عنوان مقاله:

Crocin has anti-inflammatory and protective effects in ischemia-reperfusion induced renal injuries

محل انتشار:

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خلاصه مقاله:

Objective(s): Crocus sativus (saffron) has been widely used in traditional medicine. It has also been found to possess many beneficial properties in modern medicine. The most important ingredients of saffron are crocin, crocetin, safranal, and picrocrocin. This study evaluated the protective effects of crocin against the inflammation, oxidative stress, and functional disturbances of the kidney induced by renal ischemia/reperfusion (I/R). Materials and Methods: Different doses of crocin (۰, ۱۰۰, ۲۰۰, and ۴۰۰ mg/kg) were administered intraperitoneally ۳۰ min before I/R. The rats of the sham group were also injected with normal saline before the sham surgery. For induction of I/R, both renal artery and vein clamped for ۳۰ min, bilaterally. The I/R-induced renal injuries were assessed by measuring leukocyte infiltration, intercellular adhesion molecule-۱ (ICAM-۱) and tumor necrosis factor-alpha (TNF-α) mRNA expression levels, malondialdehyde (MDA) and ferric reducing/antioxidant power (FRAP) levels in the kidney tissue, and plasma creatinine and urea-nitrogen concentrations. Results: Except for the tissue level of FRAP which decreased, all other measured parameters increased following I/R induction. Pretreatment with all doses of crocin significantly reduced the severity of these disturbances (PP<۰.۰۰۱). In fact, while there was no significant differences between MDA and FRAP levels, plasma creatinine and urea-nitrogen concentrations of the crocin-treated animals and the sham group, crocin administration reduced leukocyte infiltration and ICAM-۱ and TNF-α mRNA expression levels in a dose-dependent manner. Conclusion: The present study clearly demonstrated the anti-inflammatory, antioxidant, and protective effects of crocin, a main constituent of saffron, against renal damages resulted from I/R in rats.v

کلمات کلیدی:

Crocin, Inflammation, Ischemia/reperfusion Leukocyte infiltration, TNF-α, ICAM-۱