

论文

小檗碱对肾性高血压心肌肥厚模型大鼠左心室重塑的影响

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摘要:

关键词: 小檗碱 双肾双夹模型 左心室重塑

Effect of berberine on left ventricular remodeling in renovascular hypertensive rats

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Abstract:

The purpose of this study is to evaluate the effects and the underline mechanisms of berberine on the cardiac function and left ventricular remodeling in rats with renovascular hypertension. The renovascular hypertensive model was established by the two-kidney, two-clip (2K2C) method in Sprague-Dawley (SD) rats. Two weeks after surgery, all the operated SD rats were randomly assigned into four groups: ① renovascular hypertensive model group; ② berberine 5 mg·kg⁻¹ group; ③ berberine 10 mg·kg⁻¹ group; ④ captopril 45 mg·kg⁻¹ group; and the sham operated rats were used as control. Four weeks after the drugs were administered, the cardiac function was assessed. The ratios of heart weight to body weight (HW/BW), left ventricular weight to body weight (LVW/BW) and right ventricular weight to body weight (RVW/BW) were compared between groups. Coronal sections of the left ventricular tissue (LV) were prepared for paraffin sections, picosirius red and HE staining was performed. The left ventricular wall thickness (LVWT), interventricular septal thickness (IVST), the parameters of myocardial fibrosis indicated by interstitial collagen volume fraction (ICVF) and perivascular collagen area (PVCA) were assessed. Nitric oxide (NO), adenosine cyclophosphate (cAMP) and guanosine cyclophosphate (cGMP) concentrations of left ventricular tissue were measured. Berberine 5 mg·kg⁻¹ and 10 mg·kg⁻¹ increased the left ventricular ±dp/dt_{max} and HR. Berberine 10 mg·kg⁻¹ decreased HW/BW and LVW/BW. The image analysis showed that both 5 and 10 mg·kg⁻¹ of berberine decreased LVWT, ICVF and PVCA, while increased the NO and cAMP contents in left ventricular tissue. Berberine could improve cardiac contractility of 2K2C model rats, and inhibit left ventricular remodeling especially myocardial fibrosis in renovascular hypertension rats. And such effects may partially associate with the increased NO and cAMP content in left ventricular tissue.

Keywords: 2K2C model left ventricular remodeling berberine

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