**THE EFFECT OF ENDOGENOUS CARBON MONOXIDE ON MYOCARDIAL ISCHEMIA REPERFUSION INJURY**

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**Objective:** To explore the effects of Endogenous Carbon Monoxide on the ischemia reperfusion injury.

**Method:** Rats were treated by protoporphyrin cobalt chloride (CoPP, a kind of endogenous carbon monoxide agonist) and zinc protoporphyrin (ZnPP, a kind of endogenous carbon monoxide inhibitors). After processing, the myocardial ischemia reperfusion model was made by Langendorff isolated cardiac perfusion system. The stop perfusion time was set for 30 min, and the left ventricular systolic pressure (LVSP), the maximum up/down rate of the left ventricular pressure, (±dP/dtmax), left ventricular developed pressure (LVDP), heart rate (HR), and flow pressure (FP) were collected by PowerLab, and Myocardium’s cGMP was measured by ELISA, the endogenous carbon monoxide in plasma and the contents of CK and LDH in the 10th min perfusate were measured by Colorimetry.

**Results:** Before stopping perfusion, the cardiac function indices of CoPP group, ZnPP group and control group were stable, there was no significant difference. After reperfusion, there was significant difference in cardiac function between the three groups (P< 0.05). Compared with reperfusion, ZnPP group’s cardiac function decreased and showed obvious cardiac arrest, the CoPP group’s cardiac function did not change significantly, while still maintaining a relatively stable level. At the same time, three groups’ carbon monoxide level, myocardial enzymology and the cardiac function recovery time after reperfusion were also have obvious difference (P < 0.05), the control group and ZnPP group reduced, ZnPP group reduced more serious, the CoPP group’s presented the results of the opposite.

**Conclusion:**It is concluded that in cardiac ischemia reperfusion injury endogenous carbon monoxide can maintain cardiac function, decrease the myocardial enzyme, shorten the time of cardiac function recovery, and play a protective role in cardiac ischemia reperfusion injury.