

Immunohistochemical Evaluation of Moringa oleifera Seed Oil in Cadmium Induced Frontal Cortex Damage in Wistar Rats

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Abstract : The use of Moringa oleifera seed oil in the prevention and cure of many ailments particularly, neurodegenerative diseases have been on increasing trend in Nigeria. The study was aimed at investigating the ameliorative or reversal effects by the intervention of Moringa oleifera seed oil on the damage to frontal cortex of Wistar rats by cadmium. Twenty-eight Wistar rats of both sexes weighed between 73g-151g were used. The animals were acclimatized and were fed on rat chow and water ad libitum. The rats were randomly divided into four groups A, B, C and D of 7 rats each. Group A served as control which received 2.5mg/kgbw phosphate buffer intra-peritoneally, while group D served as Moringa-treated control and received oral administration of 2.0 mg/kgbw Moringa oleifera oil. Groups B and C were injected intra-peritoneally with 3.5mg/kgbw CdSO₄.8H₂O single dose. Group C received orally administration of 2.0mg/kgbw Moringa oleifera oil. The intervention lasted for four weeks after which the animals were sacrificed by cervical dislocation and the tissues processed histologically. The immuno-histoarchitecture of the frontal cortex was characterized by pyknosis of nuclei as well as activation of astrocytes which was evidence in group B rats, while those animals in group C showed ameliorative effect that were evidence in reduction in the number of pyknotic nuclei and reduction of activated astrocytes as compared with control group A and Moringa-treated group D. It can be deduced that Moringa oleifera seed oil has natural antioxidant constituents that might have ameliorated the immuno-histoarchitectural damage caused by cadmium.

Keywords : cadmium, immuno-histoarchitecture, Moringa oleifera, pyknotic nuclei

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