

论著

弓形虫 (RH株) 慢性感染小鼠空间学习记忆能力的初步研究

王惠玲¹,包安裕²,王高华¹,蒋明森²,刘忠纯¹,董惠芬²,郭毅³

武汉大学 1 人民医院精神卫生中心; 2 医学院人体寄生虫学教研室; 3 医学院流行病学教研室, 武汉 430060

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摘要

目的 探讨弓形虫所致慢性感染对小鼠空间学习记忆能力的影响。方法 将同系雌性昆明小鼠 20 只, 随机分为实验组和对照组, 每组 10 只。RH株弓形虫速殖子经-20℃贮存15 d后取出, 37℃快速复苏, 腹腔接种实验组小鼠 (7.7×10⁵个/只); 对照组小鼠腹腔注射生理盐水0.5 ml/只; 2月后作莫里斯水迷宫实验, 记录游泳轨迹; 并作脑组织匀浆涂片和病理学检查。结果 ①实验组小鼠脑组织匀浆涂片可见弓形虫包囊, 平均密度为15个/HP; 海马及邻近脑区未见明显病理改变。②实验组和对照组小鼠逃避潜伏期、距离隐藏站台的累积距离、游泳总路程均随训练次数的增加呈明显下降趋势 (P<0.01); 实验组的潜伏期、距离隐藏站台的累积距离均长于对照组 (P<0.01)。③实验组小鼠在60 s 内搜索策略与对照组有明显区别。结论 腹腔接种经处理的RH株弓形虫可以致小鼠慢性感染; 慢性感染在一定程度上损害了小鼠的空间学习记忆能力。

关键词 [弓形虫](#) [慢性感染](#) [水迷宫](#) [空间学习](#) [记忆](#)

分类号

Effect of Chronic *Toxoplasma* Infection on the Spatial Learning and Memory Capability in Mice

WANG Hui-ling¹,BAO An-yu²,WANG Gao-hua¹,WANG Gao-hua¹, LIU Zhong-chun¹,DONG Hui-fen²,GUO Yi³

1 Mental Health Center, Renmin Hospital of Wuhan University; 2 Department of Human Parasitology, Medical College of Wuhan University; 3 Department of Epidemiology, Medical College of Wuhan University, Wuhan 430060, China

Abstract

Objective To investigate the effect of chronic infection of *Toxoplasma gondii* on the spatial learning and memory capability in mice. Methods *Toxoplasma* tachyzoites (RH strain) were reanimated at 37℃ after 15 days' storage at -20℃, and injected intraperitoneally to mice of the experimental group each with 7.7×10⁵. Normal saline was given to the control group, 0.5 ml per mouse. Two months later, all mice were tested in the Morris Water Maze. Smears of the mice brain homogenate and pathological sections were examined. Results ① The density of cysts in the brain homogenate was 15/HP, and there was no evident pathological change in the hippocampus and adjacent areas of mice in the brain in the experimental mice. ② Latency to platform, cumulative distance to the platform, total distance traveled in both experimental and control groups decreased significantly with the increase of training days (P<0.01). The latency and cumulative distance in experimental group were significantly longer than that of the control group (P<0.01). ③ The searching strategy of mice in the experimental group was significantly different from that of the control group. Conclusion *Toxoplasma* tachyzoites can induce chronic infection in mice and the infection can damage at some extent the spatial learning and memory capability of mice.

Key words [Toxoplasma gondii](#) [Chronic infection](#) [Morris Water Maze](#) [Spatial learning](#) [Memory](#)

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通讯作者 王高华;蒋明森

作者个人主页 王惠玲¹;包安裕²;王高华¹;蒋明森²;刘忠纯¹;董惠芬²;郭毅³

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