

Biochemical evaluation of the effects of Nigerian polyherbal preparation on Wistar rabbits

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ABSTRACT

Background: Diabetes mellitus is a metabolic disorder with multiple etiologies. Its sufferers are generally at high risk of dyslipidemia characterized by hypercholesterolemia, hypertriglyceridemia, hyperlipoproteinemia and low levels of high-density lipoprotein cholesterol. Globally, the estimated cost of diabetes care was \$376 billion in 2010, representing 12% of health expenditures for that year.

Methods: The effects of the aqueous extracts of a little known Nigerian traditional polyherbal formula consisting of *Emilia coccinea*, *Acanthus montanus*, *Hibiscus rosasinensis* and *Asystasia gangetica* on serum glucose concentration, amylase activity and lipid profiles of normal, diabetic, and liver-damaged rabbits were studied using standard procedures. The mixture of the aqueous extracts of the four plants was orally administered in two doses – 120mg/kg body weight and 240mg/kg body weight for 28 days.

Results: The drug elicited dose- and duration-of-administration-dependent, significant ($p < 0.05$) reductions in serum levels of glucose, total cholesterol, triacylglycerol and LDL-cholesterol; and significant ($p < 0.05$) increases in the HDL-cholesterol concentrations with no changes in amylase activity.

Conclusion: These results confirm the hypoglycemic, antihyperlipidemic and hepatoprotective potentials of the crude drug and thus justify its application in ethnomedicine in the management of diabetes.

Key words: *Emilia coccinea*, *Acanthus montanus*, *Hibiscus rosasinensis*, *Asystasia gangetica*, antidiabetic, hepatoprotection.