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## Green tea polyphenols for the protection against isoprenaline-induced myocardial infarction in experimental hyperhomocystemic rats

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Green tea is a beverage that is popular worldwide. Polyphenols in green tea have been receiving attention for the maintenance of human health. The contribution of antioxidant activity in preventing diseases caused by oxidative stress has been focused upon. Hyperhomocysteinemia (Hhcy) is a risk factor for cardiovascular disease. In this study we investigated the effects of green tea extract (GTE) on isoprenaline (ISO)-induced myocardial infarction (MI) in hyperhomocysteinemic rats. Hhcy was induced by daily intake of methionine (1g/kg-body weight) in the drinking water for 4 weeks. MI was then produced by a single subcutaneous injection of ISO (300 mg/kg-1). Electrographic parameters, heart rate, ST interval, blood pressure and serum levels of creatine kinase (CK), lactate dehydrogenase (LDH) & SGOT & lipid peroxidation (MDA&GSH) were measured in heart tissue as indices of oxidative stress. Hhcy resulted in significant blood pressure reduction, ST segment elevation and increase in heart rate, serum CK & LDH levels. Cardiac MDA was significantly increased, while GSH was decreased as compared to normal control group. All the previously mentioned parameters were significantly exaggerated in Hhcy rats treated with ISO as compared to Hhcy group. Administration of GTE during the induction of Hhcy showed a considerable reduction in serum markers of cardiotoxicity, heart rate, elevated ST segment & significant improve in the reduced blood pressure. Cardiac MDA was decreased while cardiac GSH was elevated. Hhcy+ISO caused disorganization of myocardial tissue which was restored in animals treated with GTE along with Hhcy+ISO. It can be concluded that GTE possesses an antioxidant activity and by virtue of this action it can protect the heart from Hhcy alone or Hhcy+ISO induced MI.

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