

Effect of vitamin d supplementation on doxorubicin-induced cardiotoxicity in rats

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Abstract

Background: Doxorubicin, a chemotherapeutic agent, has been widely used in the treatment of solid tumors, bone sarcomas, and cancers of the breast, ovary, and other tumors. Unfortunately, the clinical use of this valuable anticancer drug is limited due to its life-threatening cardiotoxic effect¹. Vitamin D is recently known for its cardioprotective effects².

The aim of this study: To investigate role of vitamin D on the doxorubicin-induced cardiac dysfunction.

Materials and Methods: 70 female Albino-rats were divided into 4 groups: control group (C); doxorubicin-treated group (Dox): given i.p. injection of 2.5 mg/kg twice per week (cumulative dose:15 mg/kg) over 3 weeks; vitamin D-supplemented group (Vit D): given vitamin D by oral gavage in a dose of 500 IU/kg daily, 5 days a week, also for 3 weeks; and combined Doxorubicin-treated+vitamin Dsupplemented group (Dox+Vit D): rats received the same used doses for the same duration. After 3 weeks, all rats were subjected to EGG recording, determination of plasma levels of brain natriuretic peptide (BNP), cardiac troponin I (cTnI), vitamin D concentration (vit D) and total calcium level (Ca). Hearts were excised and perfused in Langendorff preparation to record intrinsic in vitro activity of the heart under basal conditions according to the technique of Langendorff. Malondialdehyde (MDA), total antioxidant capacity (TAC) and heat shock protein 20 (HSP 20) were assessed in the cardiac tissue. Also, cardiac tissue histopathological studies were performed.

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Biography

Faten Mahmoud Ali Diab interested in cardiovascular physiology research, especially, in performance of the isolated hearts. He is greatly interested in attending the physiology conferences and physiology workshops. The first international conference he attended was the IUPS 2013 in Birmingham, UK. Next one was SONA 2015 in Durban, South Africa. The next step was to the FAOPS 2015 in Bangkok, Thailand. By the end of 2016, he shared the Aups in Adelaide, Australia. he continue his physiology life trip to Brazil, Rio de Janeiro in 2017, to attend the IUPS and the

teaching workshop for Medical education that was held in Buzios. Next step was to London again to join Euro-physiology 2018. In Africa, to Rwanda with African Association of Physiological sciences (AAPS) to attend the 4th education workshop that held Rwanda, 2 – 4 December 2018. A far step to Japan, to share in the 9th FAOPS congress, Mach 28-31, 2019, in Kobe, Japan he is full member in American Physiological society (APS) and Physiological society in England. My journey started from Egypt and his current step is his work in UAE. Life events are more beautiful & exciting than virtual ones but as usual everything in life is changeable.