DISCUSSION

Insulin resistance in human has been shown to be present in conditions like NIDDM, Obesity and dyslipidemia, thus intervention to decrease insulin resistance may postpone the development of NIDDM and its complication (Md. Shalam et al., 2006). The present study indicates that fructose-induced hypertriglyceridemia is associated with significant hyperinsulinemia. The fructose diet stimulates the hepatic production of triglyceride, both by promoting the reesterification of circulating non-esterified fatty acids and by stimulating de Novo fatty acids synthesis increased delivery of triglyceride or non-esterified fatty acids to the muscles interferes with the utilization of glucose, through the principles of Randle cycle, impairing the insulin action (Mehdi et al., 2003). Fructose-fed rats were shown to have an impaired ability to suppress hepatic glucose production and to eliminate peripheral glucose. Fructose-fed shown significantly increased in fasting serum glucose and insulin concentration in rats that consumed 15% of energy of fructose (Sharon et al., 2002). Administration of C. gigantea leaves and flower chloroform and flower petroleum ether extracts of different doses 10, 20, 50 mg/kg in high fructose diet rats significantly decreased serum glucose, insulin, triglyceride, cholesterol and FIRI compared with the diet control. Therefore, the available information strongly supports the close interrelationship between Insulin resistance and hypertriglyceridemia (Mehdi. et al., 2003). Treatment with natural herbals like, C. gigantea leaves and flower and with lesser side effect compared to the presently used synthetic oral antidiabetic agents.

Antipyretic activity C. gigantea by using yeast-induced and TAB (Typhoid) vaccine-induced pyrexia in rats and rabbits (Chitme et al., 2005a) Anti-diarrhoeal effect of hydroalcoholic (50:50) extract of aerial part of C. gigantea was studied (Chitme et al., 2004). Analgesic activities of C. gigantea hydroalcoholic (50:50) extract of aerial part
of *C. gigantea* (Chtine *et al.*, 2005b). The procoagulant activity of *Calotropis gigantea* has been studied (Rajesh *et al.*, 2005), repellent activity of the *C. gigantea* leaf, flower, stem, root extracted by using petroleum ether solvent and repellency test was carried out using glass olfactometer (Arulprakash *et al.*, 2005). The alcoholic extract of peeled roots of *C. gigantea* observed CNS activity in albino rats, prominent analgesic activity was observed in Eddy’s hot plate and acetic acid induced writhings (Ameeta *et al.*, 2006). It has been reported pregnancy interceptive activity of the ethanolic in roots of *C. gigantea*, the milky juice of this plant has been reported as a violent purgative and gastrointestinal irritant and has been used for inducing abortion (Srivastava *et al.*, 2007). The alcoholic extract of the flowers of *C. gigantea* analgesic activity in chemical and thermal models in mice (Nadkarni *et al.*, 1976; Pathak *et al.*, 2007). Procoagulant activity of *C. gigantea* latex associated with fibrin(ogen)olytic activity, the latex of *C. gigantea* in controlling bleeding (Rajesh *et al.*, 2005). Previously isolated classes of constituents rich source of several biological molecules, free amino acid, peptides and enzymes and non-enzyme proteins, among others. The constituents isolated are glycosides and proteases, the occurrence of 3’-methybutanoates of α-amyrin, β-amyrin and Ψ-taraxasterol from *C. gigantea* (Thakur *et al.*, 2002). New flavonol trisaccharide was isolated from the aerial parts of *C. gigantea* and its structure was established as isorhamnetin-3-0-[2-O-β-D-galactopyranosyl-6-O-α-L-rhamnopyranosyl]-β-Dglucopyranoside by a combination of fast atom bombardment mass spectroscopy, ‘H and C’ NMR spectra and some chemical degradations (Sen *et al.*, 1992) Calotropins DI and DII isolated from the latex of madar plants, (Sengupta *et al.*, 1964). Two new oxypregnane-oligoglycosides named Calotroposides A and B have been isolated from the roots of *C. gigantea*, an Indonesian medicinal plant, and their chemical structures have been elucidated by chemical and spectroscopic methods as 12-obenzoyllineolon 3-O-beta-D-cymaropyranosyl(1-4)-beta-
D-oleandropyranosyl(1-4)beta-D-oleandropyranosyl(1-4)-beta-D-cymaropyranosyl(1-4)-beta-D cymaropyranoside and 12-O-benzoyl deacetyl metaplexigenin 3-O-beta-D-cymaropyranosyl(1-4)-beta-Dcymaropyranoside, (Ahmed Mueen et al., 2005). In an experimental animal model, chronic Swarnabhasma-treated animals showed significantly increased superoxide dismutase and catalase activity (Mitra, et al., 2002). The antioxidant and protective effect of calotropis procera against alloxan-induced diabetics in rats belonging to the same calotropis species has been reported. The latex of calotropis procera contains cardinolides, lignans and flavanol glycosides that have been considered to its antioxidant properties

Since Calotropis gigentea are known to contain large quantities of flavonol trisaccharide isorhamnetin-3-O-[2-O-β-D-galactopyranosyl-6-O-α-L-rhamnopyranosyl]-β-Dglucopyranoside, Calotropins DI and DII and 12-obenzyllineolon 3-O-beta-D-cymaropyranosyl(1-4)-beta-D-oleandropyranosyl (1-4)beta-D-oleandropyranosyl(1-4)-beta-D-cymaropyranosyl (1-4)-beta-D-cymaropyranoside and 12-O-benzoyl deacetyl metaplexigenin 3-O-beta-D-cymaropyranosyl(1-4)-beta-Dcymaropyranoside, not unreasonable to speculate that these chemical compounds might have contributed at least in part to the observed decreased in blood serum glucose, insulin FIRI and triglyceride cholesterol effect of extract in this study however, controlled clinical trial will be required to confirm its activity and general safety.