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Biochemical and histological study on effect of bone marrow derived cells in treatment of cardiomyopathy in adult diabetic albino rat

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Diabetic cardiomyopathy (DCM) is a clinical condition, diagnosed when ventricular dysfunction develops in patients with diabetes mellitus (DM) in the absence of coronary artery disease, valvular heart disease or hypertension. 75% of patients with unexplained idiopathic dilated cardiomyopathy were found to be diabetic. Stem cells are capable of self-renewal through replication and differentiation into specific lineages aiding in tissue repair, they have a unique capacity to produce unaltered daughter cells (self-renewal) and to generate specialized cell type (potency). Chronic hyperglycemia is responsible for myocardial remodeling and is a central feature in the progression of DCM, which is characterized by hypertrophy and apoptosis of cardiomyocytes. Microcirculatory defects, necrosis and interstitial fibrosis are the main pathological characteristics of DCM. MSCs can induce myogenesis and angiogenesis either by releasing different angiogenic, mitogenic and antiapoptotic factors or by differentiating into cardiomyocytes. The aim of the current study is to evaluate the beneficial effect of transplantation of isolated, expanded and cultured bone marrow-derived cells from rat as treatment of experimentally induced diabetic cardiomyopathy in other adult albino rat.

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Associated inosine triphosphate pyrophosphatase gene polymorphisms and interferon/ribavirin-induced anemia in Egyptian HCV patients

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Background: It has been found that ITPase deficiency is caused by *ITPA* gene polymorphisms. It was observed that *ITPA* polymorphisms have impact on hematological changes, including hemoglobin (Hb)-decline and platelet decline during treatment of chronic hepatitis C (CHC) patients with pegylated-interferon (PEG-IFN) plus ribavirin (RBV).

Aim: Aim of this study is to evaluate the association of inosine triphosphate pyrophosphatase (*ITPA*) gene polymorphism rs1127354 and rs7270101 with the development of anemia in chronic hepatitis C (CHC) Egyptian patients during treatment with pegylated-interferon (PEG-IFN) plus ribavirin (RBV).

Methods: The current study included 100 selected Egyptian CHC patients treated with PEG-IFN/RBV, 55 patients developed anemia (Hb decline>2 g\dl) and other 45 would not develop anemia (Hb decline≤2 g\dl) at week 12 throughout the treatment course. Routine laboratory investigations were done for all participants (HCV-Abs, HBs Ag, HCV-RNA levels, complete blood picture, Liver and kidney function tests, AFP and TSH).Single nucleotide polymorphism (SNP) was done using real time PCR, ABI TaqMan allelic discrimination kit for *ITPA* polymorphisms (rs1127354 and rs7270101).

Results: CC and AA were the most prevalent genotypes of SNPs rs1127354 and rs7270101 respectively among two studied groups. In univariate analysis, we found that rs1127354 polymorphism was associated with Hb-decline at week 12 of treatment; this demonstrated the protective benefit of the minor allele A of rs1127354 against RBV-induced anemia at the week 12 of therapy. Ge¬notyping of ITPA rs1127354 and rs7270101 polymorphism would be ben¬eficial for predicting platelet decline during treatment. Patients with CC rs1127354 and AA rs7270101 were found to have a lower level of platelet decline.

Conclusion: It is concluded that minor allele A of rs1127354 plays a crucial role in protection against RBV-induced anemia. Genotyping of *ITPA* rs1127354 and rs7270101 polymorphism would be beneficial for predicting platelet decline during treatment with PEG-IFN plus RBV in Egyptian patients with chronic hepatitis C.

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