GW23-e1175

PROTECTIVE EFFECTS OF OPTIMAL PRESCRIPTION OF JIASHEN ON MYOCARDIAL INFARCTION IN RATS

doi:10.1136/heartjnl-2012-302920a.150

¹Shiyang Xie, ¹Youping Wang, ²Guanwei Fan, ¹Mingjun Zhu. ¹First Affiliated Hospital, Henan University of Traditional Chinese Medicine; ²Tianjin University of Traditional Chinese Medicine

Objectives This study was designed to test the hypothesis that OPJSH modulates inflammatory processes to prevent cardiac functional deterioration and reduce myocardial infarct size (IS) after MI.

Methods Male Sprague-Dawley rats (9–10 weeks) were subjected to sham-MI or MI by ligating the left anterior descending coronary artery for 1 week. The rats were divided into five groups: sham, MI, OPJSH (3 g/kg/day), OPJSH (6 g/kg/day), and losartan (an AT1 antagonist, 10 mg/kg/day). The vehicle, OPJSH, or losartan was given by oral gavage once a day after MI. Both IS and cardiac function were determined using TTC staining and Echocardiography at 1 week after MI, respectively. The levels of cytokines, including TNF- α , IL-1 β ; and chemokine, including MCP-1 in the myocardium were assayed using ELISA at 1 week after MI.

Results OPJSH (3 or 6 g/kg/day) administered after MI reduced IS compared with MI group ($39\pm 9\%$, $33\pm 13\%$ vs $55\pm 8\%$, $p<0.05$) with the greater effect at a dose of 6 g/kg/day. Administration of losartan also reduced IS compared with MI group ($39\pm 6\%$ vs $55\pm 8\%$, $p<0.05$). Compared with MI group, administration of OPJSH (3 or 6 g/kg/day) improved cardiac function as evidence by partially preventing the increases in LVEDD (0.87 ± 0.15 vs 0.72 ± 0.13 or 0.65 ± 0.13 cm, $p<0.05$) and LVESD (0.72 ± 0.15 vs 0.55 ± 0.16 or 0.45 ± 0.16 cm, $p<0.05$), and the decreases in LVEF ($39.0\pm 8.1\%$ vs $53.6\pm 20.1\%$ or $69.4\pm 15.6\%$, $p<0.05$) and LVFS ($16.3\pm 3.8\%$ vs $25.6\pm 12.8\%$ or $36.5\pm 13.9\%$, $p<0.05$), the greater effect was achieved at a dose of 6 g/kg/day. Losartan treatment also improved cardiac function compared with MI group as shown by the normalisation of LVEDD (0.49 ± 0.08 vs 0.87 ± 0.15 cm, $p<0.05$) and LVESD (0.30 ± 0.06 vs 0.72 ± 0.15 cm, $p<0.05$), and attenuating the decreases in LVEF ($75.4\pm 4.9\%$ vs $39.0\pm 8.06\%$, $p<0.05$) and LVFS ($38.6\pm 4.2\%$ vs $16.3\pm 3.8\%$, $p<0.05$). Additionally, administration of OPJSH (3 or 6 g/kg/day) attenuated the increases in myocardial levels of cytokine and chemokine compared with MI group (TNF- α : 4.71 ± 1.14 or 3.97 ± 0.72 vs 5.05 ± 1.01 pg/mg protein, $p<0.05$; IL-1 β : 10.18 ± 1.36 or 7.47 ± 2.50 vs 13.82 ± 2.11 pg/mg protein, $p<0.05$; MCP-1: 8.78 ± 1.12 or 7.52 ± 0.63 vs 12.70 ± 1.46 pg/mg protein, $p<0.05$). Losartan treatment also inhibited the increases in myocardial levels of cytokine and chemokine compared with MI group (TNF- α : 3.53 ± 0.73 vs 5.05 ± 1.01 pg/mg protein, $p<0.05$; IL-1 β : 8.36 ± 0.57 vs 13.83 ± 2.11 pg/mg protein, $p<0.05$; MCP-1: 9.46 ± 1.87 vs 12.70 ± 1.46 pg/mg protein, $p<0.05$).

Conclusions Our studies showed that consistent with losartan-induced cardioprotection, OPJSH administered after MI reduced myocardial IS and improved cardiac function that was associated the

decreases in myocardial levels of cytokine and chemokine. The data indicate that OPJSH exert its cardioprotection possibly via inhibiting inflammatory response. The results suggest that OPJSH may have a promising potential for the prevention and treatment of MI.