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Study of combined effect of Metformin and herb on fructose induced diabetes in rat**Divya Pradipbhai Maheta**

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The present study evaluated the interaction between Metformin and *Pterocarpus marsupium* in combination on fructose induced diabetes in rat model. 10 weeks old male/female Spargue-Dawley rats (180-200gm) were selected for experiment and divided into seven groups (n=6). Fructose was administered as a 21% solution in drinking water to all the groups for 8 weeks. After diabetes induction, treatment received by each group for 14 days was as follows: Group 1 (Control) received Vehicle only, Group 2 (disease control) received 21% fructose solution orally, Group 3 received Metformin (50mg/kg; p.o), Group 4 received hydro-alcoholic extract of *Pterocarpus marsupium* (300mg/kg; p.o), Group 5 (MET 12.5 + HAPM) received Metformin (12.5mg/kg; p.o) with hydro-alcoholic extract of *Pterocarpus marsupium* (300mg/kg; p.o), Group 6 (MET 25 + HAPM) received Metformin (25mg/kg; p.o) with hydro-alcoholic extract of *Pterocarpus marsupium* (300mg/kg; p.o) and Group 7 (MET 50 + HAPM) received Metformin (50mg/kg; p.o) with Hydro-alcoholic extract of *Pterocarpus marsupium* (300mg/kg; p.o). At the end of study, blood glucose, serum insulin, lipids parameter, liver glycogen and reduced glutathione was evaluated. Metformin and hydro-alcoholic extract of *Pterocarpus marsupium* both demonstrated anti-diabetic and anti-hyperlipidemic effect. Results showed that combination treatment group showed significant ($p < 0.05$) normalization of blood glucose, serum insulin, lipids parameter, liver glycogen and reduce glutathione as compared to disease control group and only Metformin treated group. Combination Metformin and hydro-alcoholic extract of *Pterocarpus marsupium* showed significant anti-diabetic activity than Metformin alone this may help to reduced dose and thus reduce side effect and increase sensitivity of Metformin.

Biography

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