

论著

缝隙连接脱耦联剂庚醇对大鼠缺血-再灌注损伤心肌的保护作用

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摘要 目的: 在整体大鼠心脏缺血-再灌注损伤模型上研究庚醇的心肌保护作用, 并在离体缺氧心脏模型上观察庚醇对电耦联参数的影响。方法: 在体大鼠实验模型, 结扎冠状动脉左前降支30 min和复灌2 h, 观察不同剂量的庚醇(0.03、0.06、0.30和0.60 mg/kg)的作用; 离体大鼠实验模型, 全心停灌70 min, 应用四电极法观察不同浓度的庚醇(0.05、0.10、0.50和1.00 mmol/L)对缺氧期间心肌整体阻抗和电脱耦联参数的影响。结果: 庚醇对在体大鼠缺血-再灌注损伤心肌具有减少心律失常发生和缩小心肌梗死面积的作用; 各浓度庚醇(0.05-1.00 mmol/L)均明显延迟心肌缺氧期间电脱耦联时间和平台时间, 降低电脱耦联最大速率。结论: 适度剂量的庚醇对在体缺血-再灌注损伤心肌有保护作用, 其作用可能与其引起的电脱耦联延迟有关。

关键词 [缝隙接合部](#); [解耦联](#); [庚醇](#); [再灌注损伤](#); [心肌](#); [大鼠](#)

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Heptanol, a gap junction uncoupler, protects heart against ischemia-reperfusion injury in rats

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Abstract

AIM: To determine the effect of heptanol on the in vivo heart subjected to ischemia and reperfusion, on the whole-tissue resistance and electrical uncoupling in the isolated rat heart during prolonged ischemia. METHODS: The effect of heptanol at different doses (0.03, 0.06, 0.30, and 0.60 mg/kg) on the intact rat heart during 30 min ischemia (ligation of left anterior descending coronary artery) and 2 h of reperfusion was observed. The effect of heptanol on electrical uncoupling in the isolated rat heart was investigated by measuring the changes in whole-tissue resistance using the four-electrode method. RESULTS: Heptanol reduced infarct size and the severity of arrhythmia during ischemia and reperfusion within a range of doses (0.06-0.60 mg/kg). No effect was observed at dose of 0.03 mg/kg and the severity of arrhythmia during ischemia was increased at dose of 0.60 mg/kg. Heptanol at different concentrations (0.05-1.00 mmol/L) delayed the onset of electrical uncoupling and plateau time during prolonged ischemia, and reduced the maximal rate of uncoupling. CONCLUSION: Heptanol conferred cardioprotection on ischemia-reperfusion myocardium. The mechanism may be related to its uncoupling effect.

Key words [Gap junctions](#) [Uncoupling](#) [Heptanol](#) [Reperfusion injury](#) [Myocardium](#) [Rats](#)

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