Interactive study of Trigonella foenum seed extract with oral hypoglycaemic agents in high fat fed/low dose STZ induced diabetic nephropathic rats

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Experimental evidences suggest that persistent hyperinsulinemia (prediabetic) generates intracellular reactive oxygen species (ROS) and is involved in the pathogenesis of development of diabetes and secondary complications. The present study investigated the combined effect of Trigonella foenum (TF) seed extract with oral hypoglycemic's agents (OHA) in type II diabetes induced nephropathy. The development of diabetic nephropathy was assessed biochemically and histopathologically. In addition, the lipid profile and renal oxidative stress were assessed. Diabetes was induced in male Sprague-Dawley rats with high fat diet fed/low dose STZ injection which induced the renal oxidative stress, altered the lipid profile, and subsequently produced nephropathy by elevating serum creatinine, blood urea nitrogen, proteinuria and inducing glomerular damage. TF was given orally for 4 weeks in both control and diabetic rats. Plasma glucose levels and bodyweights were measured. At the end of the treatment period renal oxidative stress markers and the anti-oxidant enzymes were measured in kidney homogenate. Treatment with combination of TF and OHA significantly attenuated the renal dysfunction and oxidative stress in diabetic rats. It may be concluded that diabetes-induced oxidative stress and lipid alterations may be responsible for the induction of nephropathy in diabetic rats and the administration of TF along with OHA has prevented the development of diabetes induced nephropathy by ameliorating the lipid alteration and renal oxidative stress. Preventive therapy showed better results than curative therapy.

Biography

B Anusha has completed her B.Pharmacy from JNTU University, Anantapur, pursuing her Master’s from Rajiv Gandhi University of health sciences. She had attended many workshops and participated in many Conferences like IPS etc.