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GM1对惊厥持续状态幼鼠学习记忆功能及海马CA1区神经元的远期影响 [点此下载全文](#)

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摘要:

目的: 探讨GM1对惊厥性脑损伤幼年大鼠远期的学习记忆功能和海马CA1区神经元的保护作用。方法: 18日龄SD大鼠30只随机分成GM1治疗组、惊厥持续状态(SC)模型组、正常对照组。经腹腔注射氯化锂-毛果芸香碱诱发60min的SC发作, 观察大鼠海马CA1区的神经元死亡和丢失情况; 利用跳台实验及Morris水迷宫实验评价大鼠的学习和记忆能力。结果: 跳台实验测试中, 与模型组比较, GM1治疗组大鼠的第一次触电潜伏期显著延长, 而在5min内的触电次数及触电时间显著减少($P<0.05$); Morris水迷宫实验中, 与模型组比较, 治疗组的平均寻台潜伏期明显缩短, 而在平台区的搜索时间和穿越平台区的次数明显增多($P<0.05$)。GM1治疗组大鼠的脑组织病理变化比SC模型组轻, 其海马CA1区的神经元没有明显的死亡和丢失。结论: 幼年大鼠SC后给予大剂量GM1治疗, 可以有效地改善大鼠远期的学习记忆功能, 同时也可以减轻大鼠海马CA1区的神经元的坏死与丢失。

关键词: [单唾液酸四己糖神经节苷脂](#) [惊厥持续状态](#) [学习记忆](#) [海马CA1区](#)

The effects of monosialoganglioside (GM1) on long-term learning-memory function and neuron in hippocampal CA1 region of juvenile rats after status convulsion [Download Fulltext](#)

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Abstract:

Objective: To investigate the effects of monosialoganglioside (GM1) on long-term learning-memory disorder and brain injury induced by status convulsion in juvenile rats. Method: Thirty SD juvenile rats were divided randomly into GM1 treated group, SC and normal control group. Status convulsion (over 60 minutes) was induced in juvenile rats by intraperitoneal injection with lithium-pilocarpine. The neuron cells density in hippocampus CA1 region was detected to evaluate the severity of brain injury. Step-down test was used to evaluate the short-term memory function of rats. Morris water maze test was used to evaluate the learning and long-term spatial memory function of rats. Result: In GM1 treated group, the latency of first shock was significantly longer than that in SC model group, however the frequency and duration of shock in 5min were significantly lower than those in SC model group ($P<0.05$). In GM1 treated group, the mean latency to find the platform was significantly shorter and the time for searching the target quadrant was significantly longer than that in SC model group ($P<0.05$). Histopathological examination demonstrated that in GM1 treated group brain injury significantly diminished and the cells loss in hippocampal CA1 region decreased. Conclusion: GM1 can significantly improve long-term learning-memory function and attenuate brain injury in juvenile rats after status convulsion.

Keywords: [monosialoganglioside](#) [status convulsion](#) [learning-memory](#) [hippocampal CA1 region](#)

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