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THE EFFECT OF BERBERINE ON ARRHYTHMIA CAUSED BY STRETCH OF ISOLATED MYOCARDIAL INFARCTED HEARTS IN RATS

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Cao Jun-xian, Fu Lu, Dong Yu-hui, Dong Yan-li, Cao Jun-xian. *The First Hospital of Harbin Medical University*

Objectives To study the effect of berberine on arrhythmia caused by stretch of isolated myocardial infarcted (MI) hearts in rats.

Methods The study was carried out in the laboratory of Heilongjiang traditional Chinese medicine university. 40 Wistars were randomly divided into 4 groups: normal control group, berberine group, MI group, MI+ berberine group. After perfused on Langendorff, the model of MI was made with ligation of left anterior descending branch for 30 min. Berberine was dissolved in Tyrode's solution at a concentration of $300 \mu\text{mol l}^{-1}$. The hearts were stretched for 5 s by 0.2 ml. The effect of stretching was observed for 30 s, including 90% monophasic action potential (MAPD_{90}), premature ventricular beats (PVB) and ventricular tachycardia (VT). Quantitative data were compared with ANOVA. Qualitative data were compared with a χ^2 test. Differences with a value of $p < 0.05$ were considered statistically significant.

Results MAPD_{90} in normal control and MI group obviously lengthened after the hearts were stretched ($p < 0.01$). And MAPD_{90} in MI group was even longer than that of normal control group ($p < 0.05$). Berberine has no influence on MAPD_{90} of basic condition ($p > 0.05$), while it could reduce the lengthened MAPD_{90} after stretched ($p < 0.05$ or $p < 0.01$). The incidence rate of PVB and VT in normal control and MI group increased after stretched. $300 \mu\text{mol/l}$ berberine could reduce the incidence rate of PVB, and obviously inhibit the occurrence of VT ($p < 0.01$).

Conclusions Berberine could obviously inhibit the occurrence of stretch-induced arrhythmias after myocardial infarction.