to reduce or eliminate toxic effects on non-diseased cells. The SCS Microinjector is composed of a syringe and two 30-gauge hollow microneedles of varying lengths, each less than 1.2 millimeters, within a custom-designed hub that optimizes insertion and suprachoroidal administration of drugs.

About Clearside Biomedical

Clearside Biomedical, Inc. is a biopharmaceutical company revolutionizing the delivery of therapies to the back of the eye through the suprachoroidal space (SCS®). Clearside's SCS injection platform, utilizing the Company's proprietary SCS Microinjector ®, enables an in-office, repeatable, non-surgical procedure for the targeted and compartmentalized delivery of a wide variety of therapies to the macula, retina or choroid to potentially preserve and improve vision in patients with sight-threatening eye diseases. Clearside is developing its own pipeline of small molecule product candidates for administration via its SCS Microinjector and strategically partners its SCS injection platform with companies utilizing other ophthalmic therapeutic innovations. Clearside's first product, XIPERE ™ (triamcinolone acetonide injectable suspension) for suprachoroidal use, was approved by the U.S. Food and Drug Administration in October 2021. For more information, please visit www.clearsidebio.com.

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 statements regarding the clinical development and the potential benefits of CLS-AX and product candidates using Clearside's SCS Microinjector ®. 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, uncertainties regarding the COVID-19 pandemic and other risks and uncertainties that are described in Clearside's Annual Report on Form 10-K for the year ended December 31, 2020, filed with the U.S. Securities and Exchange Commission (SEC) on March 15, 2021, 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.

Investor and Media Contacts:

Jenny Kobin
Remy Bernarda
ir@clearsidebio.com
(678) 430-8206

Source: Clearside Biomedical, Inc.