# Bone-marrow stem cells in MS show promise

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A groundbreaking trial to test bone marrow stem cell therapy with a small group of patients with multiple sclerosis (MS) has been shown to have possible benefits for the treatment of the disease.

Bone marrow stem cells have been shown in several experimental studies to have beneficial effects in disease models of MS. The research team, led by Neil Scolding, Burden Professor of Clinical Neurosciences for the University of Bristol and North Bristol NHS Trust, have now completed a small trial in patients with MS to begin translating these findings from the laboratory to the clinic.

The Bristol team report on this pioneering trial in an article published online in *Clinical Pharmacology and Therapeutics*. The paper, 'Safety and feasibility of autologous bone marrow cellular therapy in relapsing-progressive multiple sclerosis' was performed at the Institute of Clinical Neurosciences, Frenchay Hospital, Bristol and the Bristol Haematology and Oncology Centre.

The study explored the safety and feasibility of cell therapy in patients with MS. Participants had a general anaesthetic during which bone marrow was harvested. The marrow cells were filtered and prepared so that they could be injected into the patient's vein later the same day.

The procedure was well tolerated and the participants were followed up for a year. No serious adverse effects were encountered. The results of clinical scores were consistent with stable disease. The results of neurophysiological tests raised the possibility of benefit.

Professor Neil Scolding said: "We are encouraged by the results of this early study. The safety data are reassuring and the suggestion of benefit tantalising. A larger study is required to assess the effectiveness of bone marrow cellular therapy in treating MS. We are hopeful that recruitment to this phase 2/3 study may begin towards the end of this year.

"Research into the underlying mechanisms is ongoing and vital, in order to build on these results. We believe that stem cells mobilised from the marrow to the blood are responsible, and that they help improve disease in several ways, including neuroprotection and immune modulation."

The aim of the trial was to find out what effects, good or bad, bone marrow stem cells has on patients with MS, and their disability.

Bone marrow is known to contain stem cells capable of replacing cells in many types of tissues and organs - and so is of great interest to those working to develop new treatments for many diseases, including those affecting the nervous system.

**More information:** Safety and feasibility of autologous bone marrow cellular therapy in relapsing-progressive multiple sclerosis, Neil Scolding, Clinical Pharmacology & Therapeutics advance online publication, 5 May 2010. DOI:10.1038/sj.clpt. 12-09-0672.R2

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