

基础研究

瘦素预处理对心肌缺血再灌注损伤小鼠血清 IL-6和TNF- $\alpha$ 表达的影响

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摘要:

目的: 监测小鼠心肌缺血再灌注损伤(MIRI)过程中血清炎性细胞因子IL-6和TNF- $\alpha$ 水平变化, 以及瘦素预处理对其的影响, 探讨瘦素预处理在小鼠MIRI中的作用。方法: 40只雄性C57BL/6小鼠随机分为假手术组、MIRI模型组、MIRI瘦素预处理组(小鼠在MIRI手术前30 min给予腹腔注射重组瘦素)和MIRI术后瘦素处理组(小鼠于MIRI手术后30 min给予腹腔注射重组瘦素), 在MIRI手术后3和6 h分别取小鼠血清及心肌组织, 测定小鼠血清炎性细胞因子IL-6和TNF- $\alpha$ 水平以及心肌、血清瘦素水平。结果: 与假手术组比较, MIRI瘦素预处理组3和6 h IL-6和TNF- $\alpha$ 水平明显升高(P<0.01); 与MIRI模型组比较, MIRI瘦素预处理组3和6 h IL-6和TNF- $\alpha$ 水平明显降低(P<0.01)。与假手术组比较, MIRI瘦素预处理组 3和6 h心肌、血清瘦素水平明显升高(P<0.05); 与MIRI模型组比较,MIRI瘦素预处理组3和6 h心肌、血清瘦素水平明显降低(P<0.01)。结论: 瘦素预处理可减轻小鼠缺血心肌中炎性细胞因子IL-6和TNF- $\alpha$ 的表达, 从而起到心肌保护的作用; 瘦素预处理可减轻MIRI。

关键词: 心肌缺血再灌注损伤; 瘦素; 瘦素预处理; 白细胞介素-6; 肿瘤坏死因子- $\alpha$

Effect of leptin pretreatment on serum IL-6 and TNF- $\alpha$  levels in mice with myocardial ischemia reperfusion injury

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Abstract:

Objective To monitor the changes of serum interleukin-6(IL-6) and tumor necrosis factor-alpha (TNF- $\alpha$ )levels in the process of myocardial ischemia reperfusion injury(MIRI) in mice and the pretreatment effects of leptin on them,and to explore the effects of leptin pretreatment on MIRI in mice. Methods Forty males C57BL/6 mice were randomly divided into sham-operation group,MIRI model group ,established by blocking left coronary artery anterior descending branch for 30 min followed by reperfusion),leptin pretreatment group (Leptin+MIRI group,established by injecting intraperitoneally leptin at 30 min before ischemia) and leptin post-treatment group (MIRI+Leptin group,established by injecting intraperitoneally leptin at 30 min after reperfusion).The blood and heart samples were obtained from each mouse at 3 and 6 h after reperfusion.The serum IL-6 and TNF- $\alpha$  levels and the levels of leptin in cardiac muscle and serum were detected. Results Compared with sham-operation group,the serum IL-6 and TNF- $\alpha$  levels at 3 and 6 h in Leptin+MIRI group were significantly increased(P<0.01). Compared with MIRI model group,the srum IL-6 and TNF- $\alpha$  levels at 3 and 6 h in Leptin+MIRI group were signicantly decreased (P<0.01).Compared with sham-operation group,the leptin levels in cardiac muscle and serum at 3 and 6 h in Leptin+MIRI group were significantly increased(P<0.05);compared with MIRI model group,the leptin levels in cardiac muscle and serum at 3 and 6 h in Leptia+MIRI group were significantly decreased(P<0.01).Conclusion Leptin pretreatment can reduce the serum IL-6 and TNF- $\alpha$  expressions,thus may have cardiac muscle protection,and leptin pretreatment can alleviate MIRI.

Keywords: myocardial ischemia reperfusion injury; leptin; leptin pretreatment; interleukin-6; tumor necrosis factor-alpha

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