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论著

大鼠心肌梗死后心肌NADPH氧化酶亚单位p22phox的表达

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摘要 目的：探讨心肌梗死大鼠心室重塑与还原型烟酰胺腺嘌呤二核苷酸磷酸（NADPH）氧化酶亚单位p22phox和超氧阴离子的关系。 方法： Sprague-Dawley大鼠冠脉左前降支结扎复制心肌梗死模型，8周后，心脏超声、血流动力学、心脏形态学方法检测分析心室重塑，检测血浆和非梗死心肌脂质过氧化物的浓度。用RT-PCR和免疫组化方法检测p22phox mRNA水平和蛋白水平的分布。用激光共聚焦方法检测心肌超氧阴离子分布。 结果： 心肌梗死后大鼠心室重塑过程显著，与正常对照组比较，左室舒张末压、左室舒张末径［(3.09±1.52 vs 18.24±6.58)mmHg，(0.67±0.06 vs 0.90±0.15)mm, P<0.01］和脂质过氧化物水平在血浆和非梗死心肌均显著大于正常对照组(P<0.05)。p22phox mRNA和蛋白表达以及超氧阴离子分布在梗死和非梗死心肌亦均显著增加。 结论： 大鼠心肌梗死后，NADPH氧化酶表达增高，其来源的超氧阴离子可能通过氧化应激参加心室重塑过程。

关键词 心室复建； NADPH氧化酶； 心肌梗死

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Expression of NADPH oxidase subunit p22phox in myocardial infarction rats

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Abstract

<FONT face=Verdana>AIM: To determine the relevance of NADPH oxidase subunit p22hox and the expression of superoxide anion on ventricular remodeling in myocardial infarction (MI) rats. METHODS: MI of Sprague-Dawley rats were established by left anterior descenting coronary artery ligation. 8 weeks after MI, Doppler echocardiography, hemodynamic study and histomorphometry were performed to analyze the ventricular remodeling. The level of thiobarbituric acid reactive substance in plasma and myocardium were measured, and the distribution of superoxide anion was observed with laser scanning confocal microscope. The expression of p22phox mRNA and protein level was detected by RT-PCR and immunohistochemistry. RESULTS: The left ventricular remodeling was significant in MI rats, also the level of thiobarbituric acid reactive substance increased in the plasma and non-infarcted myocardium. The expressions of p22-phox mRNA and protein levels, and superoxide anion increased in infarcted and non-infarcted myocardium in MI rats. CONCLUSION: Our results suggest that the expression of NADPH oxidase and its derived superoxide anion may take part in left ventricular remodeling through oxidative stresss after MI.</FONT>

Key words Ventricular remodeling NADPH oxidase Myocardial infarction

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