Study of the usefulness of fibrin gel as a biological scaffold for intracerebral transplantation of mesenchymal stem cells. [Italian]

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Abstract:

Objetive: To analyze the effect of intracerebral transplantation of adult stem cells obtained from bone marrow stroma in an experimental model of traumatic brain injury. Material and Method: We performed a traumatic brain contusion in 20 adult Wistar rats. At 2 months of injury, 3x10⁶ bone marrow stromal cells as saline suspension of CM, with a total volume of 30 muL, was injected in the area of traumatic brain injury. In 10 animals the injection was made directly over the traumatic brain injury and in other 10 animals the injection was made on the mesh of fibrin gel. The functional evolution of animals was studied from injury to two months after transplantation using the mNSS test and the Rota-rod test. Results: All animals showed a clear and significant functional deficits after traumatic injury, and experienced significant improvement after intracerebral transplantation of bone marrow stromal cells, with no statistically significant differences between experimental groups. Conclusion: The insertion of a mesh of fibrin in the area of brain injury, as support for intralesional administration of CM, in an experimental model of traumatic brain injury, does not seem to be a useful technique to optimize the functional results obtained with this type of therapy cell.