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Adipose derived mesenchymal stem cells preconditioned with hepatic growth factor efficiently ameliorate liver fibrosis

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This study aimed at evaluating the therapeutic role of bone marrow derived mesenchymal stem cells (BM-MSCs) in management of liver fibrosis in rats. The MSCs were harvested from bone marrow of male albino rats. The isolated BM-MSCs proved their MSCs identity via their morphological appearance, multilineage potential and positive expression for CD29, CD44 as well as CD106 and negative expression for CD14, CD34 and CD45. Forty adult female albino rats were used in the present study and classified as follows: group (1) negative control, group (2) positive control (TAA), group (3) TAA+DMEM and group (4) TAA+ BM-MSCs. Circulating values of AST, ALT, ammonia, albumin, fibronectin and fibrinogen were estimated. Hepatic TGF- β and HGF contents were determined. Histological investigation of liver tissue was carried out. The engraftment of PKH-stained undifferentiated BM-MSCs in the liver of TAA group confirms the homing of BM-MSCs to the injured liver. Treatment with BM-MSCs resulted in significant improvement in liver functions associated with significant reduction in serum fibronectin level. Moreover, hepatic TGF- β was significantly downregulated and HGF was remarkably upregulated in BM-MSCs treated group. Histological examination of liver tissue documented the biochemical results. In conclusion, the present results spotlight on the good influence of BM-MSCs in the treatment of experimental liver fibrosis and pave the way for the therapeutic application of BM-MSCs against human liver fibrosis.

Biography

Neveen A Salema she has completed PhD from Faculty of pharmacy Cairo University and Postdoctoral studies from National Research Centre. She is now a researcher in National Research Centre. She has published more than 24 papers in reputed journals and she is principle investigator of a project about the therapeutic effect of mesenchymal stem cell derived from bone marrow and adipose tissue on liver fibrosis.

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