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THE PROTECTION OF REMOTE POST-PROCESSING AND ATP POSTPROCESSING ON ISCHEMIA-REPERFUSION MYOCARDIA IN RATS

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Objective Observe the protection of kidney remote ischemic post-processing (kidney RI-Post), ATP post-processing (ATP-Post) and the combination on myocardial ischemia-reperfusion injury in rats.

Methods Healthy male SD (Sprague-Dawley) rats 40, weight 250~300 g, were randomly divided into 5 groups: (1) sham operation (Sham) group (n=8); (2) ischemia-reperfusion (I/R) group (n=8); (3) ATP-Post group (n=8); (4) RI-Post group (n=8); (5) Joint group (n=8). At the end of experiment, levels of serum superoxide dismutase (SOD), malondialdehyde (MDA); creatine kinase (CK-MB) were detected; HE staining light microscopy was used to observe the myocardial tissue morphology; the protein expression of apoptosis-related gene Bcl-2, Bax. Results by immunohistochemistry.

Results (1) compared to RI-Post group and the ATP-Post group, Joint Group SOD: MDA increased and CK-MB decreased, the difference was significant ($p<0.05$). (2) changes of myocardial morphological under HE staining light microscope: Sham group: no edema among cell interstitial, muscle fiber arranged neat, clear cell boundaries, no granulocyte infiltration, no red blood cell leakage. I/R group: myocardial interstitial edema, muscle fiber severe swelling, cell boundaries ill-defined, stripes disappeared, more spotty infiltration of granulocytes, and small quantity of red blood cell leakage can be seen. RI-Post group, ATP-Post Group and Joint group: lightly myocardial edema, clear cell boundaries, myocardial cells arranged in a

relatively ordered manner, granulocyte infiltration less significantly, red blood cell leakage can rarely be seen. (3) the expression of myocardial apoptosis related factors Bax and Bcl-2: Sham group: compared to RI-Post group and ATP-Post group, the expression of Bcl-2 protein, Bcl-2/Bax in Joint group was significantly increased, while Bax protein was significantly reduced ($p<0.05$).

Conclusions ATP postprocessing can reduce myocardial ischemia-reperfusion injury; kidney remote ischemic post-processing can reduce myocardial ischemia-reperfusion injury; their combination can further reduce myocardial ischemia-reperfusion injury.