

THE EFFECT OF METHYL JASMONATE ON COLON HISTOPATHOLOGICAL ALTERATIONS AND CHANGING PROFILE OF NRF2 AND PCNA IN ACETIC ACID-INDUCED COLITIS IN MALE WISTAR RATS

Tosan P. Omayone, Faizah T. Salami

Department of Physiology, Federal University of Technology Akure, Nigeria.

Correspondence author's email: tpomayone@futa.edu.ng

Objectives: Ulcerative colitis (UC) is a chronic inflammatory condition characterized by intestinal inflammation and mucosal tissue damage. Research interest are directed towards factors that modulate oxidative stress and inflammatory activities during the course of the disease. The aim of this study is to examine the effect of Methyl jasmonate (MJ) a phytohormone which has anti-inflammatory and antioxidant action on acetic acid-induced ulcerative colitis.

Methods: Fifteen male wistar rats (160-200g) were divided into three groups (Control, UC and MJ+UC) of 5 animals each. Administration of MJ (50mg/kg) began three days prior to the colitis induction and continued post-colitis. UC was induced by intrarectal administration of 2ml, 4% acetic acid. Stool consistency, organ weight and length, histology and immunohistochemical expression of nuclear erythroid factor 2 (Nrf2) and proliferating cell nuclear antigen (PCNA) were measured.

Results: Diarrhoea was noticed in the stools of UC which was arrested by day 5 post colitis by MJ, while the UC group still showed watery stools. Significant increase in organ weight, histopathologic score and PCNA accompanied by a decrease in organ length and Nrf2 were noticed in the UC group compared to control. MJ significantly ameliorate these effects caused by UC induction.

Conclusion: The results suggest that MJ may be able to reverse the inflammatory and oxidative effect of acetic acid induced UC due to its anti-inflammatory and antioxidative effects.

Keywords: Methyl jasmonate, Ulcerative colitis, Nrf2, PCNA

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