

实验研究

肾虚质大鼠学习记忆能力与海马 Caveolin - 1 蛋白表达的实验研究*

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摘要:目的 研究肾虚质大鼠的学习记忆能力与海马区 Caveolin - 1 蛋白的表达, 从突触可塑性角度探讨“肾藏志”的物质基础与神经生物学机制。方法 采用“猫吓鼠”经典造模法构建先天不足加后天恐吓型肾虚质大鼠模型, 分为模型组、补肾组、补心组、疏肝组 4 组, 补肾组、补心组、疏肝组分别予以六味地黄丸、天王补心丹、逍遥丸, 空白组产自正常孕鼠。Morris 水迷宫检测各组大鼠学习记忆能力, 免疫组化法测定海马区 Caveolin - 1 蛋白的阳性表达。结果 与空白组比较, 模型组逃避潜伏期、总路程、首次穿越目标区域时间显著增加, 目标区停留时间、海马区 Caveolin - 1 免疫反应阳性细胞数显著减少; 与模型组比较, 补肾组、补心组逃避潜伏期、总路程、首次穿越目标区时间均显著减少, 目标区停留时间、海马区 Caveolin - 1 阳性表达显著增加; 与补心组、疏肝组比较, 补肾组逃避潜伏期、首次穿越目标区时间缩短, 总路程显著减少, 目标区停留时间、海马区 Caveolin - 1 阳性表达显著增加。结论 肾虚质大鼠学习记忆能力退化, 其内在机制可能与海马区 Caveolin - 1 蛋白表达下降有关; 补肾药物六味地黄丸可通过上调 Caveolin - 1 蛋白表达而提高肾虚质大鼠学习记忆能力; 补心药、疏肝药改善作用不如补肾药, 突出了肾与学习记忆之间的关系, 与肾藏志理论一致。

关键词: 肾藏志; 肾虚体质; 学习记忆; 海马; Caveolin - 1

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Experimental Study on Learning and Memory Ability and Expression of Caveolin - 1 Protein in Hippocampus of Rats with Kidney Deficiency

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Abstract Objective To study the learning and memory abilities and the expression of Caveolin - 1 protein in hippocampus of rats with kidney deficiency, and to explore the material basis and neurobiological mechanism of “kidney storing will” from the perspective of synaptic plasticity. **Method** The rat model of congenital insufficiency and acquired intimidation of kidney deficiency was established by “cat scare rat” model. The rats were divided into four groups: model group, kidney - invigorating group, heart - tonifying group and liver - soothing group. The kidney - invigorating group, heart - tonifying group and liver - soothing group were given Liuwei Dihuang Pills, Tianwang Buxin Bolus and Xiaoyao pills respectively. The blank group was produced from normal pregnant rats. Morris water maze test was used to test the learning and memory abilities of rats in each group, immunohistochemical method was used to detect the positive expression of