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تأثير الأنزيم المحمول للأنجيوتنسين على تسمم الجرذان الناتج من عقار الدوكساروبيسين

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Abstract : The common use of doxorubicin (DOX) in various malignancies is hindered by its cardiac toxicity, which remains a major problem since its introduction in clinical use. The purpose of this study was to investigate the possible protective effect of captopril (Cap), an angiotensin-converting enzyme inhibitor with an antioxidant property, against DOX-induced cardiotoxicity. In this study male Wister rats were categorized into four groups as follows. Group (1) were served as a control and injected (I.P) with normal saline. Group (2) were injected (I.P) with DOX at a dose of 4.5 mg kg-1 two times weekly for two successive weeks in a total cumulative dose of 18 mg Kg-1. Group (3) were treated orally two times a week for two weeks with Cap at a dose of 60 mg Kg-1. Group (4) were treated with DOX as in group (2) one hour after Cap treatment as in group (3). Forty eight hours after the last dose, rats were scarified, blood was collected, heart was removed and were stored for biochemical analysis. Results of the present study showed that DOX produced a significant decrease in total body weight and absolute heart weight. DOX also decreased significantly plasma activities of CK, CK-MB and LDH. While it produced a significant increase in serum NO level, cardiac MDA level and catalase activity. This was accompanied by a significant reduction in cardiac GSH level and GSH peroxidase activity without significant change in GSSG level and serum SH group. Cap alone produced significant reduction in LDH activity, GSH level and GSH peroxidase activity. The administration of Cap one hour before DOX treatment attenuated the reduction in CK-MB and showed insignificant change in the activities of LDH and CK compared with DOX-treated group. The combination group showed significant decrease in cardiac MDA level but without significant change in the level of NO, GSH, GSSG and an antioxidant enzymes activities in comparison with DOX-treated group. In conclusion, Cap had limited protective effects on cardiotoxicity produced by DOX through inhibition of lipid peroxidation.

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