BrainStorm Cell Therapeutics Announces Publication of NurOwn® ALS Phase 2 Randomized Clinical Trial Data in Neurology

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- A single transplantation of MSC-NTF cells (NurOwn®) in ALS clinical trial participants met the primary safety endpoint and demonstrated promising stabilization of ALS disease progression of up to 12-16 weeks in a prespecified subgroup of ALS rapid progressors
- Cerebrospinal fluid (CSF) analysis confirmed the biological action of MSC-NTF cells on neuroprotection and neuroinflammation pathways
- These promising Phase 2 results established an important treatment objective now being evaluated in the ongoing Phase 3 repeat-dose MSC-NTF cell clinical trial

NEW YORK, Nov. 20, 2019 (GLOBE NEWSWIRE) -- BrainStorm Cell Therapeutics Inc. (NASDAQ: BCLI), a leader in the development of innovative autologous cellular therapies for highly debilitating neurodegenerative diseases, today announced publication of "NurOwn Phase 2 Randomized Clinical Trial in ALS: Safety, Clinical and BioMarker Results," in the international, peer-reviewed journal *Neurology*: Volume 93, Number 24 (Published ahead of print.)

The objective of the randomized placebo-controlled Phase 2 clinical trial was to determine the safety and efficacy of a single transplantation of autologous bone-marrow derived MSC-NTF cells (NurOwn) in participants with ALS. The clinical trial enrolled 48 participants randomized 3:1 (treatment: placebo) at three leading U.S. investigative sites: Massachusetts General Hospital, Mayo Clinic and University of Massachusetts Medical School. After a three-month pre-transplant run-in period, participants received one dose of MSC-NTF cells (n=36) or placebo (n=12) and were followed for six-months. CSF was collected prior to and two-weeks post-transplantation. The clinical trial confirmed that a single transplantation of MSC-NTF (NurOwn) cells was safe and well-tolerated. BrainStorm's NurOwn cell therapy is the furthest advanced autologous stem cell treatment in development for ALS. On October 11, the Company announced that the NurOwn, Phase 3 clinical trial for ALS was fully enrolled.

Key efficacy findings:

- The rate of ALS disease progression (ALSFRS-R slope) was stabilized for up to 12-16 weeks in a pre-specified group of participants with rapid progression ($p<0.05$) following a single transplantation
- A higher proportion of MSC-NTF treated study participants experienced ≥1.5 point/month improvement in ALSFRS-R slope at all post-treatment time points, and this was statistically significant at 4 and 12 weeks post-transplantation ($p=0.004$ and 0.046, respectively)
- CSF neurotrophic factors increased and inflammatory biomarkers decreased 2 weeks post-transplantation ($p<0.05$)
- CSF MCP-1 levels (a marker of microglial activation and neuroinflammation) significantly decreased post-transplantation and correlated with ALSFRS-R slope improvement at all time points ($p<0.05$)

"The entire investigative team working on the study are highly encouraged by the promising clinical results," said Phase 2 trial manuscript lead author Robert Brown DPhil, Leo P. and Theresa M. LaChance Chair in Medical Research and Chair of the Department of Neurology at the University of Massachusetts Medical School (UMMS) and UMass Memorial Medical Center, "In addition, we observed a clear biological effect of the treatment on CSF biomarkers to support its proposed mechanism of action in ALS."

"This was a high quality Phase 2 study that identified dosing, safety, and an important efficacy signal. These data are exactly what is needed to move forward with the current Phase 3 testing," added Dr. Merit Cudkowicz the Julieanne Dorn Professor of Neurology at Harvard Medical School and the Director of the Healey Center for ALS and Chair of Neurology at Mass General Hospital. "These promising results encourage us to complete the pivotal Phase 3 trial as rapidly as possible," said Dr. Anthony Windebank, Judith and Jean Pape Adams Foundation Professor of Neuroscience at the Mayo Clinic.

"The team at BrainStorm and the clinical investigators, led by Professors Brown, Cudkowicz and Windebank, have made a significant contribution to ALS research and to the peer reviewed-scientific literature with the publication of this study in *Neurology*," said Ralph Kern, MD, MHSc, Chief Operating Officer and Chief Medical Officer of BrainStorm. He added, "We met our primary endpoint and demonstrated that a single dose of NurOwn was safe and well-tolerated while supporting NurOwn's mechanism of action on neuroprotection and neuroinflammation pathways in ALS. We look forward to completing the current Phase 3 study to confirm the promising Phase 2 findings and expand our understanding of the potential of MSC-NTF cell therapy in ALS."

