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Pretreatment with morin, a flavonoid, ameliorates adenosine triphosphatases and glycoproteins in isoproterenol-induced myocardial infarction in rats

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The aim of this investigation was to evaluate the preventive role of morin, a flavonoid, on cardiac marker enzymes such as aspartate transaminase, lactate dehydrogenase, creatine kinase and creatine kinase-MB, membrane bound enzymes such as sodium potassium-dependent adenosine triphosphatase, calcium-dependent adenosine triphosphatase and magnesium-dependent adenosine triphosphatase, and glycoproteins such as hexose, hexosamine, fucose and sialic acid in isoproterenol (ISO)-induced myocardial infarction (MI) in rats. Male albino Wistar rats were pretreated with morin (20, 40 and 80 mg/kg) daily for a period of 30 days. After the treatment period, ISO (85 mg/kg) was subcutaneously injected into the rats at an interval of 24 h for 2 days. ISO-induced rats showed significantly ($P < 0.05$) increased activities of cardiac marker enzymes in serum and decreased activities in the heart, and increased activities of calcium-dependent adenosine triphosphatase and magnesium-dependent adenosine triphosphatase in the heart, and the activity of sodium potassium-dependent adenosine triphosphatase decreased in the heart. ISO induction also showed a significant increase in the levels of glycoproteins in serum and the heart. Pretreatment with morin (40 mg/kg) daily for a period of 30 days exhibited significant ($P < 0.05$) effects and altered these biochemical parameters positively compared to the other two doses. Thus, our study shows that morin has a protective role in ISO-induced MI in rats. The observed effects might be due to the free radical-scavenging, antioxidant and membrane stabilising properties of morin.

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