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Comparative sex hormonal indices of male and female rats exposed to uppercott (mixture of organophosphate/pyrethroid) pesticide

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The effect of oral administration of a mixture of cypermethrin and dimethoate (organophosphate and pyrethroid groups of pesticide, commonly called uppercott) on serum sex hormonal profile of male and female rats was assessed. 10 mg/kg and 20 mg/kg body weight of uppercott were given to separated male (M) and female (F) rats grouped as F2, M2 and F3, M3 respectively. Rats in groups F1, M1 served as control. After 28 days, the animals were sacrificed; sera collected and assayed for follicle stimulating hormones (FSH), Luteinizing hormones (LH), testosterone, estradiol and progesterone. Results showed that all serum sex hormones, for both male and female rats, were significantly altered as doses increased from control via 10 mg/kg to 20 mg/kg. FSH and LH were significantly reduced ($p < 0.05$) in both male and female rats (M1FSH, M2FSH and M3FSH were 3.36 ± 0.32 mIU/ml, 2.32 ± 0.31 mIU/ml and 1.9 ± 0.15 mIU/ml and F1FSH- 3.32 ± 0.15 , F2FSH- 2.48 ± 0.17 and F3FSH, 1.96 ± 0.13). Estradiol and progesterone in the female rats; and testosterone for male rats decreased significantly ($p < 0.05$). Toxic effects of uppercott on testosterone and progesterone male and female rats respectively, were not significantly different ($p > 0.05$) from each other. Uppercott significantly reduced all sex hormonal levels especially at higher dose. Constant exposure to high concentration of organophosphate and pyrethroid pesticides could have toxic effects on male and female fertility and reduce reproductive integrity. A limit should be placed on the use of such toxic pesticides/insecticides.

Biography

Ekwere, M R is a senior lecturer and a PhD student of Uboh F E. Brownson and Abang are students under the supervision of Uboh, assisted by Ekwere.

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