Effect of polysaccharides from Ganoderma lucidum on streptozotocin-induced diabetic nephropathy in mice.


Source

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Abstract

The effects of Ganoderma lucidum polysaccharides (GL-PS) on renal complication in streptozotocin-induced diabetic mice have been investigated in the present study. C57BL/6J mice were made diabetic by injection of streptozotocin and GL-PS (125 and 250 mg kg⁻¹) was administered for 8 weeks. Body weight was monitored every week. Serum glucose, creatinine (Cr), blood urea nitrogen (BUN), triglyceride (TG) and urinary albumin excretion (UAE) were measured after 8 weeks of treatment. Glomerular size and mesangial matrix index were assayed by morphometric analysis. Renal expression of transforming growth factor-beta1 (TGF-beta1) were determined by immunochemistry. Renal malondialdehyde (MDA) level and superoxide dismutase (SOD) activities were also evaluated. GL-PS was able to reduce the serum Cr and BUN levels and UAE compared with diabetic model mice in a dose-dependent manner. Increasing serum glucose and triglyceride levels in diabetic mice could also be lowered by GL-PS. Moreover, GL-PS had the capacity to improve the renal morphometric changes and oxidative stress state of diabetic mice. In summary, GL-PS can improve the metabolic abnormalities of diabetic mice and prevent or delay the progression of diabetic renal complications.

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