

Angiogenic Effects of the Extracts from Chinese Herbs: Angelica and ChuanXiong

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New Research into Chinese Herbs for Heart Disease

Angelica and ChuanXiong are used to cure ischemic heart disease in China. Previous studies found that these two herbs could increase myocardial blood flow, oxygen-supply and keep myocardial oxygen balance, etc. However, the mechanisms of angiogenic effects of these two herbs are not well-known. The purpose of this study was to assess the effects of Angelica and ChuanXiong on vascular endothelial growth factor (VEGF) expression in rat myocardial infarction, on endothelial cell proliferation and quantity of vessels on chick embryo chorioallantoic membrane (CAM).

In this study, rats were divided randomly into either pre-treatment or acute-treatment group and sacrificed at the end of the treatments. VEGF expression using Western blot analysis was significantly increased in the groups pre-treated with ChuanXiong and Angelica when compared to the control group ($p < 0.05$). There was significant increase in VEGF expression in the rats treated acutely with Angelica ($p < 0.05$). In the contrary, the rats treated with ChuanXiong showed a decrease in VEGF expression when compared to the acute-treatment control group ($p < 0.05$). Similar results were observed in immunohistochemistry of VEGF expression in the myocardia. Our study also demonstrated that these two herbs significantly enhanced endothelial cell proliferation ($p < 0.05$) and revascularity in CAM ($p < 0.05$).

The data showed that Angelica and ChuanXiong could affect VEGF expression in rat myocardial infarction, promote endothelial cell proliferation and stimulate quantity of vessels on CAM model. The results suggest that Angelica and ChuanXiong have angiogenic effects, and may provide some mechanisms for the treatment of myocardial infarction and peripheral ischemia.