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# Cardioprotective Effect of the Leaf Extract of Andrographis Paniculata in Isoproterenol-Induced Myocardial Infarction

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**Abstract :** Background: The use of medicinal plants in the treatment of chronic diseases especially myocardial infarction, is gaining wide acceptance globally. Andrographis paniculata (Acanthaceae) is a medicinal plant commonly known as the king of bitters in Nigeria and has been acclaimed for several therapeutic activities. Materials and methods: This study investigated the cardio-protective effect of the leaf extract of A. paniculata in isoproterenol-induced myocardial infarction. Fresh green leaves of A paniculata were harvested from the Faculty of Agriculture farmland, Nnamdi Azikiwe University, Awka, Nigeria. Identification and authentication of the plant were carried out at the Department of Botany, Nnamdi Azikiwe University and a voucher specimen was deposited at the herbarium. The plant material was then shredded, air-dried under shade and pulverized. The fine powders obtained were weighed and extraction was done via a solvent combination of water and ethanol (3:7) for 72 hr via maceration. The filtrate gotten was evaporated to dryness to obtain the ethanol extract, which was used for further bioassay study. The bioactive constituents of the plant extract were quantitatively analyzed by Gas chromatography-mass spectrometry (GC-MS). The animals were administered the extract of A. paniculata orally for seven days at a divided dose of 100 mg/kg, 200 mg/kg and 400 mg/kg body weights. On the eighth day, myocardial infarction was induced through subcutaneous administration of isoproterenol at a dose of 150 mg/kg/day diluted in 2 ml of saline on two consecutive days. Subsequently, the blood pressures were monitored and blood was collected for bioassay studies. Results: The results of the study showed that the leaf extract of A. paniculata was rich in Dodecanoic acid (8.261%), 4-Dibenzofuranamine (6.03%), Cyclotrisiloxane (4.679 %). The findings also showed a significant decrease ($p>0.05$) in the Mean arterial blood pressure, heart rate, aspartate transaminase, alanine transaminase, creatinine kinase and lactate dehydrogenase activities of the treatment group compared with the untreated control group while the antioxidant (superoxide dismutase, catalase and glutathione) activities were significantly increased in the treatment group, compared with the untreated control group. Conclusion: The findings of this work have shown that the leaf of A. paniculata was rich in bioactive compounds, which could be synthesized to produce plant-based products to fight cardiovascular diseases, especially myocardial infarction.

**Keywords :** cardiovascular disease, myocardial infarction, medicinal plant, andrographis paniculata, isoproterenol
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