Effect of Experimentally Induced Diabetes Mellitus on the Liver of Adult Male Albino Rat and the Possible Protective Role of Antioxidants: Light and Electron Microscopic Study

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Abstract

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Streptozotocin (STZ) is an alkylating agent that has been used widely to induce diabetes mellitus in animals by damage of ß-cell of pancreas. It also impaires the anti-oxidative defense system and increases free radical formation which contributes to the development of oxidative stress in diabetes. This study was carried out to investigate the morphological, biochemical and ultrastructural alterations of streptozotocin induced diabetes mellitus in the liver of adult male albino rat and the possible protective role of each of vitamins E and C separately and their combination against these alterations. The pathological impact of induced diabetes mellitus on the liver of rats was mainly in the form of disruption of the architecture, congestion of veins and sinusoids and degenerative changes in the hepatocytes. These adverse effects were alleviated when vitamins E & C were given in combination but the hepatoprotective role was only partial when vitamin E and vitamin C administrated separately.

Key words:

(Streptozotocin – Vitamin E – Vitamin C – Diabetes Mellitus- Hepatocytes)