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OP 09 - Effect of *Murraya koenigii* Leaf Extract on Antioxidant Status, Lipid Peroxidation and Myeloperoxidase Activity in Wistar Rats Treated with Doxorubicin

Sandamali J.A.N.[a#], Hewawasam R.P.[b], Jayatilaka K.A.P.W.[b]

[a]*Department of Medical Laboratory Science, Faculty of Allied Health Sciences, University of Ruhuna, Galle*
[b]*Department of Biochemistry, Faculty of Medicine,University of Ruhuna, Galle*

[#]***Corresponding author:*** *jansandamali@ymail.com*

Background: Doxorubicin is one of the most potent and widely used chemotherapeutic agents. However, clinical utility is limited by dose-dependent cardiotoxicity, which leads to severe heart failure. Previous studies favour reactive oxygen species as one of the main factors responsible for doxorubicin-induced cardiotoxicity and administration of antioxidants has been shown to protect cardiac tissues. *Murraya koenigii* leaves are rich in various phytochemicals and have strong antioxidant potential.

Objectives: To investigate the effect of aqueous extract of *Murraya* leaf on antioxidant status, lipid peroxidation and myeloperoxidase activity in Wistar rats treated with doxorubicin.

Methodology: Wistar rats were divided into five groups of 10 animals in each. Group 1 served as the normal control. Group 2, plant extract control received 2.0 g/kg lyophilized plant extract for 14 days and 10 mL/kg saline on 11th day. Group 3 received 2.0 g/kg lyophilized plant extract for 14 days and 18 mg/kg doxorubicin on 11th day while group 4 received 10 mL/kg distilled water for 14 days, 18 mg/kg doxorubicin on 11th day. Group 5 which served as the positive control was given 10 mL/kg dH_2O for 14 days, 180 mg/kg dexrazoxane 0.5 hr prior to administration of doxorubicin (18 mg/kg). Animals were sacrificed on the 15th day. A portion of heart tissues was collected for the estimation of antioxidant parameters.

Results and conclusions: A significant reduction in reduced glutathione, glutathione reductase, glutathione peroxidase, total antioxidant capacity, superoxide dismutase and catalase activity and a significant increase in lipid peroxidation and myeloperoxidase activity was observed in doxorubicin control compared to the normal control group ($p<0.05$). Plant extract treated group showed a significant decrease in lipid peroxidation, myeloperoxidase activity and significant increase in rest of the parameters compared to the doxorubicin control ($p<0.05$). It can be concluded that *Murraya* leaf extract has the potential to ameliorate doxorubicin induced oxidative stress and inflammation in Wistar rats.

***Keywords*:** Doxorubicin, *Murraya koenigii* leaf extract, oxidative stress, Wistar rats