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Effect of Xin Mai Jia on atherosclerosis in rats

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ABSTRACT. We investigated the therapeutic effect of Xin Mai Jia (XMJ) on atherosclerosis (AS) in rats. Rat models of AS were established by peritoneally injecting vitamin D, feeding a high-fat diet, and inducing balloon injuries in rats. The stomachs of the rats were irrigated continuously for 10 weeks with XMJ. Blood lipid- and hemorheology-related indices of blood samples were detected. Pathological changes in the right common carotid arterial tissues were also determined. The protein expression levels of endothelial nitric oxide synthase, angiotensin-1, and endothelin-1 were determined by western blotting. XMJ reduced cholesterol, trigylecride, and low-density lipoprotein levels as well as blood viscosity, sedimentation, and hematocrit. Furthermore, XMJ alleviated vascular endothelial injury and reduced/eliminated atherosclerotic plaques. In contrast, XMJ significantly increased the endothelium-dependent relaxing response of the AS rat models. The

western blotting results showed that XMJ upregulated endothelial nitric oxide synthase but downregulated angiotensin-1 and endothelin-1. XMJ prevented the development of AS by regulating blood lipid levels, hemorheology, and vascular function.

Key words: Angiotensin-1; Atherosclerosis; Vascular function; Endothelial nitric oxide synthase; Endothelin-1

