

基础研究

新生大鼠视神经损伤后视觉系统中GAP-43的表达

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摘要:

目的: 研究新生大鼠视神经横断伤后视觉系统中神经生长相关蛋白质(GAP-43)的表达变化及意义。方法: 新生健康SD大鼠(24 h) 72 只,随机分为正常对照组和视神经横断组。采用免疫组织化学方法检测正常发育及视神经损伤后发育过程中1、3、7、14、28和56 d的SD大鼠视觉系统中GAP-43的表达。结果: 正常对照组SD大鼠出生后整个发育阶段视觉系统中均可检测到GAP-43阳性细胞的表达,且随着神经元发育成熟表达逐渐下降(P<0.05);视神经横断组GAP-43在损伤后发育过程中可检测到阳性表达,且较正常对照组增高,1 d变化不明显,3 d开始增高,7~14 d达峰值,之后逐渐下降至正常水平,直至56 d基本恢复正常水平(P<0.05)。结论: GAP-43在新生鼠视觉系统中随生长发育而改变,在神经横断后GAP-43表达增强,表明GAP-43在视觉系统发育和再生过程中起重要作用。

关键词: 神经生长相关蛋白;视觉系统;大鼠 Sprague-dawley

Expression of growth associated protein-43 after optic nerve transection injury in visual system of neonatal rats

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Abstract:

Abstract: Objective To study the expression of growth associated protein 43 (GAP-43) after optic nerve transection injury in visual system of neonatal rats and its significance. Methods The healthy neonatal SD rats (24 h) were randomly divided into normal control group and optic nerve transection injury group. Immunohistochemical staining technique was used to detect the expressions of GAP-43 in normal and optic nerve transection injury visual system of neonatal rats at 1,3,7,14,28,56 d after birth. Results The positive expression of GAP-43 in normal control group was found in visual system of neonatal rats at developing stage and with the neurons mature the expression of GAP-43 was decreased(P<0.05). The positive expression of GAP-43 in optic nerve transection injury group was found and was higher than that in normal control group. There was no significant change at 1 d, the expression of GAP-43 in optic nerve transection injury group was increased at 3 d and reached peak at 7-14 d, then it was gradually decreased to normal level until 56 d. Conclusion The expression of GAP-43 in visual system of neonatal rats changes with the development. The expression of GAP-43 is increased after optic nerve transection injury. This result suggests that GAP-43 may play an important role in the developing and regeneration of visual system.

Keywords: growth associated protein; visual system; rats, Sprague-dawley

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