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ABSTRACT BOOK

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adiponectin changed in patients with diabetes mellitus. Crocin is the chemical constituent isolated from the Saffron and is found to be effective as anti-oxidant, attenuated hyperglycemia and improves the insulin resistance in rats. The objective of this study was to evaluate adiponectin level in rats with Diabetes mellitus type I (T1DM) and study of the effects of crocin administration on this adipokine. **Methods:** In this study, 120 male rats were divided into 2 major day20 and Day40 groups. Each major group was the divided into ten groups (6 rats in each group) as follow: Group1 received normal saline, groups 2, 3, 4 and 5 treated with crocin at doses of 12.5, 25, 50 mg/kg and insulin 5 iu/kg respectively. Group 6 administered with STZ before normal saline, groups 7, 8, 9 and 10 treated with crocin at doses of 12.5, 25, 50 mg/kg and insulin 5 iu/kg after STZ respectively. Normal saline and crocin were i.p. injected five days a week from 3rd day after i.p. injection of citrate buffer and STZ and lasted to the end days of the experiments. Diabetes was induced by STZ (50mg/kg). At the end days of the experiments (days 20 and 40), the animals were anaesthetized and blood samples were collected from the heart and glucose, insulin and adiponectin were determined. **Results:** In rats with T1DM insulin was significantly decreased ($p < 0.05$) whereas glucose and diponectin levels significantly increased ($p < 0.05$). Administration of crocin reduced adiponectin concentration in dose dependent manner. There was significant negative correlation between serum adiponectin and insulin concentration ($r = -0.53$, $P < 0.01$). **Conclusion:** Adiponectin has been shown to have insulin-sensitizing properties and increases as a compensatory response in T1DM due to microvascular complications. Administration of crocin decreased adiponectin concentration in serum probably due to anti-hyperglycemic and antioxidant properties. It was demonstrated that increased generations of free radicals due to oxidative stress develop renal failure that may lead to the stimulation of adiponectin production as a physiological response to restrict endothelial damage. It may also decrease adiponectin clearance, and the kidney may develop secondary resistance to adiponectin.

Keywords: Diabetes mellitus type I, Adiponectin, Crocin, Insulin, Rat

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Study of verapamil effect on MMP-9 activity in U937 and THP-1 cell lines in vitro
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Background: Gelatinases are a big group of proteolytic enzymes belong to matrix metalloproteinases (MMPs). MMPs are a wide cluster of peptidases, which proteolyses the extracellular matrix and have important role in inflammation. Verapamil is a calcium channel blocker extensively used in therapy of numerous cardiovascular diseases such as arrhythmia and hypertension. In this study, the effect of verapamil on gelatinases activity in U937 and THP-1 cell lines has been assessed in vitro. **Methods:** In this experimental study the cells were cultured in complete RPMI-1640 medium and after that incubated with different concentrations of verapamil (0.001-1000 µg/ml) in the presence or absence of PHA (10 µg/ml) for 24, 48 and 72 hours. The MMP-9 activity in cell-conditioned media was then evaluated by gelatin zymography. Statistical comparisons between groups were made by analysis of variance (ANOVA). **Results:** Verapamil significantly decreased the MMP-9 activity in U937 and THP-1 cells in a dose-dependent manner (1000, 100 and 10 µg/ml) compared with untreated control cells. **Conclusion:** Verapamil shows inhibitory effect on MMP-9 activity in monocytoid (U937 and