Methanolic extract of *Maytenus procumbens* roots ameliorates erectile dysfunction in fructose-streptozotocin induced type 2 diabetes in rats

Abstract

Erectile dysfunction (ED) due to diabetes mellitus remains difficult to treat despite advances in pharmacotherapeutic approaches in the field. Therefore, this study investigated the erectogenic effect of the methanolic extract of *Maytenus procumbens* on type 2 diabetes in rats. The fructose-streptozotocin model was used to induce type 2 diabetes-linked ED in male rats. The sexually active rats were randomly divided into two major groups; normal group and high fructose fed group for 120 days. After 120 days, the high fructose fed group rats were given a single intraperitoneal injection of a freshly prepared streptozotocin solution (30 mg/kg). The diabetic ED rats were orally administered with the extract at 250 mg/kg, daily for 28 days. The serum, brain and penile tissues were removed for biochemical analysis and protein expression. Increased testosterone level, mounting frequency, reduced blood glucose level and serum fructosamine content were observed after 28 days of treatment in diabetic rats. Methanolic extract also exhibited an inhibitory effect on arginase, AChE and ACE activities. The crude extract further downregulated proteins PDE-5, RhoA and increased expression of eNOS in the diabetic ED treated rats. The results obtained indicate that the methanolic extract of *Maytenus procumbens* roots ameliorates erectile dysfunction in type 2 diabetic induced erectile dysfunction in rats.