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

M.X. Zhou[1]*, J.H. Fu[2]*, Q. Zhang[2] and J.Q. Wang[3]

[1]Beijing Hospital of TCM Affiliated with Capital Medical University, Beijing Institute of TCM, Beijing, China
[2]Department of Respiratory Medicine, Xiyuan Hospital, China Academy of Chinese Medical Sciences, District Haidian, China
[3]Taiyuan Hua Wei Pharmaceutical Co. Ltd., Taiyuan, Shanxi, China

*These authors contributed equally to this study.
Corresponding author: Q. Zhang
E-mail: mingxue78@163.com

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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 HYSA-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

