

EVALUATION OF ALUMINIUM TOXICITY AND THE AMELIORATIVE EFFECT OF SOME SELECTED ANTIOXIDANTS ON FECUNDITY OF MATURED MALE WISTER RATS (RATTUS RATTUS)**Onyegeme-Okerenta, B. M. & Anacleto, F. C.**Department of Biochemistry, Faculty of Science, University of Port Harcourt, Choba
Rivers State, NIGERIA**ABSTRACT**

This present study was carried out to determine the toxic effect of aluminium on the reproductive system of matured male rats and also the capacity of some selected antioxidants like zinc, selenium, ginseng, vitamin A, C and E to ameliorate this toxicity. Forty-eight albino rats were randomly divided into 8 groups of 6 rats each. Group 1 served as the control. Group 2 was treated with 200mg/kg body weight of Aluminium; Group 3 was administered with 200mg/kg of Aluminium + 14.6mg/kg body weight of Zinc (Al+Zn); Group 4 was treated with 200mg of Aluminium + 100mg/kg body weight of Selenium (Al+Se); Group 5 was treated with 200mg/kg of Aluminium + 10mg/kg body weight of Ginseng (Al+Ge); Group 6, 7 & 8 were treated with 200mg of Aluminium and 100mg/kg body weight of Vitamins A, C & E (Al+Vit A, Al+Vit C and Al+Vit E) respectively. This was carried out for six weeks. At the end of the experiment, biochemical assays of some reproductive hormones – Testosterone, follicle stimulating hormone (FSH), luteinizing hormone (LH) and prostate specific antigen (PSA) and histological analysis were carried out. Results showed no detectable effect ($p > 0.05$) on (FSH), LH. However, there was a significant decrease ($p < 0.05$) in the level of testosterone of the aluminium group when compared to the control. In comparison to the aluminium group, the antioxidant groups of Al+Zn, Vit A, C and E showed a higher level of testosterone ($p < 0.05$) than the groups treated with selenium and ginseng. Also, there was a significant increase ($p < 0.05$) in the PSA level of aluminium group when compared with the control. When aluminium group was compared to the antioxidant groups, there was a significant decrease ($p < 0.05$), showing that rats in the Al group have prostatic disease. In addition, histology of the Al group testis showed damaged seminiferous tubules and reduced number of sperm cells. This confirms the negative impact of aluminium on male fertility and also that antioxidants like Al+Zn, Vit A, C and E has more ameliorating effect on this toxicity than Al+Se and Al+Gn .

Keywords: Aluminium, fecundity, hormones, vitamins, antioxidants, amelioration.