عنوان مقاله:

Comparison of the effects of hydroalcoholic extract of Capparis spinosa fruit, quercetin and vitamin E on monosodium glutamate-induced toxicity in rats

محل انتشار:

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خلاصه مقاله:

Capparis spinosa L. has many biological effects such as antioxidant properties. In the present study, we compared the effects of the hydro-alcoholic extract of Capparis spinosa fruit, quercetin (Q), and vitamin E (Vit E) on monosodium glutamate (MSG)-induced toxicity. The following groups were designed: Control groups (normal saline and/or corn oil); MSG group (۴.۰۰ g kg-۱ MSG); MSG + low dose extract group (۴.۰۰ g kg-۱ MSG with ۱۰۰.۰۰ mg kg-۱ extract); MSG + high dose extract (HDE) group (۴.۰۰ g kg-۱ MSG with ۳۰۰.۰۰ mg kg-۱ extract); MSG + Q group (۴.۰۰ g kg-۱ MSG with ۱۰.۰۰ mg kg-۱ Q); MSG + Vit E group (۴.۰۰ g kg-۱ MSG with ۲۰۰.۰۰ mg kg-۱ Vit E). All chemicals were orally administered for ۱۴ consecutive days. Tissue specimens from the heart, kidney, and liver tissues and blood samples were collected for histopathological and biochemical evaluations. The results showed that the MSG-induced tissue edema, congestion, and inflammatory cell infiltration were resolved by HDE, Q, and Vit E treatments. These chemicals also restored tissue malondialdehyde level and superoxide dismutase activity. Besides, alterations induced by MSG in serum levels of aspartate transaminase, alanine aminotransferase, urea, lactate dehydrogenase, and creatine kinase-MB were also resolved. It is concluded that Capparis spinosa fruit extract, Q and Vit E can produce approximately similar protective effects on tissue function through oxidative stress alleviation and antioxidant mechanisms restoration.

کلمات کلیدی:

Capparis spinosa, Monosodium glutamate, Quercetin, Toxicity, Vitamin E