Prenatal exposure to oral bitter leaf results in protein and DNA loss in the prefrontal cortex in Wistar rats


Department of Anatomy, College of Health Sciences, University of Ilorin, P.M.B 1515 Ilorin, Nigeria

Email of the presenting author: ballonogodie@yahoo.com

Background: Bitter leaf is widely consumed by pregnant women in Africa for the treatment of many diseases during the various phases of pregnancy. But whether this treatment is deleterious to developing prefrontal cortex requires clarification.

AIM: This study investigated some histological effects of prenatal exposure of aqueous bitter leaf extract on the developing prefrontal cortex.

METHODS: Twenty-five pregnant Wistar rats with an average weight of 200g were randomly divided into five groups (n=5). The experimental groups were administered bitter leaf (400mg/kg) on the gestational days 1-7 (group B), 8-14 (group C), 15-21 (group D) and 1-21 (group E) while the control (group A) was given normal saline from gestational days 1-21. After parturition, the litters in each group were weighed and sacrificed by euthanized on postnatal day 35. The brain was weighed and the prefrontal cortices were excised, fixed in formol calcium and processed. Tissue sections were stained with: Feulgen reaction for DNA substances and Cresyl Fast Violet for Nissl substance.

RESULTS: Using CFV, there was partial loss of Nissl substances in the litters exposed to bitter leaf on E8-E14 and E1-21 while there was more DNA loss in the litters exposed to bitter leaf on E8-E14 and E1-21.

CONCLUSION: The above findings suggest that prenatal exposure of young Wistar rats to oral bitter leaf at 400 mg/kg is associated with loss of protein and DNA in the prefrontal cortex.

Keyword: bitter leaf, histological studies

Acknowledgement: to the technical staff of the department and doctor akinola o.b