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论著

川芎嗪对大鼠坐骨神经慢性压迫性损伤L_4/L_5段背根神经节P2X3受体表达的影响

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摘要 目的 探讨川芎嗪抑制$P2X_3$受体介导慢性神经病理痛的作用途径。方法 制备大鼠坐骨神经慢性压迫性损伤(CCI)神经病理痛模型，于d 2起ip川芎嗪100 mg·kg^{-1}，每天1次，共14 d。免疫组织化学法观察CCI大鼠L_4/L_5段背根神经节$P2X_3$受体的表达，全细胞膜片钳技术测定新鲜分离的L_4/L_5段背根神经节三磷酸腺苷（ATP）和α,β-亚甲基三磷酸腺苷（α,β-meATP）激活的电流。结果 与正常对照组比较，正常大鼠ip川芎嗪14 d，L_4/L_5段背根神经节$P2X_3$受体表达、ATP激活电流和α,β-meATP激活电流无明显变化，假手术组亦无明显变化。与假手术组比较，CCI模型组大鼠L_4/L_5段背根神经节$P2X_3$受体的表达、ATP和α,β-meATP激活电流明显增强。CCI大鼠ip川芎嗪14 d，L_4/L_5段背根神经节$P2X_3$受体表达、ATP和α,β-meATP激活电流较CCI模型组明显降低。结论 川芎嗪可抑制CCI大鼠L_4/L_5段背根神经节$P2X_3$受体的表达，从而对$P2X_3$受体介导的神经病理痛产生抑制作用。

关键词 川芎嗪 神经痛 神经节,脊 受体,嘌呤P2
分类号 R972.4

Effect of ligustrazine on expression of P2X3 receptors in L_4/L_5 dorsal root ganglion of rats with chronic constriction injury

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Abstract

AIM To investigate the pathway of ligustrazine to alleviate neuropathic pain induced by $P2X_3$ receptor. **METHODS** Chronic constriction injury (CCI) rat model with neuropathic pain was prepared. From d 2, ligustrazine 100 mg·kg^{-1} was given ip once daily for 14 d. The $P2X_3$ receptor expression in L_4/L_5 dorsal root ganglion (DRG) neurons was detected with immunohistochemistry assay. Whole-cell patch-clamp technique was used to measure adenosine triphospate(ATP) and α,β-methylene-ATP(α,β-meATP) activated currents in freshly isolated DRG neurons of CCI rats. **RESULTS** Compared with normal control, the expression of $P2X_3$ receptors and ATP-activated currents (I_{ATP}) and α,β-meATP-activated currents($I_{\alpha,\beta\text{-meATP}}$) in L_4/L_5 DRG neurons did not change after ligustrazine was given to normal rats for 14 d. There was also no significant difference between sham and normal control groups. The expression of $P2X_3$ receptor, I_{ATP} and $I_{\alpha,\beta\text{-meATP}}$ in L_4/L_5 DRG neurons of CCI model rats significantly increased compared with sham group. After ligustrazine was given ip to CCI model rats for 14 d, the expression of $P2X_3$ receptor, I_{ATP} and $I_{\alpha,\beta\text{-meATP}}$ in L_4/L_5 DRG neurons decreased significantly. **CONCLUSION** Ligustrazine can alleviate neuropathic pain induced by $P2X_3$ receptor, which may be related to its inhibitory effect on the expression of $P2X_3$ receptor in L_4/L_5 DRG of CCI rats.

Key words ligustrazine neuralgia ganglia spinal receptors purinergic P2

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