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Bone marrow transplantation: A life saving procedure

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Not more than twenty years ago bone marrow transplantation considered as an experimental procedure but now it is a life saving practice for numerous incurable and fatal diseases. To decrease the various blood disorders as well as cancer, bone marrow transplantation has evolved enormously. Individuals are now confronted by many puzzling terms including peripheral blood stem cell transplantation, bone marrow transplantation and hematopoietic cell transplantation. Bone marrow transplantation used to treat debilitating diseases such as aplastic anemia, Thalassemia, diabetes, Parkinson's disease. The first bone marrow transplants were in the form of oral delivery of healthy marrow to the persons suffering from blood diseases. The treatment was not mainly effective however physicians needed correct idea for transplantation. 1970s clinical bone marrow transplantation takes off. In Pakistan, stem cell transplant was started in 1995 by Dr Tahir Shamsi, since then, several allogeneic stem cell transplant Centre and a centre in Aga Khan Hospital Pakistan also functioning. Mostly transplantation has been carried out in patients suffering from aplastic anemia and β -thalassemia. Fortunately, bone marrow/stem cell transplantation got remarkable success. The purpose of this study is to give awareness and knowledge especially to the students and the community about bone marrow/stem cell transplantation techniques, its importance, hopes to cure from fatal diseases, evaluate risks factors as well as donor criteria. We expect that, by this study people can get knowledge and awareness about bone marrow transplantation and the institutes in Pakistan where it has been occurring in a very low cost as compare to other countries.

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Study of transected sciatic nerve repair by chitosan/polyethylene oxide scaffolds and human mesenchymal stem cells from Wharton's jelly in Wistar rats: An electrophysiological study

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Purpose: The aim of this study was to determine the effects of chitosan/Polyethylene oxide scaffolds and human mesenchymal stem cells from Wharton's jelly on regeneration of the sciatic nerve injury in Wistar rats.

Methods: In this research 42 male adult rats weighting 200-250 g were divided into six groups' including; Normal group: Healthy rats without any injuries. In Control group: Sciatic nerve was cut in the middle region of thigh and epineuria were sutured. In Sham group: Culture medium was injected on the sciatic nerve damaged. In Cs/PEO group: Scaffold with a thin Cs/PEO was used around the sciatic nerve damaged. In cell group: 50000WJ-MSCs injected in the site of nerve damaged. In Cs/PEO with cell group: Scaffold with a thin Cs/PEO was studied by electroctrophysiological assessments.

Results: At the end of the eight week, the results of latency and amplitude of electrophysiology showed that Cs/PEO and hWJ-MSCs group was significantly better than control, sham, Cs and hWJ-MSCs groups (P<0.05).

Conclusion: The results suggested that Cs/PEO had potential capability of regeneration of sciatic nerve injury.

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