

عنوان مقاله:

Effect of Lamium Album on Mitochondrial Oxidative Stress in Diabetic Rats

محل انتشار:

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خلاصه مقاله:

Background: Diabetes mellitus (DM) is characterized by the presence of hyperglycemia. It has been documented that oxidative stress and reactive oxygen species (ROS) production have a key role in the pathogenesis of diabetes and its complications. Neutrophils as a part of immune system produce ROS, neutrophils function might be altered in diabetes. Lamium album is known to have antioxidant, and free radical scavenging actions. The aim of the present study was to evaluate the potential effect of L. album on mitochondrial ROS production from circulating neutrophils in diabetic rats. Materials and Methods: Twenty-one male Wistar rats were randomly divided into three groups: normal control rats receiving daily saline; diabetic control rats receiving daily saline; and diabetic rats treated daily with hydroalcoholic extract of L. album (100 mg/kg) for 28 days. On the 28th day of treatment, whole blood samples were obtained and mitochondrial ROS of neutrophils were measured by dihydrorhodamine (DHR) flow cytometric method. Also, fasting blood sugar (FBS) was measured. Results: Mitochondrial ROS didn't show any significant differences among diabetic rats treated with L. album extract, diabetic control rats, and normal control rats ($P=0.8$). Serum glucose in diabetic control was significantly higher than normal control rats ($P=0.0001$). However, L. album caused a remarkable decrease in serum glucose of diabetic rats ($P=0.03$). Conclusion: According to the present findings, it seems that L. album at a dose of 100 mg/kg could not decrease mitochondrial ROS production from neutrophils in diabetic rats. Further studies considering higher concentrations of L. album are appreciated to evaluate its impact on the production of mitochondrial ROS along with extracellular ROS in diabetes condition.

کلمات کلیدی:

Diabetes mellitus (DM), Lamium album, reactive oxygen species (ROS), Dihydrorhodamine (DHR) test

