

Soyabean ameliorates histological and immunohistochemical changes in pancreatic β -cells and renal corpuscles of alloxan-induced diabetic rats

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Diabetes is a complex metabolic disorder producing functional impairment in multiple organs systems. The pancreas and kidney exhibited numerous morphological and functional changes in alloxan -induced diabetes. The soyabean is a species of legume, possesses multiple pharmacological activities. This study was carried out to clarify the role of soyabean on histological and immunohistochemical changes in pancreatic β -cells and renal corpuscles of alloxan-induced diabetic rats. For this study, fifty adult male albino rats were divided into 3 groups: control group, diabetic group and the third group was concomitantly subjected to both induction of diabetes and soyabean treatment. After four weeks, all animals were sacrificed and specimens from pancreas and kidney cells were investigated using light, transmission electron microscopy, and immunohistochemical staining of pancreatic β -cells by anti-insulin antibody. In hematoxylin & eosin stain (H&E) stained, pancreatic β -cells appeared with vacuolated cytoplasm and pyknotic nuclei & most of the granules were lost. Ultrastructurally, these cells appeared with vacuolated mitochondria and dilated of rough endoplasmic reticulum. Insulin immunoreactivity was apparently reduced by about 53% in the diabetic group. Transmission electron microscope for renal corpuscles revealed a spectrum of damage that included basement membrane thickening, disruption of tubular basal folding and their related mitochondria and fibrosis of tubules. In conclusion: Soyabean administration ameliorates the observed histological changes in pancreatic β -cells and renal corpuscles in diabetic rats.

Biography

Eman Ali Mahmoud Elkordy is one of the academic staff in the School of Medicine. Eman has completed her Ph.D. in Histology, Tanta University, School of Medicine, Egypt. Now, she is the Vice-dean of Applied Medical Science College at Shaqra, Shaqra University, KSA. She has publications in reputed journals.

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