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عنوان مقاله:

The anti-diabetic and antioxidant effects of a combination of Commiphora mukul, Commiphora myrrha and Terminalia chebula in diabetic rats

محل انتشار:

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خلاصه مقاله:

Objective: Effects of Commiphora mukul and Commiphora myrrha ethanolic extracts and Terminalia chebula hydro-ethanolic extract combination were evaluated in streptozotocin (STZ)-induced diabetic rats. Materials and Methods: Male Wistar rats (n=48) were randomly assigned into: control; diabetic; diabetic+metformin (300 mg/kg); diabetic+dose 1 of herbal combination (438 mg/kg of C. mukul+214 mg/kg of C. myrrha+857 mg/kg of T. chebula); diabetic+dose 2 (642 mg/kg of C. mukul+214 mg/kg of C. myrrha+642 mg/kg of T. chebula); and diabetic+dose 3 (857 mg/kg of C. mukul+438 mg/kg of C. myrrha+1714 mg/kg t of T. chebula). All treatments were given orally by gavage. Diabetes was induced by STZ (60 mg/kg, i.p.). At the end of study (day 28), blood glucose, insulin and lipid profile; as well as hepatic malondialdehyde (MDA) and thiol content, and superoxide dismutase (SOD) and catalase (CAT) activities were determined. Results: In diabetic rats, plasma glucose, triglycerides (TG), total cholesterol (TC), and LDL-C, as well as hepatic MDA levels were elevated but plasma HDL-C and insulin, and hepatic thiol content and SOD and CAT activities were reduced compared to control ($p<0.01$-$p<0.001$). In diabetic+dose 3, plasma TC, TG, and LDL-C and hepatic MDA level decreased ($p<0.001$), while plasma HDL-C and insulin, and hepatic thiol content, and SOD and CAT activities increased compared to diabetic ($p<0.01$-$p<0.001$). Treatment with dose 1 and 2 improved such abnormalities in diabetic rats except for insulin level ($p<0.05$-$p<0.001$). The herbal combination effects were comparable to those of metformin. Metformin did not significantly change serum insulin and HDL-C levels, and hepatic SOD activity; however, serum levels of TC, TG, and LDL-C, as well as hepatic MDA levels, thiol content and CAT activity were improved compared to diabetic ($p<0.05$-$p<0.001$). Conclusion: These results indicate that this herbal combination acts as an anti-diabetic, antioxidant and hypolipidemic agent and it may be suggested as a beneficial remedy for diabetic patients.

کلمات کلیدی:
Anti-diabetic, Hypolipidemic, Antioxidant, Commiphora mukul, Commiphora myrrha, Terminalia chebula

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