EGCG ameliorates diabetic cardiac myopathy in high fat diet and STZ induced Wistar Albino rats

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ABSTRACT

Recently many evidences suggest that most of the diseases are due to the “oxidative sress”. When the equilibrium between free-radical production and cellular antioxidant defences is disturbed in favor of more free radicals, it causes oxidative stress which can promote cellular injury. Oxidative stress has been suggested to play a role in the pathogenesis of diabetic cardiomyopathy. Due to the dominant role of cardiovascular disease and the dramatic rise of obesity and type 2 diabetes mellitus as major and interlinked healthcare problems, the effect of EGCG are increasingly being investigated in these areas. The present study was undertaken to evaluate the effect of Epigallocatechin-3-gallate (EGCG) is a major bioactive polyphenol derived from green tea that has been found to possess potent antioxidant and free radical scavenging properties. It has been well documented that EGCG exerts multiple beneficial effects on cardiovascular performance, rather than eliciting direct antioxidant effects, the study also focus on the mechanisms by which tea polyphenol express these beneficial properties appear to involve their interaction with cellular signaling pathways and related machinery that mediate cell function under both normal and pathological conditions. Animals were divided into four groups where Group-I serves as control, Group-II serves as diabetic control, Group-III serves as diabetic control supplemented with EGCG, Group-IV serves as drug control. Our results shows that EGCG significantly decreases the blood glucose levels, normalize the lipid profile and bolsters the activity of antioxidant. The present study concludes that EGCG supplementation significantly attenuated cardiac dysfunction in diabetic rats; hence it may have important clinical implications in terms of prevention and management of diabetic cardiomyopathy.

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