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Effect of *Gymnema sylvestre* on pharmacokinetics and pharmacodynamics of Pioglitazone in diabetic rats

Shravan Kumar Dholi
JNTU, Kakinada, India

Effect of the *Gymnema sylvestre* (100 mg/kg and 500 mg/kg) on the pharmacokinetics and pharmacodynamics of (7.5 mg/kg and 10 mg/kg) Pioglitazone was studied in STZ induced six groups of hyperglycemic rats after single dose administration and multiple dosing for 21 days. Pharmacokinetic studies revealed a decrease in the bioavailability of pioglitazone when given in combination with *Gymnema sylvestre*. The decrease in bioavailability was contributed by decrease in absorption rate constant and increase in clearance whereas in the pharmacodynamic study the combination in general showed decrease in serum glucose, urea and cholesterol levels, which was contributed by the antidiabetic action of *Gymnema sylvestre*. But the combination of *Gymnema sylvestre* and Pioglitazone did not decrease the serum glucose, urea and cholesterol levels comparable to Pioglitazone when given alone. Histopathological studies revealed that combination of *Gymnema sylvestre* with pioglitazone increased the volume of islets cells of pancreas. These results indicates *Gymnema sylvestre* is potent hypoglycaemic but it contributes to a decrease in hypoglycemic influence of Pioglitazone. Results have indicated the negative influence of *Gymnema sylvestre* on pharmacokinetics but positive influence on pharmacodynamics of Pioglitazone.

Biography

Shravan Kumar Dholi has completed M Pharm and pursuing PhD in JNTU, Kakinada. He has published more than 12 papers in national and international journals and presented more than 10 papers in national, international conferences.

shravanjntuk@rediffmail.com