

Prevention of diabetes induced neuropathy in rats by combined therapy of *Momordica charantia* fruit extract and Pioglitazone

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Obesity induced oxidative stress is the route cause for the development of diabetes and its secondary complications. The present study was aimed to the evaluate the combined effect of polyphenolic rich methanolic extract (PRME) of *Momordica Charantia* (MC) fruit (500mg/kg) with low dose of pioglitazone in high fat diet-fed/low dose streptozotocin induced diabetic neuropathic rat model. Tail immersion test / Hot plate test was used to evaluate the neuropathic pain. OGTT, single and multiple dose study was carried out. Rats were divided into different groups. Group I was used as control and group II was considered as diabetic control. Group III to V were treated with PRME alone, pioglitazone, PRME plus pioglitazone respectively. Treatment schedule started one day before STZ injection. Anti-oxidative status of the sciatic nerve was also examined. Number of beta cell in the islets was also evaluated. OGTT was also performed at the end the treatment period. The effect of pioglitazone and PRME alone showed significant antinociceptive activity but their combination showed extremely significant increase in pain threshold level. Histopathological studies showed that MC fruit extract preserved the anti-oxidative status of the sciatic nerve and the integrity of the pancreas towards normal. Hence our study show that by combined use of PRME and pioglitazone in diabetes is useful in preventing diabetes induced secondary complication without causing hypoglycemia due to long term treatment.

Biography

Shiju TM has completed his B.Tech Biotechnology in Anna University. He is doing his Integrated Ph.D in VIT University, Vellore. He is receiving fellowship from Council of Scientific and Industrial Research, India. He has done paper and poster presentations in Indian society of Nephrology and in European Renal Association in the last year.