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Hypoglycemic and hypotensive effects of ficus exasperate vahl (Moraceae) leaf aqueous extract in rats

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The hypotensive and hypoglycaemic effects of *Ficus exasperata* (Vahl) (family: Moraceae) leaf aqueous extract (FEE) were investigated in experimental rat models. In this study, spontaneously-hypertensive rats (SHR) (type 1 diabetes), obese Zucker (type 2 diabetes) and Wistar rats were used. Three (A, B and C) groups of rats, each group consisting of 10 rats, were used. Group A Wistar rats received distilled water in quantities equivalent to the volume of streptozotocin (STZ) and FEE administered intraperitoneally to treated rats. Diabetes mellitus was induced in the SHR group B rats by multiple low-dose (MLD) intraperitoneal injections of STZ (40 mg/kg body weight) to induce type 1 diabetes. The animals in group C were the obese Zucker rats with non-insulin-independent diabetes mellitus (NDDM) (type 2 diabetes) on genetic basis. *F. exasperata* leaf aqueous extract (FEE, 100 mg/kg/day p.o.) was administered orally by orogastric intubation to fasted Groups B and C rats. In groups B and C rats, administration of FEE commenced 4 weeks post STZ injection, and continued for the next 4 consecutive weeks. Group A rats gave normal biochemical and morphological findings. Group B rats exhibited pronounced polyuria, hypoinsulinaemia, hyperlipidaemia and hyperglycaemia. These findings were also observed in group C rats, except that there was hyperinsilinaemia. Histopathological study of the aortic blood vessels showed extensive collagen fiber formation as well as perivascular fibrosis in both groups B and C rats. Four weeks of oral administration of *F. exasperata* leaf aqueous extract to diabetic groups of rats decreased blood glucose, blood pressure and lipid profiles. Administration of FEE (100 mg/kg p.o.) also restored the microanatomy of the blood vessels to almost normal levels. The findings of this study suggest that *F. exasperata* leaf aqueous extract possesses hypoglycaemic, hypotensive and hypolipidaemic properties. These findings lend biomedical and pharmacological support to the folkloric, ethnomedical uses of the plant in the management and/or control of diabetes and hypertension among the Yoruba-speaking people of Western Nigeria.

Biography

Stephen Adewole completed his Ph.D at the age of 46 years from Obafemi Awolowo University, Ile-Ife, Osun State, Nigeria, Postdoctoral fellowship studies from University of KwaZulu-Natal, Durban, South Africa. He is the Chief Medical Director, Jim-Steve Medical Centre, Ipetumodu, Nigeria, Head of Anatomy, Obafemi Awolowo University. He has Published 44 papers in reputable journals and is serving as reviewer for many repute journals. His research focus has been in markers of oxidative stress, evaluating the ameliorative effects of herbal extracts and drugs on various tissues in diabetic states. As Anatomist we have better understanding of effects of diabetes mellitus on the microanatomy of various organs in the body and we are able to monitor the ameliorative effects of some of the herbal products in diabetic rats.

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