

عنوان مقاله:

Metformin Ameliorates Oxidative Stress Induced by Diabetes Mellitus and Hepatocellular Carcinoma in Rats

محل انتشار:

مجله گزارش های بیوشیمی و زیست شناسی مولکولی، دوره 9، شماره 1 (سال: 1399)

تعداد صفحات اصل مقاله: 14

نویسندگان:

Maysa Ahmed Mobasher - *Department of Pathology, Biochemistry Division, College of Medicine, Jouf University, Sakaka, Saudi Arabia. & Department of Clinical Pathology, El Ahrar Educational Hospital, Ministry of Health, Zagazig, Egypt.*

Hala Galal El-Tantawi - *Zoology Department, Faculty of Science, Ain Shams University, Cairo, Egypt*

Karim Samy El-Said - *Chemistry Department, Biochemistry Division, Faculty of Science, Tanta University, Egypt.*

۳۱۵۲۷

خلاصه مقاله:

Background: Several studies have found an association between Diabetes mellitus (DM) and an increased risk for hepatocellular carcinoma (HCC). Evidence suggests that Metformin (Met) may have a therapeutic and protective effect against both DM and HCC. Therefore, the aim of this study was to evaluate the antioxidant effect of Met against DM and HCC-induced oxidative stress in rat model. Methods: Forty-two male albino rats were randomly divided into six groups. Group 1 (Gp1) was the control group, Gp2 received an intraperitoneal (i.p.) injection with streptozotocin (STZ), Gp3 was injected i.p. with diethyl nitrosamine (DEN), Gp4 received an oral administration of Met, Gp5 and Gp6 received the same injections as Gp2 and Gp3, respectively, then received an additional injection of Met. Oxidative stress biomarkers, including superoxide dismutase (SOD), catalase (CAT), reduced glutathione (GSH) and malondialdehyde (MDA), were examined. Furthermore, biochemical parameters including liver function tests were assessed. Histopathological and immunohistochemical alterations of the liver were also examined. Results: Our results demonstrate that Gp2 and Gp3 had significant signs of liver dysfunction and had elevated levels of MDA and reduced levels of SOD, CAT, and GSH. Additionally, Gp2 and Gp3 showed significant alterations in the liver architecture shown by high PCNA and caspase-3 expression. In the Gp5 and Gp6, treatment with Met showed an improvement in liver function, oxidative stress biomarkers, and reduced histopathological changes in hepatocytes. Conclusions: This study offers insight into the potential for Metformin as a novel therapeutic against the oxidative stress induced by DM or HCC.

کلمات کلیدی:

.Diabetes Mellitus, Diethyl nitrosamine, Hepatocellular Carcinoma, Metformin, Streptozotocin

لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/1141892>



