LETTER TO THE EDITOR

Stem cells in the treatment of chronic spinal cord injury: evaluation of somatosensitive-evoked potentials in 39 patients

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In the October 2009 issue of *Spinal Cord*, Cristante *et al.*¹ reported that cortical somatosensory-evoked potentials re-emerged in 26 of 39 (66.7%) subjects with chronic spinal cord injury who received autologous bone marrow stem cells. The reported changes are far beyond the rates of spontaneous somatosensory-evoked potential recovery among patients with acute spinal cord injury from two recent multi-center studies.^{2,3} While we applaud the authors for undertaking such an exciting and demanding longitudinal study, we would like to express some concerns about the methodology for recording somatosensory-evoked potentials and the interpretation of results.

The authors apparently did not adhere to the internationally recommended guidelines for routine clinical applications of SEPs⁴ that we would have expected to be closely followed, if not exceeded, in human experimental studies. Specifically, multi-level recordings were not employed, the intensity of stimulation was not indicated at each examination point, and the number of trials averaged and the number of blocks (replicates) recorded are unknown. Of most importance, however, is the lack of rationale and scrutiny as to how cortical responses were identified. Also, the markers, as shown in Figure 1 (page 735), appear to be set rather arbitrarily. Additional relevant missing information is the prevalence and stability of emerged responses, if the responses emerged bilaterally, and inter-side differences.

Finally, it would be of most value to understand how somatosensory-evoked potential changes were related to changes in the clinical status (i.e., timing and extent of changes of ASIA sensory-motor scores and functional outcomes), which is ultimately the most relevant outcome.

With the expectation of more such trials to come, it is mandatory to comply with the internationally recommended standards to ensure valid comparisons between different evaluation points and across different studies, which will allow a meaningful interpretation of the reported results.

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