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# 西维来司钠对脑损伤继发吸入性肺损伤大鼠的影响研究

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【摘 要】目的:探讨西维来司钠(Sivelestat sodiom)雾化吸入对脑损伤继发肺损伤大鼠的影响,从炎性反应角度探讨其作用机制。方法:SD 大鼠 60 只,随机分为 6 组,正常组(A),误吸组(B),脑损伤误吸组(C),生理盐水雾化吸入组(D),地塞米松雾化吸入组(E),西维来司钠雾化吸入组(F),每组 10 只,用酶联免疫吸附(Enzyme-linked immunosorbent assay,ELISA)法测定支气管肺泡灌洗液(Bronchoalveolar lavage fluid,BALF)的中性粒细胞弹性蛋白酶(Neutrophil elastase,NE)和白介素-8(Interleukin-8,IL-8)含量,免疫透射比浊法测定 BALF 中白蛋白浓度;光镜观察肺组织病理改变。结果:F 组肺组织形态学改善最明显,其次为 E 组;E、F 组大鼠 BALF 中 NE 低于 B、C、D 组($P<0.05$),F 组最明显;E、F 组大鼠 BALF 中 IL-8 含量均低于 C、D 组($P<0.05$),但 E、F 2 组间差异无统计学意义($P>0.05$)。结论:西维来司钠雾化吸入对脑损伤继发吸入性肺损伤大鼠肺组织的改善作用优于地塞米松,其作用机制可能与抑制 NE 的产生和活性,减轻 NE 对肺组织的直接损伤作用和抑制肺内炎性网络循环反应导致的肺组织损伤有关。

【关键词】西维来司钠;脑损伤;雾化吸入;吸入性肺损伤;中性粒细胞弹性蛋白酶
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# The effects of sivelestat sodium on secondary lung injury by aspiration in severe brain injury rats

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【Abstract】*Objective*: To study the effects of sivelestat sodium atomization inhalation on secondary lung injury by aspiration in severe brain injury rats and to explore its mechanism from the perspective of inflammatory reaction. *Methods*: 60 SD rats were randomly divided into six groups: normal group (A), aspiration group (B), aspiration of brain injury group (C), saline control group (D), dexamethasone atomization inhalation group (E), and sivelestat sodium atomization inhalation group (F), 10 rats in each group. Neutrophil elastase (NE) and interleukin -8 (IL-8) content in bronchoalveolar lavage fluid (BALF) were detected by using enzyme-linked immunosorbent assay (ELISA). Immune turbidimetry was used to determine the albumin concentration in the BALF. Pathological changes in lung tissue were observed by optical microscope. *Results*: The changes of Morphological characteristic of the lung tissue in F group were improved most significantly, the following was E group. The contents of NE in the BALF in group E and F were lower than that in group B, C and D ($P<0.05$), and The contents of NE in group F were reduced most obviously in all groups. The contents of IL-8 in the BAlF between group E and F showed no significant difference ($P>0.05$), which were lower than those in group C and D ($P<0.05$). *Conclusion*: Sivelestat sodium and dexamethasone atomization inhalation have a positive effect on the rats of brain injury with secondary inhalation lung injury, but sivelestat sodium is superior to dexamethasone, and its mechanism may be that sivelestat sodium may inhibit the production of NE and its activities and alleviate the direct injury of lung tissue induced by NE and inhibit the lung injury caused by the inflammatory reaction of the lung.

【Key words】sivelestat sodium; brain injury; atomization inhalation; inhalation lung injury; neutrophil elastase

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# 氧化苦参碱对大鼠局灶性脑缺血再灌注损伤 BDNF 及其受体 TrkB 表达的影响

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【摘 要】目的：观察氧化苦参碱（Oxymatrine，OMT）对大鼠局灶性脑缺血再灌注后皮质脑源性神经生长因子（Brain-derived neurotrophic factor，BDNF）及其受体酪氨酸激酶 B（Tyrosine kinase B，TrkB）表达的影响，探讨 OMT 神经保护作用的机制。方法：采用线栓法建立大鼠大脑中动脉缺血再灌注模型。SD 雄性大鼠随机分为假手术组、模型组、阳性药尼莫地平组和 OMT 低、中、高剂量给药组 6 组，缺血 2 h 再灌注 24 h 后进行神经功能评分。免疫组化法检测 BDNF 阳性细胞，Western blot 检测 BDNF 和 TrkB 蛋白表达。结果：与模型组比，OMT 中、高剂量组神经学评分均减低，BDNF 阳性细胞数以及 BDNF 和其受体 TrkB 蛋白表达显著增加，差异有统计学意义（$P<0.05$，$P<0.01$）。结论：OMT 对大鼠局灶性脑缺血再灌注损伤的恢复有一定促进作用，其机制可能与上调 BDNF 及受体 TrkB 的表达有关。

【关键词】氧化苦参碱；脑缺血再灌注；脑源性神经生长因子；酪氨酸激酶 B

【中国图书分类法分类号】R285.5；R743.31 【文献标志码】A 【收稿日期】2011-03-20

# Effect of oxymatrine on the expression of BDNF and its receptor TrkB after focal cerebral ischemia-reperfusion in rats

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【Abstract】*Objective*: To study the effects of oxymatrine (OMT) on brain-derived neurotrophic factor (BDNF) and its receptor tyrosine kinase (TrkB) in cerebral cortex after focal cerebral ischemia-reperfusion in rats, and explore the neuroprotective mechanism of oxymatrine. *Methods*: The rat middle cerebral artery occlu-

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