Reviewer's report

Title: The Mesenchymal Stem Cells in Multiple Sclerosis (MSCIMS) Trial protocol and baseline cohort characteristics: an open-label pre-test : post-test study with blinded outcome assessments.

Version: 1 Date: 7 February 2011

Reviewer: Franca Fagioli

Reviewer's report:

The paper by Connick et al. describes a phase IIA study of autologous mesenchymal stem cells (MSCs) in secondary progressive MS as a putative neuroprotective therapy.

This is an interesting paper from a group with such an experience in the field of multiple sclerosis.

The trial aims to establish the safety and feasibility of autologous intravenous mesenchymal stem cell therapy in multiple sclerosis (phase IIA) and to explore the potential efficacy over six months from intravenously administered autologous MSCs.

Technically, the experimental approach is well-described including cell expansion and characterization, the surgical procedures and clinical, neurophysiological and imaging assessments.

Major comments:
- A more extensive discussion, with more references to literature, would be appreciated.
- Could the follow up be longer?

Minor comments:
- Page 14. The statement “Retinal nerve fibre layer thickness was reduced by 15.3% in patients’ eyes with a previous history of optic neuritis or Unthoff’s phenomenon (clinically affected) compared to clinically unaffected eyes (Absolute values: 85.5 µm [SD 10.2 µm] vs. 72.4 µm [SD 12.9 µm]; p = 0.0399)” should be corrected as “…..Absolute values: 72.4 µm [SD 12.9 µm] vs 85.5 µm [SD 10.2 µm];……”
- The results of “(iii) Comparative performance between patients and controls” are in part detailed in table 3, but the table is not cited.
- The editing of some reference should be corrected (i.e. N. 12,25)

Level of interest: An article of importance in its field

Quality of written English: Acceptable
Statistical review: Yes, but I do not feel adequately qualified to assess the statistics.