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Improvement of renal function after human umbilical cord mesenchymal stem cell treatment on chronic renal failure and thoracic spinal cord entrapment: A case report

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Chronic renal failure is an important clinical problem with significant socioeconomic impact worldwide. Thoracic spinal cord entrapment induced by a metabolic yield deposit in patients with renal failure results in intrusion of nervous tissue and consequently loss of motor and sensory function. Human umbilical cord mesenchymal stem cells are immune naïve and they are able to differentiate into other phenotypes, including the neural lineage. Over the past decade, advances in the field of regenerative medicine allowed development of cell therapies suitable for kidney repair. Mesenchymal stem cell studies in animal models of chronic renal failure have uncovered a unique potential of these cells for improving function and regenerating the damaged kidney. We report a case of a 62-year-old ethnic Indonesian woman previously diagnosed as having thoracic spinal cord entrapment with paraplegic condition and chronic renal failure on hemodialysis. She had diabetes mellitus that affected her kidneys and had chronic renal failure for two years, with creatinine level of 11 mg/dl, and no urinating since then. She was treated with human umbilical cord mesenchymal stem cell implantation protocol. This protocol consists of implantation of 16 million human umbilical cord mesenchymal stem cells intrathecally and 16 million human umbilical cord mesenchymal stem cells intravenously. Three weeks after first intrathecal and intravenous implantation she could move her toes and her kidney improved. Her creatinine level decreased to 9 mg/dl. Now after eight months she can raise her legs and her creatinine level is 2 mg/dl with normal urinating.

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Page 68