

The Antioxidant Effect of Vitamin C against Oxidative Stress Generate by Dietary Zn-Deficiency in Diabetic Rats

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Abstract : This study was carried out to investigate the antioxidant effect of vitamin C on oxidative stress induced by dietary Zn-deficiency in albino diabetic rats. Thirty two males alloxan-diabetic rats divided into two groups of 16 individuals each; the first group was fed a zinc adequate diet (54 mg zinc/kg). The second group had given low zinc diet (1 mg zinc/kg). Then, half of each group was treated with vitamin C (1 g/l) in drinking water. After four weeks, animals were sacrificed and different parameters were determined. The findings showed that dietary deficiency zinc intake significantly increased serum glucose. Zn-deficiency was also led to an increase in oxidative stress, which was indicated by an increase of MDA level and glutathione-S-transferase activity. Meanwhile it was result in a decrease of reduced glutathione (GSH) content, glutathione peroxidase GSH-Px and catalase activities in liver. However, the administration of vitamin C restored all the previous parameters approximately to their normal values. In conclusion, vitamin C probably played a key role strong as antioxidant factor against oxidative stress provoked by dietary zinc inadequate. Therefore, it might be contributed in reduction diabetes complications.

Keywords : vitamin C, oxidative stress, zinc, experimental diabetes, rats

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