adrenergic receptor (AR) levels in the heart. Thus far, not much research has been done with regard to traditional Chinese medical treatment for CHF. We investigated the effect of Shexiangbaoxin pills (SXBXP) on the function of the heart and the expression of a_1-AR and b-AR subtypes in the messenger RNA (mRNA) levels and protein levels of non-infarction left ventricular tissue from rats with CHF induced by myocardial infarction.

Methods Models of CHF were established by left anterior descending coronary artery ligature. Fifty-four Wistar rats were randomly divided into five groups: normal control group (group A), sham operation group (group B), CHF model group (group C), positive medicine control group (group D), and small-dose SXBXP group (group E) and large-dose SXBXP group (group F), deployed intragastrically. Cardiac function was examined by echocardiography before and after therapy; mRNA expressed levels were measured by semiquantitative reverse transcription polymerase chain reaction (RT-PCR) for b_1-AR, b_2-AR, b_3-AR, a_{1A}-AR, a_{1B}-AR, and a_{1D}-AR; protein levels were measured by western blotting analysis for b_1-AR, b_2-AR, a_{1A}-AR, a_{1B}-AR, and a_{1D}-AR in non-infarction left ventricular tissue.

Results There was no significant difference in the left ventricular ejection fraction (LVEF) between groups A and B. Compared to group B, LVEF of groups C, D, E, and F were significantly decreased ($p<0.01$) before therapy. After therapy, compared to group C, LVEF of group F was significantly improved ($p<0.05$). Compared to group B, b_1-AR and a_{1B}-AR expressed levels were markedly decreased ($p<0.05$), a_{1A}-AR and b_3-AR were significantly increased ($p<0.01$) in group C, and in both mRNA and protein expressed levels b_2-AR had no significant difference between groups B and C ($p>0.05$). a_{1D}-AR mRNA levels were unchanged in each group ($p>0.05$), but a_{1D}-AR protein level was significantly decreased in group C ($p<0.05$). After treatment, compared to group C, mRNA levels of b_1-AR and a_{1B}-AR were significantly increased ($p<0.05$ and $P<0.01$), and a_{1A}-AR was markedly decreased in groups D, E, and F ($p<0.05$). b_3-AR level significantly declined in both groups D and F ($p<0.01$), but b_2-AR and a_{1D}-AR expressed levels remained unchanged in each group ($p>0.05$). Protein levels, compared to group C, b_1-AR was significantly increased ($p<0.01$, $p<0.05$, and $p<0.01$) and a_{1A}-AR was markedly decreased in groups D, E, and F ($p<0.05$, $p<0.01$, and $p<0.01$). b_2-AR expressed level was significantly increased in group F ($p<0.05$). a_{1B}-AR expressed level was significantly increased in both groups E and F ($p<0.05$), and a_{1D}-AR was remarkably increased in both groups D and F ($p<0.05$).

Conclusions After SXBXP treatment, LVEF was increased and cardiac function was significantly ameliorated in rats with CHF. The therapeutic effect of SXBXP may be related to better blood supply for myocardium and up-regulation of b_1-AR and a_{1B}-AR, and down-regulation of a_{1A}-AR and b_3-AR. The results show that SXBXP can be used in treatment of CHF and the therapeutic effect of large-dose SXBXP is superior to small-dose SXBXP.

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EFFECTS OF SHEXIANGBAOXIN PILLS ON THE EXPRESSION OF CARDIAC α1- AND β-ADRENERGIC RECEPTOR SUBTYPES IN RAT HEARTS WITH HEART FAILURE INDUCED BY MYOCARDIAL INFARCTION

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Objectives Chronic heart failure (CHF) had been characterised as an activated sympathetic system leading to the alteration of