



Effects of the Supercritical Fluid Extraction of Dahurian Angelica Root and Szechwan Lovage Rhizome on Spontaneous Hypertension Rats

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ABSTRACT

The supercritical fluid extraction of Dahurian Angelica Root (Bai Zhi) and Szechwan Lovage Rhizome (Chuan Xiong) was named as BCC. In the study, we investigated whether BCC had effects on left ventricular hypertrophy (LVH) and myocardial fibrosis in spontaneous hypertensive rats (SHR). For SHR + BCC group, BCC (0.3 g/kg) was orally administered daily for 12 weeks. The SHR group and the Wistar Kyoto rats (WKY, normal control) group, the equal volume of 5% CMC-Na distilled water. After 12 weeks, left ventricle was segregated from each rat in the groups, and the left ventricle weight/body weight (LVW/BW) calculated. The volume fraction of collagen (VFC) in myocardium and the diameter of cardiac muscle cell (DCMC) were examined by histological staining. Biochemical indicators of blood sample such as Angiotensin II (Ang II), Aldosterone (ALD), Hyaluronic Acid (HA), Laminin (LN), Procollagen III (PC III) and Collagen type IV (CIV) levels were detected by using radioimmunoassay (RIA). And also NOS and iNOS levels were measured by means of ultra-violet spectroscopy (UV). The results shown that in SHR + BCC group, the LVW/BW, DCMC and VFC decreased significantly versus SHR group, the same as biochemical indicators except NOS and iNOS. All of above index was similar to WKY group. Statistically significant correlations were found among the plasma Ang II level, the mean systolic blood pressure (SBP), and the NOS level of the three groups. Our study indicates that the BCC can control the LVH and myocardial fibrosis in SHR.

KEYWORDS

Dahurian Angelica Root; Szechwan Lovage Rhizome; LVH; Myocardial Fibrosis; SHR

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