

[gw22-e0273]

THE EVALUATION OF THE EFFECT OF HYDROGEN SULFIDE POSTCONDITIONING BY P-V LOOP AGAINST MYOCARDIAL I/R INJURY IN RATS

Chenghai Peng¹, Sa Shi², Zhitao Li², Yanjun Chen¹, Xueqi Li¹, Ye Tian³ ¹Department Of Cardiology, The Forth Affiliated Hospital, Harbin Medical University, Harbin, China; ²Department Of Pathophysiology, Harbin Medical University, Harbin, China; ³Department Of Cardiology, The First Affiliated Hospital, Harbin Medical University, Harbin, China

10.1136/heartjnl-2011-300867.165

Objective To evaluate the effect of hydrogen sulfide (H₂S) postconditioning on myocardial ischemia-reperfusion (I/R) by pressure-volume loop (P-V loop).

Methods The I/R model of rat in vivo was established by ligating the left anterior descending coronary artery for 30 min and reperusing for 120 min. Wistar rats (n=32) were randomly divided into four groups: Sham operation, ischemia-reperfusion (I/R), Ischemic postconditioning (IPO) and H₂S postconditioning. In sham operation, there was no ligation. In IPO, at the start of reperfusion, three cycles of 30 s reperfusion and 30 s LAD reocclusion preceded the 3 h of reperfusion. In H₂S postconditioning, NaHS (15 μmol/kg, Sodium hydrosulfide) was administered before coronary artery reperfusion. The heart rate (HR), I/R arrhythmia, the left ventricular end-systolic pressure (LVESP), left ventricular end-diastolic pressure (LVEDP), the slope of the end-systolic P-V relation (ESPVR) and the slope of the end-diastolic P-V relation (EDPVR) were detected. Infarct size was determined by scanning the images of the rat heart ventricular sections stained with Evans blue and TTC.

Results Compared with I/R and IPO group, the I/R arrhythmia and the infarct size were decreased significantly (p<0.05, p<0.05). The parameters of heart function evaluated by P-V loop were improved greatly (p<0.01) in H₂S postconditioning group compared to that in I/R group, but there was no significant difference between H₂S postconditioning and IPO group.

Conclusion Myocardial I/R injury was decreased by H₂S postconditioning, and it was sensitive and accurate to evaluate the heart function by P-V loop.