

# 5<sup>th</sup> International Conference on Biomarkers & Clinical Research

April 15-17, 2014 St. Hilda's College - University of Oxford, UK

## Protective effect of morin on cardiac mitochondrial function during isoproterenol induced myocardial infarction in male wistar rats

Govindasamy Chandramohan, Khalid S. Al-Numair and Mohammed A. Alsaif  
King Saud University, Saudi Arabia

Altered mitochondrial function and free radical-mediated tissue damage have been suggested as important pathological events in isoproterenol (ISO)-induced cardiotoxicity. This study was undertaken to know the preventive effect of morin on mitochondrial damage in ISO-induced cardiotoxicity in male Wistar rats. Myocardial infarction in rats was induced by isoproterenol (85 mg/kg) at an interval of 24 h for 2 days. Morin was given to rats as pretreatment for 30 days orally using an intragastric tube. Isoproterenol caused a significant increase in the activity of cardiac injury marker enzymes like CK and LDH. Morin pretreatment significantly reduced the concentration of CK and LDH. ISO-treated rats had showed a significant elevation of mitochondrial TBARS and HP level and pre-treatment with morin significantly prevented the increase of TBARS and HP level to near normality. The level of enzymic and non-enzymic antioxidants was decreased significantly in ISO-treated rats and pre-treatment with morin significantly increased the levels of SOD, CAT, GPX, GST and GSH to normality. The activities of mitochondrial enzymes such as isocitrate dehydrogenase (ICDH),  $\alpha$ -ketoglutarate dehydrogenase ( $\alpha$ -KGDH), succinate dehydrogenase (SDH) and malate dehydrogenase (MDH) were decreased significantly in ISO treated myocardial ischemic rats and upon pre-treatment with morin restored these enzymes activity to normality. In addition, the decreased activities of cytochrome c oxidase and NADH-dehydrogenases were observed in ISO-treated rats and pre-treatment with morin prevented the activities of cytochrome c oxidase and NADH-dehydrogenase to normality. Pre-treatment with Morin favorably restored the biochemical and functional parameters to near normal indicating morin to be a significant protective effect on cardiac mitochondrial function against ISO induced myocardial infarction in rats.

### 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 conferences 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.

gcmohanphd@gmail.com