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**Toxicological Assessment of Selected Popular Antidiabetic Drugs in Diabetics within Ota, Ogun State, Nigeria**

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**Abstract**

The complications associated with diabetes and the new trend of using combination therapy in the management of the disease gave birth to this work, aimed at assessing the hepatotoxic and nephrotoxic effects of selected popularly used antidiabetic medications in type 2 diabetic patients within Ota, Ogun State, Nigeria. The participants, diabetic (n=195) and non-diabetic (n=30) were divided into the following groups based on their medications: 1 (Non Diabetic control), 2 (Metformin), 3 (Glimepiride), 4 (Glibenclamide), 5 (Metformin and Glimepiride), 6 (Meformin and Glibenclamide), 7 (Metformin, Glimepiride and Glibenclamide) and 8 (Diabetic Dietary control). Serum protein expression profiling, liver and kidney function parameters were assessed in participant’s blood. Glyceamic control within the diabetic groups was 29.23%. Urea concentration was significantly increased (p < 0.05) in groups 5 and 7 compared with groups 1 and 8 while the serum creatinine levels in the different groups showed no significant difference. Activities of alkaline phosphatase and aspartate aminotransferase increased significantly (p < 0.05) in group 5 compared with groups 1 and 8. Three low molecular weight proteins likely to be cystatin C, leptin and prophyllin (molecular weights 13, 15 and 18 kDa respectively) were overexpressed in all the diabetic groups. The control of diabetes may best be carried out with dietary control and lifestyle modification as well as good therapeutic drug monitoring for safe assessment of baseline organ function.

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