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Special Issue on Cell Therapy

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Special Issue on Cell Therapy

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(Guest Editor)

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The current issue of the *Journal of Neurorestoratology* constitutes the most complete and updated compendium of the use of olfactory ensheathing cells (OEC) in clinic use for different traumatic and vascular pathologies of the central nervous system.

The identification of OECs as neural stem cells was carried out by Graziadei PP, first in birds [1] and then in mammals, between 1979 and 1980. In the 1990s, in parallel, Professors Ramon Cueto [2] and Raisman [3], both founders of the IANR, studied its therapeutic potential for injuries of the central nervous system in preclinical trials. These findings were also corroborated by other laboratories. Between 2001 and 2003, Professors Huang [4] and Rabinovich [5] transplanted OECs from abortion fetal olfactory bulb in patients with chronic complete spinal cord injury (SCI) and showed improvement of neurological functions. Simultaneously Professor Carlo Lima, from Portugal, treated 7 patients with chronic spinal cord injury with autologous olfactory mucosa. In 2006 he published the clinical follow-up of these first 7 patients treated, demonstrating that the treatment indicated to be safe and effective to treat severe and chronic spinal cord injuries [6].

In this issue, Professor Xijing He's team presents an analytical work, organized by Zhijian Cheng and 8 other co-authors, of what happened with 13 patients treated between 2005

and 2007. In these patients, it was used by direct injection of fetal OECs. 16 years later, none of those treated presented any abnormal development (benign or malignant tumors) or secondary autoimmune reactions, but showed clinical improvements. For this reason, the patients with the surgical method of OEC implants is safe and seems to be effective in the treatment of patients with chronic and complete lesions of the spinal cord, which allows the authors to conclude that this is a valid possibility to treat patients via surgery with fetal OEC.

The team of Professor Zuncheng Zheng, in a study carried out by Naifeng Kuang and 9 collaborators, summarizes the clinical experience of 39 patients with spinal cord injury who between 2006 and 2007 also received fetal OEC by surgical implant in the area of injury. The results of this clinical trial conducted simultaneously with the aforementioned one corroborate the findings of Professor He's team corroborate the safety and efficacy of fetal OEC. The excellent work done by Professor Huang Hongyun's team using the intranasal route of administration for fetal OEC in patients with vascular dementia shows the safety and efficacy of this therapy. This paper is supported for the review paper presented by Shaomin Li and his team on the effects of OEC on vascular lesions of the brain.

Finally, Professor Alok Sharma using bone

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marrow mononuclear cells summarizes his valuable experience of more than a decade treating 216 patients with amyotrophic lateral sclerosis in different clinical conditions. The doubling of the expectation of life of the patients treated with respect to the patients of the control group as well as the identification of the patients who can benefit the most from this therapy become a solid endorsement and scientific foundation for those of us who work on this pathology.

References

- [1] Graziadei PP, Okano M. Neuronal degeneration and regeneration in the olfactory epithelium of pigeon following transection of the first cranial nerve. *Acta Anat (Basel)* 1979, **104**(2): 220–236.
- [2] Ramón-Cueto A, Nieto-Sampedro M. Regeneration into the spinal cord of transected dorsal root axons is promoted by ensheathing glia transplants. *Exp Neurol* 1994, **127**(2): 232–244.
- [3] Li Y, Field PM, Raisman G. Repair of adult rat corticospinal tract by transplants of olfactory ensheathing cells. *Science* 1997, **277**(5334): 2000–2002.
- [4] Huang HY, Chen L, Wang HM, et al. Influence of patients' age on functional recovery after transplantation of olfactory ensheathing cells into injured spinal cord injury. *Chin Med J (Engl)* 2003, **116**(10): 1488–1491.
- [5] Rabinovich SS, Seledtsov VI, Poveschenko OV, et al. Transplantation treatment of spinal cord injury patients. *Biomed Pharmacother* 2003, **57**(9): 428–433.
- [6] Lima C, Pratas-Vital J, Escada P, et al. Olfactory mucosa autografts in human spinal cord injury: a pilot clinical study. *J Spinal Cord Med* 2006, **29**(3): 191–203;discussion204–206.