Original Paper

Effect of chronic administration of Silymarin on oxidative stress markers in renal tissue of diabetic Rats

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Abstract

Background and Objective: Chronic diabetes mellitus is accompanied with enhanced oxidative stress and reduce the activity of antioxidant defense system. Due to significant role of enhanced oxidative stress in development of renal damage in diabetices, this study was conducted to evaluate the effect of chronic administration of Silymarin on oxidative stress markers in renal tissue of diabetic rats.

Materials and Methods: In this experimental study, 40 male Wistar rats were divided into 5 groups: control, silymarin-treated control (100 mg/kg bw), diabetic, and silymarin -treated diabetic groups (50 and 100 mg/kg bw). Silymarin was administered (daily and intraperitonealy) ten days after Streptozotocin injection for 4 weeks. Tissue level of malondialdehyde and nitrite and nitrate and activity of superoxide dismutase in kidney tissue were measured. Data were analyzed using ANOVA and Tukey tests.

Results: A significant increase in tissue level of malondialdehyde, nitrite and nitrate in diabetic rats were observed ($P<0.05$). Silymarin treatment (100 mg/kg/bw) significantly reduced the tissue level of Malondialdehyde, nitrate and nitrate ($P<0.05$). Non-significant recduction of activity of superoxide dismutase was oberved in diabetic rats and Silymarin treatment (50 and 100 mg/kg bw) did not significantly altered enzyme activity.

Conclusion: Four weeks treatment of Silymarin (100 mg/kg bw) reduce oxidative stress indexes in renal tissue of diabetic rats.

Keywords: Silymarin, Diabetes mellitus, Kidney, Oxidative stress, Malondialdehyde, Superoxide dismutase

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