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Health Implications of Pito and Burukutu in Albino Rats: A Haematological and Liver Function Approach

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Abstract

Introduction: Burukutu and pito are alcoholic beverages produced mainly from grains such as guinea corn and millet. This study investigated the health implications of pito, burukutu-guinea corn and burukutu-millet in male albino rats: a haematological and liver function approach. **Methods:** Three locally brewed beers were purchased from locally brewed beer joint in Wukari, Nigeria. Twenty male albino rats were used and were randomly distributed into four groups of five rats each. Group 1 served as normal control, while groups 2, 3 and 4 were administered pito, burukutu-Guinea corn and burukutu-millet (10 mL/kg bwt) respectively for 21 days before being sacrificed. **Results:** Result showed that ALT and AST activities increased in all the groups administered the different beer compared to the control. Cholesterol increased in group 2, but decrease in group 4. Potassium and glucose reduced in all test groups compared to the normal control. The differences in cholesterol, potassium and glucose levels are statistically less-significant ($p > 0.05$) compared to the control. The liver histoarchitectural state of the test animals administered the beers compared to the control animals showed the beers had toxic effect on the animals. There was evidence of infiltration and distortion of some regions of the liver tissue in the test animals. This agrees with the results of serum biochemical parameters evaluated. The WBC, LYM and GRA increased in group 3 and reduced in groups 2 and 4 compared to the control. The MID reduced in all the test groups compared to the control. RBC, Hb and HCT increased in all the groups compared to the control. The MCV increased only in group 4 and decreased in groups 2 and 3. The MCH, MCHC and RDWc reduced in all the test groups, while PLT, PCT, MPV and PDWc increased in all the test groups compared to the control. **Conclusion:** This study has shown that constant administration of pito, burukutu-guinea corn and burukutu-millet in the test animals for a long duration caused alterations and negative effect on the liver function, but may not interfere negatively with the Hb and RBC count.

Keywords: Beer, burukutu-guinea corn, burukutu-millet, haematological, histology, pito