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Preventive effect of morin on cardiac marker enzymes, lipid peroxides and antioxidants in isoproterenol-induced cardiotoxicity in wistar rats

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This study was designed to evaluate the cardioprotective potential of morin on cardiac markers enzymes, lipid peroxides and antioxidants status in isoproterenol (ISO)-induced myocardial infarction (MI) in rats. Male Wistar rats were pretreated with a morin (20, 40 and 80 mg/kg, respectively) daily for 45 days. After the pretreatment period, isoproterenol (85 mg/kg) was injected to rats at an interval of 24 h for two days to induce myocardial infarction. The significant increase in the levels of cardiac marker enzymes such as creatine kinase-MB (CK-MB), creatine kinase (CK), LDH, aspartate transaminase (AST) and alanine transaminase (ALT) in serum with subsequent decrease in the activities of CK, LDH, AST and ALT in the heart. Treatment with morin reversed these changes towards normalcy. The effect at a dose of 40 mg/kg of morin was more pronounced than that of the other two doses, 20 and 80 mg/kg. 40 mg/kg of morin was chosen as optimum dose and it was taken for further studies. The significantly increased in the levels of thiobarbituric acid reactive substances and lipid hydroperoxides in plasma and the heart and a significant decrease in the activities of superoxide dismutase, catalase, glutathione peroxidase and glutathione-S-transferase in the heart and the levels of reduced glutathione, vitamin C and vitamin E in plasma and heart and ceruloplasmin in plasma. Morin at a dose of (40 mg/kg) showed reversed these changes towards normalcy. The results of our study show that morin possess anti-lipoperoxidative and antioxidant activity in experimentally induced cardiac toxicity.

Biography

Govindasamy Chandramohan has completed his Ph.D. at the age of 28 years from Annamalai University, India. He is currently working as an Assistant Professor in the Department of Community Health Sciences, College of Applied Medical Sciences, King Saud University, Saudi Arabia. During his doctoral program, he has isolated a novel antidiabetic compound from the south Indian medicinal plant and he has patented his invention and patent was granted recently by IPR, India (Patent Grant No. 243139). Senior Research Fellowship and University Research Studentship have been awarded for his doctoral research by Indian Council of Medical Research and Annamalai University respectively. He is very active in participation in scientific meeting and he has attended many scientific meetings. He has also served as a Session Chair Person and organizing committee member in many scientific meetings. He has published a good number of papers in reputed journals. He is serving as an editorial board member and reviewer in reputed journals. He is also evaluator for the Indian government scientific projects. Recently, he has completed three major research projects.

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