

FOR IMMEDIATE RELEASE:

New Victories for Adult Stem Cell Research

Scientists make headway in treating damaged hearts with muscle, fat and bone marrow cells

February 6, 2007, New York - The Adult Stem Cell Research Network announced that new clinical and pre-clinical data on adult stem cells was presented at the 4th Annual Meeting of Cell Therapy for Cardiovascular Disease Sponsored by the Cardiovascular Research Foundation. Held at Columbia University, it attracted over 300 attendees from around the world.

Adult Muscle Stem Cells – Myoblasts

Two studies show encouraging promise in using adult muscle stem cells derived from a patient's own thigh tissue to treat advanced heart failure. Dr. Warren Sherman of Columbia University and Dr. Nabil Dib of the University of California, San Diego presented data on this approach, which has been used to treat over 300 patients in clinical trials since 2000. The procedure involves delivering cells via a thin plastic tube with an injection needle on the tip, inserted in the patients groin and directed to the inside of the heart in order to grow new muscle in the heart's scar tissue. Dr. Sherman presented final one year results of the MYOHEART trial sponsored by Bioheart, Inc., in which 83 percent of patients treated in this manner with adult muscle stem cells, also known as myoblasts, improved. Only 17 percent remained unchanged or worsened. "Eighty-three percent of myoblast treated heart failure patients improving compares favorably with the 369 patient 'gold-standard' bi-ventricular pacemaker study where approximately 55 percent of the 187 treated patients showed improvement in NYHA Class or quality of life score as compared to only 40 percent improvement for the 182 control patients who were on drug therapy alone," stated Dr. Sherman. A separate study led by Dr. Nabil Dib, sponsored by Advanced Cell Therapy, Inc., showed similar results, and both groups have now moved onto Phase II/III placebo controlled trials currently in the process of enrolling together more than 495 patients. The procedure (16 injections in a cardiac cath lab) takes about 45 minutes.

Adipose Derived Stem Cells

Dr. Keith March of the Indiana University Medical Center, Indiana Center for Vascular Biology and Medicine, Professor Patrick Serruys of the ThoraxCentre, Rotterdam, Netherlands, and Francisco Fernandez-Avilés of Madrid, Spain all presented data related to the use of stem cells derived from a patient's own adipose (fat) tissue. Pre-clinical studies have demonstrated improved blood flow and a reduction of scar size when adipose derived stem cells are provided within a short time period following the heart attack by coronary infusion. Dr. March presented data that two cell types, adipose stem cells and endothelial progenitor cells, work in partnership to provide much more blood

flow than either cell type can alone. Clinical studies of cells from adipose tissue have begun at a number of centers worldwide. “We are very interested to see that cells from adipose tissue are being tested in these early trials,” said Dr. March, noting that “the use of one’s own cells from fat tissue is potentially a very practical approach.” Various studies are being sponsored separately by Cytori Therapeutics, Inc., Tissue Genesis, Inc. and Bioheart, Inc.

Bone Marrow Derived Stem Cells

Dr. Andreas M. Zeiher, MD, of the University of Frankfurt (Frankfurt, Germany), and a number of other researchers provided both pre-clinical and clinical data from the use of bone marrow derived cells. These cells seem to function primarily by promoting growth of new blood vessels, which can help preserve tissue following a heart attack. Data from clinical studies of hundreds of patients has demonstrated a noticeable improvement in heart function, especially in patients whose hearts start with low pumping ability. More clinical studies are in progress. Sponsors of bone marrow cell studies include Osiris Therapeutics and Boston Scientific Guidant.

Modified Adult Stem Cells

Dr. Marc Penn from Cleveland Clinic presented pre-clinical data demonstrating that adult muscle stem cells (myoblasts) modified to overexpress SDF-1 (stromal derived factor-1) are able to achieve significant improvements in the pumping ability of the heart. Myoblasts alone in his study provided a 27 percent improvement of the pumping ability of the damaged animal hearts he treated, while SDF-1 modified myoblasts provided a 54 percent improvement. Dr. Penn is very optimistic about the future of such heart therapies. “Clearly this is a multi-year process,” he says. “We’re only in Phase I, but the excitement over this treatment is a direct result of past successes. [Through stem cell research,] we’re getting to where we can not only help victims live after an attack, but can improve heart functioning and help them live more meaningful lives. We desperately need this research.” Many years of lab and animal research have now led to an application with the FDA for human clinical studies of this modified stem cell composition derived from a patient’s own thigh muscle. Bioheart, Inc. is sponsoring the pre-clinical development of this composition for treating advanced heart failure.

Many of the researchers whom presented at the Columbia meeting are members of the Adult Stem Cell Research Network, a project of the Cell Therapy Foundation. For further information on adult stem cell research or the Cell Therapy Foundation and upcoming fund raising events, please contact Brent Clifton, Executive Director at bclifton@celltherapyfoundation.org. Plans are in the works for a fund raising dinner in New York in the near future.

ABOUT THE ADULT STEM CELL RESEARCH NETWORK

The Adult Stem Cell Research Network (<http://www.ascrnetwork.org>) is a project of the Cell Therapy Foundation dedicated to connecting researchers with research. The Cell

Therapy Foundation's focus is to advance adult stem cell research and increase public awareness of progress in the field, ultimately improving human lives.

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