Stem cells from fat tissue offer hope for MS treatment

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A preliminary study on the use of stem cells obtained from a patient's own adipose tissue in the treatment of multiple sclerosis (MS) has shown promising results. The three case studies, described in BioMed Central's open access *Journal of Translational Medicine* support further clinical evaluation of stromal vascular fraction (SVF) cells in MS and other autoimmune conditions.

Thomas Ichim, from Medistem Inc., and Dr. Boris Minev, from the Division of Neurosurgery, University of California San Diego, worked with a team of researchers to demonstrate the possible effectiveness of SVF cells in MS treatment. Minev said, "All three patients in our study showed dramatic improvement in their condition after the course of SVF therapy. While obviously no conclusions in terms of therapeutic efficacy can be drawn from these reports, this first clinical use of fat stem cells for treatment of MS supports further investigations into this very simple and easily-implementable treatment methodology".

MS is an autoimmune condition, in which the body's own defences attack nerve cells, resulting in loss of their fatty myelin sheath. The first symptoms usually occur in young adults, most commonly in women. It is believed that SVF cells, and other stem cells, may be able to treat the condition by limiting the immune reaction and promoting the growth of new myelin. According to Minev, "None of the presently available MS treatments selectively inhibit the immune attack against the nervous system, nor do they stimulate regeneration of previously damaged tissue. We've shown that SVF cells may fill this therapeutic gap".

Minev and his colleagues provided the SVF treatment to three patients with MS. The first had suffered frequent painful seizures for the previous three years; after treatment he reported that the seizures had stopped completely and that he had seen significant improvements in his cognition and a reduction of spasticity in his arms and legs. The second patient reported improvements in his sense of balance and coordination, as well as an improved energy level and mood. The final patient had been diagnosed with MS in 1993. After SVF treatment in 2008, his gait, balance and coordination improved dramatically over a period of several weeks. According to Minev, "His condition continued to improve over the next few months and he is currently reporting a continuing improvement and ability to jog, run and even bicycle".

More information: Non-Expanded Adipose Stromal Vascular Fraction Cell Therapy for Multiple Sclerosis, Neil H Riordan, Thomas E Ichim, Wei-Ping Min, Hao Wang, Fabio Solano, Fabian Lara, Miguel Alfaro, Jeorge P Rodriguez, Robert J Harman, Amit N Patel, Michael P Murphy and Boris Minev , Journal of Translational Medicine (in press), www.translational-medicine.com/

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