

عنوان مقاله:

Effect of Total Suspended Particulate Matter in the Air on Inflammation Factors and Apoptotic Markers in Diabetic Rats: The Protective Effect of Insulin and Crocin

محل انتشار:

مجله گزارش های بیوشیمی و زیست شناسی مولکولی، دوره 10، شماره 2 (سال: 1400)

تعداد صفحات اصل مقاله: 12

نویسندگان:

.Asma Mohammadi - *Abadan Faculty of Medical Sciences, Abadan, Iran*

.Ali Reza Balizadeh Karami - *Student Research Committee Abadan Faculty of Medical Sciences, Abadan, Iran*

seyyed Ali Mard - *Physiology Research Center, Department of Physiology, Faculty of Medicine, Ahvaz Jundishapur University of Medical Sciences, Ahvaz, Iran*

Gholamreza Goudarzi - *Air Pollution and Respiratory Diseases Research Center, Ahvaz Jundishapur University of Medical Sciences, Ahvaz, Iran*

.Heidar Maleki - *Faculty of Water Sciences Engineering, Shahid Chamran University of Ahvaz, Ahvaz, Iran*

.Narges Chamkouri - *Abadan Faculty of Medical Sciences, Abadan, Iran*

.Sara Mobarak - *Abadan Faculty of Medical Sciences, Abadan, Iran*

.Esmat Radmanesh - *Abadan Faculty of Medical Sciences, Abadan, Iran*

خلاصه مقاله:

Background: The effect of total suspended particulate matter (TSP) was investigated on the expression of inflammatory and apoptotic factors in diabetic rats, and the effect of crocin and insulin was examined on these factors. Methods: Fifty-four adult male wistar rats were divided into nine experimental groups: control group, crocin group (received crocin, 50 mg/kg), diabetic group (received a single dose of alloxan at 120 mg/kg, IP), TSP group (5 mg/kg TSP instilled intratracheally), diabetic-crocin group (received crocin at 50 mg/kg after the induction of diabetes by alloxan (120 mg/kg)), diabetic-insulin group (received regular insulin (5 U/kg), crocin-TSP group (received crocin at 50 mg/kg, IP, and then 5 mg/kg TSP was instilled intratracheally), diabetic-TSP-insulin group (after receiving alloxan (120 mg/kg) and instilling TSP (5 mg/kg, intratracheally), a single dose (5 U/kg) of regular insulin), and diabetic-TSP-crocin group (after receiving alloxan (120 mg/kg) and instilling TSP (5 mg/kg, intratracheally), a single dose of crocin (50 mg/kg, IP)). Quantitative real-time PCR was performed to measure the expression of the mRNAs of apoptotic (Bax and Bcl2) and inflammatory mediators (TNF α , COX2, iNOS/eNOS) in Wistar rats. Results: In diabetic and TSP groups the inflammatory factors and BAX/Bcl2 ratio significantly increased compared to the control group. In diabetic-TSP-insulin and diabetic-TSP-crocin, a significant decrease was observed in the rate of inflammatory factors and BAX/Bcl2 ratio. Conclusions: The results suggested that diabetes and exposure to TSP increase the rate of apoptosis and inflammation, and also demonstrated the anti-apoptotic and anti-inflammation role of insulin and

کلمات کلیدی:

Apoptosis, Crocin, Diabetes, Inflammation, Insulin, TSP

لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/1262978>

