

论著

参麦注射液对急性缺氧-复氧心肌细胞凋亡的影响

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收稿日期 2004-11-25 修回日期 2004-12-24 网络版发布日期 2009-10-16 接受日期 2004-12-24

摘要 目的: 观察参麦注射液对急性缺氧-复氧后心肌细胞凋亡的影响, 并探讨其可能机制。方法: 采用原代培养的大鼠心肌细胞, 通过化学缺氧法使细胞缺氧5 min, 再恢复氧供应15 min, 复制心肌细胞缺氧-复氧(anoxia-reoxygenation, A/R)模型。Annexin V-FITC/PI双染色流式细胞仪检测细胞凋亡百分率; Fluo-3负载激光扫描共聚焦显微镜观察细胞内钙离子水平。结果: A/R组心肌细胞凋亡百分率明显高于正常组, 细胞内平均钙离子荧光强度也显著强于正常组($P < 0.01$)。参麦注射液组细胞凋亡率显著小于A/R组, 同时细胞内钙超载也明显轻于A/R组($P < 0.01$)。结论: 参麦注射液能有效抑制缺氧-复氧心肌细胞的凋亡, 这种保护作用的机制之一可能是通过减轻细胞内Ca²⁺超负荷实现的。

关键词 [参麦注射液](#); [心肌细胞](#); [缺氧-复氧](#); [细胞凋亡](#); [钙超载](#)

分类号 [R363](#)

Effect of Shenmai injection on cardiomyocyte apoptosis after acute anoxia-reoxygenation

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Abstract

AIM: To study the effects of Shenmai injection on cardiomyocytes apoptosis after acute anoxia-reoxygenation (A/R) and the possible mechanism. METHODS: In this experiment, cultured cardiomyocytes isolated from neonatal rat were used. Model of myocardial anoxia-reoxygenation injury was produced by depriving oxygen for 5 min and then restoring oxygen for 15 min. The apoptotic cells was detected by flow cytometry to detect labbled Annexin V-FITC/PI. The intracellular calcium level was observed by laser scanning confocal microscopy markered Fluo-3/AM. RESULTS: In anoxia-reoxygenation group, the percentage of apoptotic cells and fluorescent intensity of intracellular calcium were both prominently higher than those in control group ($P < 0.01$). The apoptotic rate in Shenmai injection group was notably less than that in A/R group and the intracellular calcium overload was also less obvious in Shenmai injection group than that in A/R group ($P < 0.01$). CONCLUSION: Shenmai injection has notable effects on attenuating apoptotic rate after acute anoxia-reoxygenation in cardiomyocytes, which may be partly due to its alleviating intracellular calcium overload.

Key words [Shenmai injection](#) [Cardiomyocytes](#) [Anoxia-reoxygenation](#) [Apoptosis](#) [Calcium overload](#)

DOI: 1000-4718

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