"Having a major study peer-reviewed, accepted and published by the highly respected journal *Neurology* is a significant milestone for BrainStorm, and I thank the entire team for the many hours they have contributed to the research and publication process," said Chaim Lebovits, President and CEO of BrainStorm. "Results from the study underscore the importance of conducting a larger Phase 3 clinical trial that will build upon the data collected in our Phase 2 study. Our Phase 3 study has recently reached full recruitment. All 200 ALS patients have been enrolled. We look forward to reporting our clinical results in the scientific literature and through corporate announcements."

“We are pleased that the U.S. Phase 2 results of NurOwn are published, and that the Phase 3 trial enrollment is now complete,” said Dr. Neil Thakur, PhD, Executive Vice President for Mission Strategy at the ALS Association. The initial testing of NurOwn in ALS is promising. We stand ready to support rapid review by the FDA of BrainStorm’s biologics license application of NurOwn.”

Brian Wallach, Co-Founder of I AM ALS, said, “The publication of this important Phase 2 data is a significant milestone in the clinical development program for BrainStorm’s NurOwn. I AM ALS supports the development of potentially transformative therapies like NurOwn and shares in the hope that when the Phase 3 is completed that it will be the first disease modifying therapy for ALS.”

About NurOwn®

NurOwn® (autologous MSC-NTF) cells represent a promising investigational therapeutic approach to targeting disease pathways important in neurodegenerative disorders. MSC-NTF cells are produced from autologous, bone marrow-derived mesenchymal stem cells (MSCs) that have been expanded and differentiated ex vivo. MSCs are converted into MSC-NTF cells by growing them under patented conditions that induce the cells to secrete high levels of neurotrophic factors. Autologous MSC-NTF cells can effectively deliver multiple NTFs and immunomodulatory cytokines directly to the site of damage to elicit a desired biological effect and ultimately slow or stabilize disease progression. BrainStorm has fully enrolled a Phase 3 pivotal trial of autologous MSC-NTF cells for the treatment of amyotrophic lateral sclerosis (ALS). BrainStorm also received U.S. FDA acceptance to initiate a Phase 2 open-label multicenter trial in progressive MS and enrollment began in March 2019.

About BrainStorm Cell Therapeutics Inc.

BrainStorm Cell Therapeutics Inc. is a leading developer of innovative autologous adult stem cell therapeutics for debilitating neurodegenerative diseases. The Company holds the rights to clinical development and commercialization of the NurOwn® technology platform used to produce autologous MSC-NTF cells through an exclusive, worldwide licensing agreement. Autologous MSC-NTF cells have received Orphan Drug status designation from the U.S. Food and Drug Administration (U.S. FDA) and the European Medicines Agency (EMA) in ALS. BrainStorm has fully enrolled a Phase 3 pivotal trial in ALS (NCT03280056), investigating repeat-administration of autologous MSC-NTF cells at six sites in the U.S., supported by a grant from the California Institute for Regenerative Medicine (CIRM CLIN2-0989). The pivotal study is intended to support a filing for U.S. FDA approval of autologous MSC-NTF cells in ALS. For more information, visit BrainStorm's website at www.brainstorm-cell.com.

Safe-Harbor Statements

Statements in this announcement other than historical data and information constitute "forward-looking statements" and involve risks and uncertainties that could cause BrainStorm Cell Therapeutics Inc.'s actual results to differ materially from those stated or implied by such forward-looking statements. Terms and phrases such as "may," "should," "would," "could," "will," "expect," "likely," "believe," "plan," "estimate," "predict," "potential," and similar terms and phrases are intended to identify these forward-looking statements. The potential risks and uncertainties include, without limitation, risks associated with BrainStorm's limited operating history, history of losses; minimal working capital, dependence on its license to Ramot's technology; ability to adequately protect the technology; dependence on key executives and on its scientific consultants; ability to obtain required regulatory approvals; and other factors detailed in BrainStorm's annual report on Form 10-K and quarterly reports on Form 10-Q available at http://www.sec.gov. These factors should be considered carefully, and readers should not place undue reliance on BrainStorm's forward-looking statements. The forward-looking statements contained in this press release are based on the beliefs, expectations and opinions of management as of the date of this press release. We do not assume any obligation to update forward-looking statements to reflect actual results or assumptions if circumstances or management's beliefs, expectations or opinions should change, unless otherwise required by law. Although we believe that the expectations reflected in the forward-looking statements are reasonable, we cannot guarantee future results, levels of activity, performance or achievements.

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