Clinical safety and primary efficacy of bone marrow mesenchymal cell transplantation in subacute spinal cord injured patients.

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Source

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Abstract

BACKGROUND:
In recent years, some studies were conducted to evaluate the effects of stem cells from different sources on patients with spinal cord injury (SCI). This study was carried out to evaluate the feasibility and therapeutic potential of autologous bone marrow cell (BMC) transplantation in complete spinal cord injured patients at thoracic level.

METHODS AND MATERIALS:
This nonrandomized clinical trial compared the results of autologous BMC transplantation into cerebrospinal fluid (CSF) via lumbar puncture (LP) in patients having complete SCI, with patients as control group who received conventional treatment without BMC transplantation. The patients underwent preoperative and follow-up neurological assessments using the American Spinal Injury Association (ASIA) impairment scale. Then, the participants were followed for months.

RESULTS:
Eleven patients with the mean age of years and 20 patients with the mean age of years were enrolled in the study and in the control group, respectively. None of the patients in the study and control group experienced any adverse reaction and complications, neither after routine treatment nor after cell transplantation. Five patients out of ) showed marked recovery, but the result was statistically borderline (~).

CONCLUSION:
We conclude that transplantation of autologous BMC via LP is a feasible and safe technique, but at the moment, no clear answer can be given regarding the clinical potential, despite a potential tendency to treat SCI patients, observed through statistics.

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