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探索学习对局灶性脑梗死大鼠PSA-NCAM、nACHR表达的影响

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张 东 槐雅萍 闫桂芳 贾子善

河北省人民医院康复医学科，石家庄，050051

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摘要：

摘要目的： 通过建立局灶性脑梗死大鼠模型，给予探索学习环境干预，观察探索学习环境对脑梗死大鼠海马齿状回区多唾液酸神经细胞黏附因子（polysialylated neural cell adhesion molecule，PSA-NCAM）、烟碱型乙酰胆碱受体（nicotinic acetylcholine receptor，nACHR）表达的影响，进一步阐明康复环境对神经系统损伤恢复的作用机制。方法： 健康雄性SD大鼠120只，随机选取80只采用电凝右侧大脑中动脉法（MCAO）制造局灶性脑梗死模型，40只仅开颅不电凝大脑中动脉。手术组大鼠随机分为：社交组（n=40）、探索学习组（n=40），假手术组（n=40）。各组大鼠于术后第1天、3天、7天、14天、28天随机选取5只处死，利用免疫组化技术观察大鼠海马颗粒细胞层nACHR、PSA-NCAM表达情况。结果： MCAO术后第1天模型组较假手术组PSA-NCAM阳性细胞数明显增多（P<0.05），MCAO术后第14、28天探索学习组较社交组PSA-NCAM、nACHR阳性细胞数明显增多(P<0.05)；MCAO术后第1天假手术组大鼠颗粒细胞层nACHR阳性细胞数明显多于手术组大鼠。结论： 探索学习对于局灶性脑梗死大鼠海马齿状回区颗粒细胞层PSA-NCAM、nACHR表达均有促进作用。关键词 探索学习；脑梗死；记忆；多唾液酸神经细胞黏附因子；烟碱型乙酰胆碱受体中图分类号：R743，R49 文献标识码：A 文章编号：1001-1242（2010）-02-0123-04

关键词：探索学习 脑梗死 记忆 多唾液酸神经细胞黏附因子 烟碱型乙酰胆碱受体

Effects of exploring-learning on the expressions of PSA-NCAM and nACHR in dentate gyrus of adult rats after unilateral local cerebral infarction

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Dept. of Rehabilitation Medicine, People′ s Hospital of Hebei Provincial, Shijiazhuang, 050051

Fund Project:

Abstract:

Abstract Objective: To study the influence of exploring-learning environment on expressions of polysialylated neural cell adhesion molecule(PSA-NCAM) and nicotinic acetylcholine receptor(nACHR) in rats after local cerebral infarction and to elucidate the mechanism of restoring the damage of nervous system. Method: One hundred and twenty male Sprague-Dawley rats were adopted, and 80 rats were randomly selected to establish the model of local cerebral infarction by electric coagulation MCAO. The rats were randomly divided into social communication group, exploring-learning group and sham operated group (n=40 in each group). At the 1st, 3rd, 7th, 14th, 28th d, 5 rats in each group were randomly sacrificed separately in each group. The expressions of PSA-NCAM and ACHR in dentate gyrus were examined by immunohistochemistry staining. Result: At the 1st d, the PSA-NCAM positive cells in two operated groups were more obvious than those in sham-operated group （P<0.05）. At the 14th、28th d, the PSA-NCAM and nACHR positive cells in the exploring-learning group were more obvious than those in social communication group(P<0.05). At the 1st d, the nACHR labeled cells in sham-operated group were more obvious than those in operated group(P<0.05). Conclusion: Exploring-learning could enhance the expressions of PSA-NCAM and nACHR in dentate gyrus of rats after local cerebral infraction.

Keywords:exploring-learning cerebral infarction memory polysialylated neural cell adhesion molecule nicotinic acetylcholine receptor

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