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实验方法

幼年注射氟西汀诱导制备成年ICR小鼠抑郁模型

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摘要 目的 通过幼年注射氟西汀(Flu)制备成年小鼠抑郁模型，探讨其表观有效性和预测有效性。方法 幼年ICR小鼠 出生后第4到第21天连续ip给予Flu 10 mg·kg^{-1}(幼年诱导模型组)，正常饲养至9周龄后，分为模型组、ig给予Flu 10 mg·kg^{-1}和氟哌啶醇0.1 mg·kg^{-1}组，连续3周后开始检测实验，测试期间继续给药，测试完成后小鼠为12~13周龄。开场实验检测跨格数，悬尾实验检测不动时间，明暗穿箱实验检测明暗穿箱次数。结果 与正常对照组相比，幼年诱导模型组小鼠成年后，自主活动显著减少(跨格数:83±30 *vs* 58±19;站立数:32±10 *vs* 20±8)，悬尾不动时间显著延长(83±46 *vs* (128±56)s)，明暗穿箱次数显著减少(18±5 *vs* 10±4)。小鼠连续ig给予Flu 10 mg·kg^{-1}后，自主活动显著增加(跨格数:58±19 *vs* 85±41; 站立数:20±8 *vs* 30±12)，悬尾不动时间显著缩短(128±56 *vs* (71±40)s)，明暗穿箱次数显著增加(10±4 *vs* 17±7)，各指标均恢复至正常对照组水平;而给予氟哌啶醇0.1 mg·kg^{-1}组小鼠，各指标数据无明显改变，同时表现出镇静作用。结论 幼年小鼠注射Flu成年后的表现符合抑郁模型表观有效性和预测有效性特征，有望成为制备更合理的抑郁症动物模型方法。

关键词 模型，神经学 模型，动物 氟西汀 抑郁

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Adult ICR mice depressive model established by fluoxetine exposure at neonatal stage

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Abstract

OBJECTIVE To explore and establish a behavioral and pathological model for depression in ICR mice, and to evaluate its predictive validity and face validity. **METHODS** Neonatal ICR mice were ip given fluoxetine 10 mg·kg^{-1} for 17 d (from the 4th day to 21st day after birth) and normally housed until they became adults(about 9 weeks after birth). The adult mice were ig treated with fluoxetine (Flu) 10 mg·kg^{-1} or haloperidol (Hal) 0.1 mg ·kg^{-1} for 3 weeks, and their behavior was measured by open-field test, tail-suspension test and light-dark transition test. **RESULTS** Neonatal exposure to Flu induced a ″depression-like or anxiety-like″ behavior in the adult mice, as shown by the decreased locomotor activity(crossing times: 83±30 *vs* 58±19; rear times: 32±10 *vs* 20±8), decreased light-dark transitions(18±5 *vs* 10±4) and increased immobility time (83±46 *vs* (128±56)s) in the open-field test, light-dark transition test and tail-suspension test, respectively. Chronic Flu 10 mg·kg^{-1}(ig) administation for 3 weeks all normalized ″depression-like or anxiety-like″ changes in behaviors: locomotor activity(crossing times: 58±19 *vs* 85±41; rear times: 20±8 *vs* 30±12) increased, immobility time (128±56 *vs* (71±40)s) decreased and light-dark transition times(10±4 *vs* 17±7) increased. However chronic treatment with Hal, a classical antipsychotics without antidepressant potential, had no such effect. **CONCLUSION** Neonatal exposure to Flu induces an adult depression