

Protective effect of Diltiazem on digestive organs in hemorrhagic-shock canine

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Abstract

AIM: To investigate the protective effects and mechanism of Diltiazem (Dil) on liver, pancreas and small intestine in hemorrhagic shock canine.

METHODS: The canines were bled to a mean arterial pressure (MAP)

of 5.33-6.67 kPa for 30 min to establish the shock model. During the shock state, the dogs received either water-soluble calcium blocker Dil or saline solution. The MAP was kept at this level for 90 min, then the total blood which was bled previously was reperfused. The total observation time of the experiment was 240 min.

RESULTS: Dil could significantly increase MAP from 150 min to 240 min ($P < 0.01$) and the activity of superoxide dismutase (SOD) of pancreas tissue ($P < 0.01$), and it could also decrease the content of malondialdehyde (MDA) in liver, pancreas and small intestine tissues ($P < 0.01$) and the activity of SOD of the liver and small intestinal tissues ($P < 0.01$) in the canines. Electron microscopic data indicated that the ultrastructures of liver, pancreas and small intestine tissues were normal in Dil group.

CONCLUSION: Dil can protect the structure and function of the liver, pancreas and small intestinal in hemorrhagic-shock canine.

Key words: Calcium channel blockers; Diltiazem; Shock, hemorrhagic; Malondialdehyde; Digestive system; Oxygen free radical

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