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Effect of Shenyuan on inflammatory and rheological factors in a porcine model of acute myocardial infarction

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Background and Aim: The precious herb American Ginseng and traditional Chinese herb *Corydalis yanhusuo* have been in use in clinical practice for many years on account of their salutary effects on the cardiovascular system. Shenyuan is a new compound medicine extracted from the mixture of American Ginseng and *Corydalis yanhusuo*. Our previous study has found that Shenyuan exerted anti-oxidation and anti-apoptotic effect in both rodent and porcine myocardial infarction (MI) models. In this study we aim to extend investigation into inflammatory mechanism and hemodynamics alterations.

Materials and Methods: Pigs were divided randomly into five groups: (1) Group S, sham operated; (2) Group C, MI models control; (3) Group L, MI + low-dose Shenyuan (240 mg/kg•d) (4) Group M, MI + moderate-dose Shenyuan (320 mg/kg•d); (5) Group H, MI + high-dose Shenyuan (400 mg/kg•d). MI was induced by the left anterior descending coronary artery ligation. Shenyuan treatment started one week before MI and continued for another two weeks after MI. The experiment was carried out at five time points, i.e. pre-MI, and post-MI 6 hours, post-MI 2days, post-MI 7days and post-MI 14 days.

Results: An imbalance of pro/anti-inflammatory cytokines in peripheral blood existed in MI model pigs. High dose of Shenyuan attenuated the increase of plasma IL-17f and IL-6 and rescued the attenuation of plasma IL-10 ($p < 0.05$). Besides, medium and high doses of Shenyuan increased Treg cells accumulation into myocardium in the infarcted zone of left ventricular and only high doses of Shenyuan increased Treg cells accumulation in the non-infarcted zone ($p < 0.05$). MI model pigs also had higher hemodynamics parameters than sham, whereas all doses of Shenyuan effectively reduced whole blood viscosity, plasma viscosity and platelet aggregation rate ($p < 0.05$).

Conclusion: Shenyuan elicited a significant cardio protective effect by markedly ameliorating the inflammatory changes and hemorheological abnormalities after MI onset, and high dose of Shenyuan was more potent in porcine models.

Biography

Wenyi Liang is a physician graduated from Chongqing Medical University in China. Currently, she is working for a PhD degree at the Core-Laboratory of Peking University First Hospital. Therapy of traditional Chinese medicine on heart diseases is one of her major research interests.

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