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论著

HIF-1α和MMP-2在大鼠脑出血灶周脑组织中的表达

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摘要
目的：通过动态观察脑出血灶周脑组织中缺氧诱导因子(HIF)-1α和基质金属蛋白酶(MMP)-2的表达，探讨HIF-1α和MMP-2表达之间的联系。方法：50只SD大鼠随机分成假手术组和脑出血模型组，分别于术后6 h，24 h，72 h，7 d，21 d处死大鼠。RT-PCR方法检测脑出血灶周组织HIF-1α和MMP-2 mRNA的表达及免疫组织化学方法检测HIF-1α和MMP-2蛋白的表达，并对HIF-1α和MMP-2的表达进行相关分析。结果：模型组术后灶周组织出现HIF-1α, MMP-2 mRNA表达上调和大量黄色的HIF-1α，MMP-2蛋白阳性细胞，于24～72 h达高峰。HIF-1α mRNA及其蛋白表达分别与MMP-2 mRNA及其蛋白表达呈正相关(分别r=0.588, P=0.002; r=0.765, P＜0.001)。结论：脑出血灶周脑组织中HIF-1α和MMP-2的表达上调，且HIF-1α可能调控MMP-2的表达。

关键词 脑出血；缺氧诱导因子-1α；基质金属蛋白酶-2

分类号

Expressions of HIF-1α and MMP-2 in the perihematoma after intracerebral hemorrhage in rats

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Abstract
ObjectiveTo observe the expressions of hypoxia-inducible factor (HIF)-1α and matrix metalloproteinases (MMP)-2 in the perihematoma after ICH in rats and to study the relation between HIF-1α and MMP-2.MethodsFifty healthy SD rats were randomly divided into sham-operated group (n=25) and ICH model group (n=25). Rats were sacrificed at 6 h，24 h，72 h and 7 d，21 d after the operation，respectively. The mRNA expressions of HIF-1α and MMP-2 in the perihematoma after ICH were detected by RT-PCR. Immunohistochemical technique was used to evaluate the protein expression of HIF-1α and MMP-2. The correlation of HIF-1α and MMP-2 expression between different groups was compared by Pearson’s correlation coefficient.ResultsIt was found that the expressions of HIF-1α and MMP-2 mRNA were upregulation and there were lots of buffy positive cells in the perihematoma of model group. The peek value appeared at 24 to 72 h. There was positive correlation between the expressions of HIF-1α and MMP-2 by Pearson's correlation coefficient (mRNA:r=0.588, P=0.002; protein:r=0.765, P＜0.001).ConclusionThe expressions of HIF-1α and MMP-2 were up-regulation in the perihematoma. HIF-1α maybe control the expression of MMP-2.

Key words intracerebral hemorrhage；hypoxia-inducible factor-1α；matrix metalloproteinase-2

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