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Dietary dates (*Phoenix dactylofera*) reduces cardiac toxicity induced by Doxorubicin as anticancer agent

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Doxorubicin is a commonly used anticancer agent which may cause cardiac toxicity. *Phoenix dactylofera* (dates) was evaluated whether it reduces cardiac toxicity induced by doxorubicin in Wistar albino rats or not. The rats were divided into five groups (n=6). Group-1: Control; group-2: Disease control; Groups 3, 4 & 5: Therapeutic groups (*Phoenix dactylofera* 5%, 10% and 15% respectively). Cardiac toxicity was induced by administration of doxorubicin (1.25 mg/kg IP in 16 divided doses per month). Effect of dates on cardiac toxicity was evaluated by measuring: Troponin T, creatnin phosphokinase (CPK), creatnin phosphokinase-MB (CPK-MB), Lactate dehydrogenase (LDH), serum glutamate oxaloacetate transaminase (SGOT), serum glutamate pyruvate transaminase (SGPT), calcium ion Ca2+, sodium ion Na+, potassium ion K+, intracellular enzymes like Malondialdehyde (MDA), glutathione (GSH), superoxide dismutase (SOD) and catalase (CAT). The disease control group showed significantly elevated ($p<0.001$) levels of tropotnin T, CPK, CPK-MB, LDH, MDA and significantly reduced levels ($p<0.001$) of GSH, SOD & CAT; while the levels of SGPT, SGOT were increased less significantly ($p<0.01$) as compared to therapeutic groups. Administration with dates significantly ($p<0.01$) reduced the increased levels of Troponin T, CPK, CPK-MB, LDH, SGOT, SGPT, MDA, GSH, SOD & CAT as well as restored Ca2+, Na+, K+ levels to normal values. Further, histological examination of the rats' cardiac tissues demonstrated that the normal architecture of the cardiac cells was restored in the animals fed with dietary dates compared to disease control. Findings suggest that the administration of dates prevented the toxicity induced by doxorubicin in the rats.

Biography

Ashraf N Abdalla has completed his PhD from the University of Nottingham, UK (2012) and Postdoctoral studies in Cancer Research UK (CRUK-Nottingham). He is currently working as Assistant Professor of Pharmacology in the College of Pharmacy; Umm Alqura University, Saudi Arabia. He is also a Principal and Co-Invistigator in different funded projects in Saudi Arabia and UK. He is interested in cancer drug discovery from natural products and synthetics and targeted theraputics including tyrosine kinase inhibitors. He has number of publication in drug discovery and a patent for a natural product as wound healing agent.

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