

黄芪总苷提取物对心肌缺血再灌注损伤大鼠心肌细胞凋亡及相关蛋白 Bcl-2 表达的影响

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摘要:目的 探讨黄芪总苷提取物对大鼠实验性心肌缺血再灌注时心肌细胞凋亡以及对相关 Bcl-2 蛋白表达的影响。方法 将大鼠随机分为假手术组、缺血再灌注模型组、黄芪总苷提取物 (40mg/kg) 组, 对左冠状动脉前降支进行结扎, 造成类似于临床的心肌缺血再灌注损伤。分别对三组大鼠进行心肌细胞凋亡数目检测, Bcl-2 蛋白表达检测以及心肌损伤情况检测。结果 与模型组大鼠相比较, 黄芪总苷提取物组心肌细胞凋亡率明显降低 ($P < 0.05$), Bcl-2 蛋白表达量明显降低 ($P < 0.05$); 心肌组织损伤的病理学变化明显减轻。结论 黄芪总苷提取物对缺血再灌注心肌有保护效应, 起作用机制可能与下调 Bcl-2 蛋白表达并进一步抑制心肌细胞凋亡有关。

关键词: 黄芪总苷提取物; 心肌缺血再灌注; 心肌细胞凋亡; Bcl-2; 大鼠

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Effects of Astragaloside Extract on Cardiomyocyte Apoptosis and Expression of Bcl-2 in Myocardial Ischemia Reperfusion Injury Rats

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Abstract Objective To observe the effects of astragaloside extract on cardiomyocyte apoptosis and expression of Bcl-2 in myocardial ischemia reperfusion injury rats. **Method** Rats were randomly divided into sham operation group, ischemic reperfusion group, astragaloside extract group (40mg/kg). The left anterior descending coronary artery was ligated to induce myocardial ischemia reperfusion injury similar to that in clinic. The number of myocardium apoptosis was detected in three groups, the expression of Bcl-2 protein and the myocardial injury were detected. **Result** Compared with the model group, the cardiac myocyte apoptosis rate in astragaloside extract group decreased significantly ($P < 0.05$), the expression of Bcl-2 protein decreased significantly ($P < 0.05$); pathological changes of myocardial tissue injury significantly reduced. **Conclusion** Astragaloside extract has protective effect on ischemia-reperfusion myocardium, and its mechanism may be related to down-regulation of Bcl-2 protein expression and further inhibition of cardiomyocyte apoptosis.

Key words astragaloside extract; myocardial ischemia reperfusion; myocardial apoptosis; Bcl-2; rat

随着近年来对细胞凋亡研究的深入,使人们既往认为心肌坏死是心肌细胞死亡的主要形式,其机制与缺血再灌注损伤(ischemia/reperfusion, I/R)密切相关^[1]。细胞凋亡在对心肌缺血、I/R以及心力衰竭等病理生理学改变上均起着重要的作

用^[2]。而研究发现细胞凋亡要受到一系列程序控制,分子生物学研究还进一步证明,细胞的凋亡要通过信号通路介导。所以,通过对信号通路阻断,就可以阻断凋亡的发生,从而达到心肌细胞的数目稳定的效果,进而达到维持心功能的目的。