



Clearside Biomedical Featured in Multiple Data Presentations at the 44th Virtual Annual Macula Society Meeting

February 8, 2021

- Proprietary suprachoroidal injection platform demonstrates broad applicability across multiple retinal disorders -

- CLS-AX will also be featured at the upcoming virtual Angiogenesis, Exudation, and Degeneration 2021 conference on February 13, 2021 -

ALPHARETTA, Ga., Feb. 08, 2021 (GLOBE NEWSWIRE) -- Clearside Biomedical, Inc. (NASDAQ:CLSD), a biopharmaceutical company dedicated to developing and delivering treatments that restore and preserve vision for people with serious back of the eye diseases, announced today that numerous clinical presentations were delivered at the 44th Virtual Annual Macula Society Meeting which took place February 6-7, 2021. Clearside also announced that David M. Brown, M.D. will deliver a presentation entitled, "Axitinib: A Novel TKI Delivered by Suprachoroidal Injection for AMD" at the virtual Angiogenesis, Exudation, and Degeneration 2021 event hosted by the University of Miami Health System Bascom Palmer Eye Institute on February 13, 2021.

"With well over one thousand injections performed to date, the mounting evidence points to the potential reliability and consistency of our suprachoroidal injection delivery approach," said Thomas A. Ciulla, M.D., MBA, Chief Medical Officer and Chief Development Officer. "Our SCS Microinjector[®] has now been used to deliver small molecules, gene therapy and viral nanoparticle conjugates in eye diseases including macular edema associated with uveitis, neovascular age-related macular degeneration (wet AMD), diabetic retinopathy, and choroidal melanoma. With its broad applicability and in-office delivery method, our suprachoroidal injection platform could facilitate novel targeted treatment options for patients suffering from retinal diseases."

CLS-AX (axitinib injectable suspension) and other therapies

Title: Suprachoroidal Administration of Small Molecule and Nanoparticle Suspensions: Pre-Clinical Results Correlate to Clinical Trial Outcomes

Lead Author: Mathew MacCumber, MD, PhD

Conclusions: Suprachoroidal delivery of small molecule suspensions, including corticosteroids, tyrosine kinase inhibitors (TKIs), complement inhibitors, and nanoparticles, has undergone investigation based on the potential for targeted delivery to affected tissues for efficacy, compartmentalization away from unaffected tissues for safety, and durability to address treatment burden. Several small molecule suspensions, including axitinib, a potent TKI that has shown inhibition of angiogenesis in multiple ocular models, exhibited prolonged durability when injected suprachoroidally in preclinical pharmacokinetic studies. Favorable results from preclinical studies of a triamcinolone acetate suspension translated to favorable clinical trial results for macular edema associated with non-infectious uveitis. There is potential for similar read-through of preclinical studies in the four current clinical trials enrolling patients utilizing suprachoroidal injection with the SCS Microinjector[®]: CLS-AX for wet AMD; viral vector RX-314 for wet AMD and diabetic retinopathy; and viral-like particle AU-011 for choroidal melanoma.

Suprachoroidal Space Injection Platform

Title: Multimodal Imaging of Suprachoroidal Injections: A Retina Surgeon's Perspective

Lead Author: Seenu Hariprasad, MD

Conclusions: Utilizing novel imaging modalities for ocular injections, three important treatment attributes were demonstrated: 1) acute opening of the suprachoroidal space; 2) circumferential, posterior spread of injectate; and 3) compartmentalization of injectate to posterior tissues away from anterior and corneal tissues. These characterizations support suprachoroidal injections to target affected tissue layers in chorioretinal disorders for potential efficacy benefits, while compartmentalizing therapy away from unaffected tissues for potential safety benefits.

Title: Safety of the Suprachoroidal Injection Procedure Utilizing SCS Microinjector[®] across Three Retinal Disorders

Lead Author: Shree Kurup, MD, FACP

Conclusions: In this analysis, safety data from the day of the procedure was compiled from eight clinical trials where suprachoroidal injections were performed across three disease states, including non-infectious uveitis, diabetic macular edema, and retinal vein occlusion. Analysis included a total of 621 patients who received one or more suprachoroidal injections. Importantly, rare but serious adverse events (SAEs) that are known to occur with intraocular injection were assessed, and there were no SAEs involving lens injury, suprachoroidal hemorrhage, or endophthalmitis in any patient receiving one or more suprachoroidal injections. In these eight clinical trials, the safety profile of suprachoroidal injections was comparable to intravitreal injections alone for events occurring during or on the same day as the injection procedure. The results from the retrospective analysis demonstrated the robustness of the suprachoroidal injection regardless of indication.

Current Anti-VEGF Treatment Outcomes, Treatment Burden, and Unmet Need

Title: Anti-VEGF Outcomes in RVO-Related Macular Edema Compared to nAMD and DME: Greater 1-Year Visual Gain but Larger Gap versus Respective Randomized Trials: A Real-World Analysis of 93,756 Patient Eyes

Lead Author: Thomas Ciulla, MD

Conclusions: In this study, real world anti-VEGF treatment outcomes were compared between wet AMD, diabetic macular edema (DME) and retinal vein occlusion (RVO) associated macular edema. In this analysis, 93,756 patient eyes were assessed from de-identified medical records from hundreds of retina specialists across the United States. The assessment found that “real world” RVO patients experienced a modest gain in visual acuity (VA) with anti-VEGF treatment, and that injection frequency plays a large role in this outcome. It was found that an inverse relationship existed between outcomes and baseline VA, with the better baseline VA resulting in an increased risk of VA loss, reflecting a ceiling effect. The analysis showed that “real world” RVO patients experienced greater 1-year VA gain than “real world” wet AMD and DME patients, but exhibited a larger gap compared to respective randomized controlled trials. Current anti-VEGF therapies are associated with significant treatment burden for patients, families, and the health care system; there remains significant unmet need for more effective therapy with durability to address this treatment burden.

