

## عنوان مقاله:

The Ameliorating Effect of Adipose Tissue Stem Cells on Liver Function in Experimental Rats with Liver Fibrosis

## محل انتشار:

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## خلاصه مقاله:

Background: As mesenchymal stem cells have anti-inflammatory and immunomodulating properties and can be a therapeutic option in regenerative medicine, this study was undertaken to determine ameliorating effect of adipose tissue stem cells (AdSCs) on liver function in experimental rats with liver fibrosis. Methods: Thirty-two rats were randomly divided into four equal groups including control group 1 receiving just 1 mL/kg of distilled water, twice a week for 8 weeks (intraperitoneally: IP). Control group 2 received 1mL/kg of olive oil, similarly. Sham group was treated with CCl4 (1 mL/kg) dissolved in 1 mL of olive oil to induce liver injury, identically. In control and sham groups, blood samples were collected at the beginning of week 8. Finally, the experimental group after induction of liver injury, was injected with  $2 \times 10^6$  AdSCs in the tail vein at the beginning of week 8, while a blood sample was provided after 3 and 8 weeks following cell transplantation to determine liver function. Results: AdSC were spindle shape, positive for osteogenic and adipogenic inductions and expressed mesenchymal and lacked hematopoietic markers. Following cell transplantation, an improvement in albumin, total protein, and direct and indirect bilirubin were noticed denoting to repairing effect of AdSCs and treatment of liver injury. Conclusion: AdSCs improved liver function and acted as a promoting factor for liver regeneration. So they can be helpful for ameliorating hepatic injuries. These findings can be beneficial for cell therapy and can open a new era for researchers trying to improve mesenchymal stem cell therapeutic outcomes.

## کلمات کلیدی:

Mesenchymal Stem Cells, Adipose tissue, Liver cirrhosis, Healing, Rat

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