

## 论著

### 曲古抑素A预处理对大鼠中动脉闭塞模型大鼠脑保护作用及其与IL-1 $\beta$ 的关系

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#### 摘要:

**目的:** 探讨曲古抑素A(TSA)预处理对大鼠中动脉闭塞(MCAO)模型大鼠的脑保护作用及其与IL-1 $\beta$ 之间的关系,并评价年龄对TSA预处理所产生大鼠脑保护作用的影响。**方法:** 采用梭性头端线栓法制备局灶性脑缺血再灌注模型,将96只SD青年雄性大鼠(3~4月龄)随机分为缺血再灌注对照组、二甲基亚砷(DMSO)预处理组、小剂量TSA预处理组(0.03 mg/kg)和大剂量TSA预处理组(0.1 mg/kg),每组包括缺血再灌注6 h组、12 h组、24 h组、48 h组,每组6只大鼠。另将18只SD雄性大鼠分为老年组(22月龄)、青年组(3~4月龄)、幼年组(1月龄),均采用大剂量TSA预处理。采用方差分析比较不同处理组脑梗死体积比、脑脊液和血液IL-1 $\beta$ 含量的差异,Spearman秩相关分析脑梗死体积比与脑脊液、血液IL-1 $\beta$ 含量的线性相关。**结果:** 大剂量TSA组大鼠脑梗死体积比在缺血再灌注各时间点均小于其余3组。大剂量TSA组缺血再灌注各时间点脑脊液中IL-1 $\beta$ 含量与对照组相应时间点相比明显减少。大剂量TSA组血清中IL-1 $\beta$ 含量在缺血再灌注各时间点均低于DMSO组和对照组,小剂量TSA组与DMSO组无差别。脑梗死体积与血液IL-1 $\beta$ 、脑脊液IL-1 $\beta$ 含量的相关系数分别为0.841和0.618( $P<0.05$ )。不同年龄组大鼠的脑梗死体积比较差异无统计学意义,但老年组大鼠脑梗死体积大于其余两组。不同年龄组大鼠脑脊液中的IL-1 $\beta$ 含量差异无统计学意义( $P=0.076$ )。**结论:** 大剂量TSA预处理可减小脑梗死体积比,并降低脑脊液和血液IL-1 $\beta$ 含量;年龄对大剂量TSA预处理大鼠脑梗死体积比、血液和脑脊液IL-1 $\beta$ 没有影响。

**关键词:** 曲古抑素A 大鼠中动脉闭塞 IL-1 $\beta$  年龄

### Cerebral protection of Trichostatin A preconditioning in rats with middle cerebral artery occlusion and the relationship between Trichostatin A and IL-1 $\beta$

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#### Abstract:

**Objective:** To explore the impact on cerebral protection of Trichostatin A (TSA) preconditioning in rats with middle cerebral artery occlusion (MCAO); the relationship between cerebral protection of TSA and interleukin-1 beta (IL-1 $\beta$ ); and the impact of age on the mechanism of cerebral protection of TSA.  
**Methods:** The modified suture method was used to create stable a MCAO model. A total of 96 male SD rats were assigned randomly to four groups: a control group, a dimethyl sulfoxide (DMSO) preconditioned group, a low-dose (0.03 mg/kg) TSA-preconditioned group, and a high-dose (0.1 mg/kg) TSA-preconditioned group. Each group included four sub-groups for reperfusion for 6, 12, 24 and 48 hours, respectively, 6 rats per sub-group. An additional, eighteen healthy, male Sprague Dawley (SD) rats that received TSA preconditioning (0.1 mg/kg) were divided into three groups based on their age: young, mid-age, and old. One-way analysis of variance was used to compare the differences between groups, and the Spearman rank correlation was used to examine relationships between IL-1 $\beta$  concentrations in blood and cerebrospinal fluid and cerebral infarction volume. **Results:** The cerebral infarction volume of rats in the high-dose TSA group was less than that of the other 3 groups ( $P<0.05$ ). The IL-1 $\beta$  in blood and the cerebrospinal fluid of rats in the high-dose TSA group was lower than that in control and DMSO groups ( $P<0.05$ ); for the low-dose TSA group IL-1 $\beta$  levels were statistically the same as in controls. The Spearman rank coefficients were 0.841 and 0.618 for cerebral infarction volume correlate to blood IL-1 $\beta$  and to cerebrospinal fluid IL-1 $\beta$ , respectively ( $P<0.05$ ). No statistical differences were found in cerebral infarction volume and IL-1 $\beta$  levels in blood or cerebrospinal fluid ( $P>0.05$ ). **Conclusion:** High-dose TSA preconditioning reduces cerebral infarction volume and decreases IL-1 $\beta$  levels in blood and cerebrospinal fluid; age does not affect these parameters.

**Keywords:** Trichostatin A MCAO IL-1 $\beta$  age

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