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تأثير الشيخوخة ومرض السكري علي نشاط الانزيمات المضادة لاكسدة عضلة القلب في الجرذ

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Abstract : Antioxidative enzymes may play an important role in determining individual risk of developing certain diseases, such as atherosclerosis, diabetes, and others. Impaired antioxidant defence is implicated in the development of cardiovascular complications in non-insulin dependent diabetes mellitus (NIDDM) patients. However, as many of these patients are elderly, observed changes in antioxidant status may be due to their ages rather than the disease. In this study; the activities of superoxide dismutase, glutathione peroxidase, and the content of reduced glutathione were determined in erythrocytes. The products of lipid peroxidation were determined in the heart tissues of streptozotocin-induced diabetic rats and in healthy rats at 4, 8, and 13-months of age. The above mentioned antioxidant systems of erythrocytes were also determined after supplementation of diabetic and healthy rats with coenzyme Q-1 O. In erythrocytes of streptozotocin-induced diabetic rats and normal rats 13 months old; the activities of glutathione peroxidase and the levels of reduced glutathione were significantly lower than non-diabetic and younger rats, whereas the activities of superoxide dismutase and lipid peroxidation end products were significantly higher than in controls. The supplementation with coenzyme Q-1 0 to diabetic rats resulted in an increase of erythrocyte glutathione peroxidase activity and the levels of reduced glutathione. However the activity of superoxide dismutase and levels of lipid peroxidation end products, and triacylglycerol were lower in diabetic rats with supplementation; than in diabetic rats without supplementation with coenzyme