Effect of hydroxy safflower yellow A on myocardial apoptosis after acute myocardial infarction in rats

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ABSTRACT. This study aimed to investigate the effect of hydroxy safflower yellow A (HSYA) on myocardial apoptosis after acute myocardial infarction (AMI) in rats. We randomly divided 170 male Wistar rats into 6 groups (N = 23): normal control, sham, control, SY (90 mg/kg), HSYA high-dose (HSYA-H, 40 mg/kg), and HSYA low-dose groups (HSYA-L, 20 mg/kg). Myocardial ischemic injury was induced by ligating the anterior descending coronary artery, and the degree of myocardial ischemia was evaluated using electrocardiography and nitroblue tetrazolium staining. Bax and Bcl-2 expressions in the ischemic myocardium were determined using immunohistochemical analysis. Peroxisome proliferator-activated receptor-γ (PPAR-γ) expression in the myocardium of rats with AMI was determined using reverse transcription-polymerase chain reaction. Compared to rats in the control group, those in the HSYA-H, HSYA-L, and SY groups showed...
a decrease in the elevated ST segments and an increase in the infarct size. The rats in the drug-treated groups showed a significantly lower percentage of Bax-positive cells and a significantly higher percentage of Bcl-2-positive cells than those in the control group (P < 0.05). Moreover, mRNA expression of PPAR-γ in the ischemic myocardium of rats in the SY, HSYA-L, and HSYA-H groups was significantly lower than that in the control group (P < 0.05). Thus, HSYA and SY can attenuate myocardial ischemia in rats, possibly by increasing the level of Bcl-2/Bax, and PPAR-γ may be not a necessary link in this process.

**Key words:** Hydroxy safflower yellow A; Myocardial apoptosis; Acute myocardial infarction; Peroxisome proliferator-activated receptor-γ