# Promising results for stem cell therapy in MS

Download PDF Copy

Jan 28 2015

By Eleanor McDermid, Senior medwireNews Reporter

Preliminary findings suggest that nonmyeloablative haematopoietic stem cell transplantation (HSCT) may arrest, or even reverse, the progress of disease among patients with relapsing–remitting multiple sclerosis (MS).

The study, which appears in *JAMA*, involved 145 patients, but had no control group, and outcomes were rated by clinicians who were aware that the patients had received stem cell therapy.

The patients achieved significant improvements in their Expanded Disability Status Scale (EDSS) scores, from 4.0 at baseline to 3.0 after 2 years, report Richard Burt, from Northwestern University in Chicago, Illinois, USA, and co-authors.

The group overall had similar improvements in their Neurologic Rating Scale and Multiple Sclerosis Functional Composite scores, and the average number of gadolinium-enhanced lesions on brain magnetic resonance imaging fell significantly after treatment, from 3.22 to 0.07 at 2 years. Average lesion volume fell by 33%.


## Related Stories

- Cornell study details role of stem cell in deadly gastric cancer
- Discovery of cellular 'hands' could have implications in the fields of cell, developmental biology
- SVC112 molecule acts specifically against head and neck cancer stem cells


Before transplantation, all patients underwent a conditioning (immunoablative) regimen involving cyclophosphamide plus either alemtuzumab or thymoglobulin. Although this regimen is less intensive than those used in some other studies, editorialist Stephen Hauser (University of California, San Francisco, USA) cautions that “it is by no means clear that the beneficial effects result from the infusion of stem cells rather than from the conditioning regimen.”

Nevertheless, he says: “Even if the ultimate role of HSCT is only to improve the safety of immunosuppressive regimens used for MS by shortening the period of dangerous immune suppression, this approach could still represent a valuable adjunct.”

The estimated rate of relapse-free survival was 89% at 2 years and 80% among patients followed up for 4 years, with respective progression-free survival rates of 92% and 87% and disease activity-free survival of 80% and 68%.

Besides patients with secondary-progressive MS, those with a disease duration longer than 10 years also failed to benefit from HSCT. Likewise, EDSS scores did not improve in patients with sustained peritransplant fever (>38.5$^{o}$C).

In his editorial, Hauser says it would be of “considerable interest” to determine the effect of HSCT on oligoclonal immunoglobulin and oligoclonal B cells, as their disappearance would imply that the therapy had genuinely “reset the autoimmune process in the central nervous system”.

But he notes that, given the lifelong nature of MS, very long follow-up studies will be needed to confirm any benefits of HSCT.