Research in Pharmaceutical Sciences, 2012;7(5)
School of Pharmacy and Pharmaceutical Sciences
Isfahan University of Medical Sciences

Effect of post-ischemic administration of natural honey on ischemia-reperfusion induced infarct size in global ischemia model of isolated rat heart

H. Vaez[1,*], M. Samadzadeh[2], F. Zahednezhad[2], M. Najafi[1]

[1]Department of Pharmacology, School of Pharmacy, Tabriz University of Medical Sciences, Tabriz, I.R. Iran
[2]School of Pharmacy, Tabriz University of Medical Sciences, Tabriz, I.R. Iran

Background and Aims: In the present study, effects of post-ischemic administration of natural honey on zero flow global ischemia/reperfusion induced myocardial infarct size were investigated in isolated rat heart.
Methods: Male Wistar rats were divided into five groups (n= 8-15). The rat hearts were isolated rapidly, mounted on a Langendorff apparatus, allowed to equilibrate for 30 min and then subjected to 30 min global ischemia. In the control group, the hearts were reperfused with normal drug free Krebs Henseleite (K/H) solution for 120 min immediately after ischemia, while in the test groups, reperfusion was initiated with K/H solution containing different concentrations of honey (0.25, 0.5, 1 and 2 %) for 15 min and then it resumed until the end of 120 min with drug free K/H solution. At the end reperfusion, the infarct size was measured by computerized planimetry.
Results: In the control group, the infarct size was 54.1+ 7.8 %, while in honey treated groups (0.25, 0.5, 1 and 2%), the value markedly lowered to 12.4+ 2.4, 12.7+ 3.3, 11.3+ 2.6 and 7.9+ 1.7 ($P<0.001$), respectively.
Conclusions: Post-ischemic administration of natural honey showed protective effects against global ischemia /reperfusion induced infarct size in isolated rat hearts. Antioxidant and radical scavenging activity, lipoperoxidation inhibition, presence of rich energy sources, many vitamins, minerals and enzymes may probably involve in the cardioprotective effects of natural honey.

Keywords: Natural honey; Global ischemia; Ischemia/reperfusion; Infarct size; Isolated rat heart