3. Need of the present investigation

It is generally known that many diabetic patients suffer from mild or severe hypertension, although the relationship between diabetes mellitus and hypertension is not well defined. Hypertension is twice as prevalent in people with diabetes in the general population (Miesel et al., 2010). Renin angiotensin aldosterone system, sympathetic system, hyperinsulenaemia and insulin resistance are the factors which are to contribute genesis of hypertension in the diabetic patients (Sevak and Goyal 1996). Oxidative stress, over lipid production plays an important role in etiopathogenesis of hypertension and other cardiovascular complications (Young et al., 2003). Stimulation of sympathetic nervous system and in particular enhanced renal sympathetic activity has been implicated in the development of DOCA salt hypertension in rats (Hofman et al., 2005). Streptozotocin induced diabetes in rats have been used to study the effects of antihypertensive agents on cardiac complications, hypertension and dyslipidaemia (Awe et al., 2003).

Although many drugs are available in allopathic medicine to treat hypertension, they produce systemic side effects or exhibit tolerance upon chronic use. To overcome this problem nowadays herbal drug are more tested as compared to their synthetic counterparts. Epidemiologic studies have shown that the consumption of diets rich in plant derived foods high in phenolic compounds, is associated with a decreased incidence of cardiovascular mortality (Hertog et al., 1993, 1995; Keli et al., 1996). Components of *T. indica*, have been used as spices, food components and in snacks. TSE is composed of flavonoids including tannins, polyphenols, anthocyanidins, and oligomeric proanthocyanidins. A polysaccharide isolated and purified from *T. indica* seeds showed immunomodulatory activities, like the enhancement of phagocytosis and inhibition of leucocyte migration and cell proliferation, suggesting possibly interesting biological applications of this plant (Sreelekha et al., 1993). A recent study has shown the beneficial effects of the consumption of *T. indica* fruit extract in an experimental model of atherosclerosis in hamsters, including decreased levels of serum cholesterol and triglycerides (Martinello et al., 2006).

Therefore, with the perspectives of anti-atherosclerotic (Martinello et al., 2006), antidiabetic (Maiti et al., 2004), NO modulating properties of seeds of *T. indica* (Komutarin et al., 2004), present study was designed to investigate the antihypertensive activity of TSE using DOCA-salt-induced hypertensive and diabetic hypertensive rats and to substantiate the possible involvement of its hypolipidemic action in the antihypertensive mechanism of action.