

ASSESSMENT OF THERAPEUTIC, PROLONGED AND OVERDOSE TREATMENT WITH DIAZEPAM ON LIPID PROFILE AND GONADAL STEROID LEVEL OF MATURED MALE ALBINO RATS

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ABSTRACT

The effect of therapeutic, prolonged and overdose treatment with diazepam on lipid profile and gonadal steroid (Testosterone) level of matured male albino rats was evaluated. A total number of 20 male rats (average weight of 160g) were grouped into four of 5 rats each. Group A received a normal therapeutic dose of 0.012 mg /Kg body weight. Group B received an Overdose of 0.036mg/kg body weight. Group C received a prolonged dose of 0.012mg/kg body weight for 28 days. Group D did not receive any treatment and served as the control group. Groups A and B were treated for two weeks while Group C was treated for four weeks. Blood samples were collected from Groups A and B after two weeks and from groups C and D at the end of week 4. Analysis for cholesterol (CHOL), triglycerides (TRYG), Low-density lipoproteins (LDL-C), high-density lipoproteins (HDL-C) and Testosterone hormone were evaluated. Results obtained showed a significant increase ($p < 0.05$) in plasma CHOL level in groups that received the Prolonged dose ($1.12 \pm 0.13\text{mg/dl}$) and overdose ($1.10 \pm 0.14\text{mg/dl}$) when compared to the control ($0.93 \pm 0.10\text{mg/dl}$). There was a significant reduction ($p > 0.05$) in TRYG for the groups that were administered with normal and prolonged normal doses. The LDL-C levels for the groups administered with overdose ($0.68 \pm 0.13\text{mg/dl}$) and prolonged dose (0.68 ± 0.13) was significantly increased when compared with the control ($0.48 \pm 0.05\text{mg/dl}$). However, there was a significant decrease in the value of HDL-C for the overdose and prolonged dose groups when compared with the control. The results obtained for testosterone showed that there was a significant decrease ($p < 0.05$) in the groups that received overdose ($0.95 \pm 0.10\text{mg/dl}$) and prolonged ($0.83 \pm 0.05\text{mg/dl}$) doses of diazepam respectively when compared to the control group ($1.45 \pm 0.06\text{mg/dl}$). This study has provided evidence of the adverse effects of overdose and prolonged intake of diazepam on lipid profile and testosterone which is reproductive hormone in matured male albino rats.

Keywords: Lipid profile, testosterone, diazepam, therapeutic dose, prolonged dose, overdose.