

EFFECT OF DICHLOROACETATE ON FEMALE RATS WITH ADJUVANT ARTHRITIS

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Abstract. The aim of the study was to investigate the prophylactic treatment with 25 mg/kg and 50 mg/kg of dichloroacetate (DCA) on 24 female Wistar rats with adjuvant arthritis (AA). Body weight, joint swelling, blood indices, pro-/antioxidant status, histological changes in joints and liver were investigated. The results indicated a significant suppression of joint swelling. At the end of experiment it was lower by 49.3 % and 39.7 % in the groups respectively treated with 25 mg/kg and 50 mg/kg of DCA. The benefit effect was supported by histological studies showing a marked decrease of infiltration with inflammatory cells, suppression of edema and angiomatosis in periarticular tissues and synovium. The total antioxidant activity (AOA) of blood serum after the treatment significantly increased and was higher by 51.8 % and 55 % by using of 25 mg/kg and 50 mg/kg doses of DCA. Both doses of DCA did not show toxic effects on the liver and improved the histological changes in hepatic tissue induced by AA. Therefore, DCA may be successfully used to suppress the development of AA in female rats.

Keywords: adjuvant arthritis, dichloroacetate, antioxidant activity, rats