CLS-TA (XIPERE™) and Uveitic Macular Edema

Title: Post Hoc Analysis of Suprachoroidal CLS-TA versus Rescue Therapies for Uveitic Macular Edema: Safety and Visual Function

Lead Author: Eric Suhler, MD

Conclusions: Potential benefits of suprachoroidal delivery were explored in this analysis. CLS-TA is a proprietary suspension of the corticosteroid triamcinolone acetonide formulated for suprachoroidal administration in the treatment of macular edema associated with uveitis. In this post hoc analysis, unrescued CLS-TA subjects experienced statistically significant greater reduction in central subfield thickness (CST) and tended towards greater improvement in best corrected visual acuity (BCVA) compared with control subjects rescued with therapies reflecting current clinical treatment. Suprachoroidally administered CLS-TA also appeared to be associated with a lower incidence of intraocular pressure (IOP)-related safety findings. This post hoc analysis provides a comparison of CLS-TA to a “real world” mix of rescue treatments, and corroborates the pre-specified endpoints of the Phase 3 PEACHTREE study.

Title: Systemic Therapy and Efficacy of CLS-TA: Results from the Phase 3 PEACHTREE Clinical Trial

Lead Author: Phoebe Lin, MD, PhD

Conclusions: This analysis explored the potential impact of systemic immunomodulatory therapy on outcomes for CLS-TA treatment of uveitic macular edema. For this post hoc analysis, subjects were classified into two groups: those who did or did not receive systemic immunomodulatory therapy during the baseline visit. The benefit of suprachoroidally injected CLS-TA versus the control in treating macular edema associated with non-infectious uveitis was noted regardless of administration of systemic therapy at baseline, and these results corroborate the prespecified study analyses in PEACHTREE.

Title: OCT Anatomic and Temporal Biomarkers in Uveitic Macular Edema

Lead Author: Dilraj S. Grewal, MD

Conclusions: There is limited information on longitudinal structure-functional correlations in uveitic macular edema. In clinical practice, physicians often base treatment decisions on both BCVA and optical coherence tomography (OCT) assessment. This study assessed these relationships, focusing on baseline anatomic features with potential prognostic value for visual response in a post hoc analysis of 198 eyes with non-infectious uveitis. The analysis showed clinically relevant relationships between BCVA and OCT anatomic and temporal features. Anatomic response may precede visual response in uveitic macular edema.

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. CLS-AX is currently in a Phase 1/2a clinical trial and additional information can be found on <https://clinicaltrials.gov> (NCT04626128).

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 medications, new formulations of medicines, as well as future innovations such as gene therapy. 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 XIPERE™ (triamcinolone acetonide suprachoroidal injectable suspension)

XIPERE™ (triamcinolone acetonide suprachoroidal injectable suspension), formerly known as CLS-TA, is a proprietary suspension of the corticosteroid triamcinolone acetonide formulated for administration to the back of the eye that is being investigated for the treatment of macular edema associated with uveitis. Clearside's patented technology is designed to deliver drug to the suprachoroidal space located between the choroid and the outer protective layer of the eye, known as the sclera. Suprachoroidal injection enables the rapid and adequate dispersion of medicine to the back of the eye, offering the potential for the medicine to act longer and minimize harm to the surrounding healthy parts of the eye. Bausch + Lomb, a leading global eye health business of Bausch Health Companies Inc. (NYSE/TSX: BHC), has the exclusive license for the commercialization and

development of XIPERE in the United States and Canada and an exclusive option for Europe and the United Kingdom, Australia and New Zealand, and South America and Mexico (through a license agreement between Clearside and Bausch Health's affiliate). Arctic Vision, a specialty ophthalmology company based in China, has the exclusive license for the commercialization and development of XIPERE in Greater China and South Korea.

About PEACHTREE

PEACHTREE, a randomized, masked, sham-controlled Phase 3 trial, enrolled 160 patients with macular edema associated with non-infectious uveitis, and compared XIPERE dosed every 12 weeks to sham control. The PEACHTREE trial met its primary endpoint, with 47% of patients in the XIPERE arm gaining at least 15 letters in best corrected visual acuity from baseline at week 24, compared to 16% of patients in the sham control arm ($p < 0.001$), using standardized Early Treatment of Diabetic Retinopathy Study (ETDRS) visual acuity testing. All key secondary and additional endpoints of the PEACHTREE trial were also achieved.

About Clearside Biomedical

Clearside Biomedical, Inc. is a biopharmaceutical company dedicated to developing and delivering treatments that restore and preserve vision for people with serious back of the eye diseases. Clearside's proprietary SCS Microinjector[®] targets the suprachoroidal space (SCS[®]) and offers unique access to the macula, retina and choroid where sight-threatening disease often occurs. The Company's SCS injection platform is an inherently flexible, in-office, non-surgical procedure, intended to provide targeted delivery to the site of disease and to work with both established and new formulations of medications, as well as future therapeutic innovations such as gene therapy. 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-TA and therapies 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, 2019, filed with the U.S. Securities and Exchange Commission ("SEC") on March 13, 2020, Clearside's Quarterly Report on Form 10-Q for the quarter ended September 30, 2020, filed with the SEC on November 10, 2020 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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