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INDUCTION OF LIVER CIRRHOSIS AND TREATMENT OF CIRRHOTIC LIVER BY MESENCHYMAL STEM CELLS DERIVED FROM ADIPOSE TISSUE IN RAT MODEL

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Liver cirrhosis is a chronic disease which normal liver tissue is replaced by fibrosis and scar leading to liver malfunction. The purpose of this study was to induce cirrhosis in rat as an animal model and treat cirrhosis by Mesenchymal stem cells derived from adipose tissue. 45 adult rats were used in this study. Group 1(30 rats) were treated by the mixture of CCL4 and olive oil for 16 weeks till cirrhosis signs appeared. Group 2 (15 rats) were not treated. Following the confirmation of cirrhosis, under anaesthesia, the linea alba was incised, the Stem cells were injected into the Portal vein. 5 weeks later, the rats were euthanized. Samples of liver tissue were collected for histopathological investigation. They were stained by H&E and Masson trichrome and studied by light microscope. Grossly the Cirrhosis liver appeared, Nodular, Pale and yellowish, with adhesion. Microscopic signs were: Diffused fibrosis, fatty changes, diffused necrosis, heterogeneous hepatic parenchyma. The clinical results of treated rats included: Increased movements, appetite, improved behaviour and decreased abdomen size. The histopathologic results of liver

cirrhosis rats treated by stem cells indicated: although different stages of liver fibrosis was observed, however the structural parenchymal lesions were not found and this indicates that liver cells were renewing and regenerating and forming new colonies. In conclusion Liver cirrhosis was induced by IP injection of CCL4. The stem cells were developed from adipose tissue and cirrhotic livers were regenerated by injection of stem cells derived from adipose tissue in the portal vein.

Biography

Dr. Dehghani is a professor of Veterinary Surgery, Dr. Haghani is a graduate student at the department of Surgery, Dr. Namazi is an assistant professor of Pathology, school of Veterinary Medicine, Shiraz University. And Dr. Ghaderi is a professor at the Cancer research centre of the Shiraz University of Medical Science, Shiraz, Iran. His research interest includes Stem Cell and Tissue regeneration.

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