药学学报 1998, 33(10) 721-726 DOI: ISSN: CN:

论文

左旋千金藤啶碱对外周血管多巴胺DA_1和DA_2受体亚型的作用

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摘要:

用家兔离体血管环方法,研究左旋千金藤啶碱(*l*-SPD)对外周血管DA_1和DA_2受体亚型的作用。结果表明,*l*-SPD使DA_1受体激动剂FODA诱发的肾、肺和肠动脉以及DA_2受体激动剂PBDA诱发的肠和股动脉舒张反应的量效曲线非平行右移,最大反应(Emax)降低,均呈非竞争性拮抗;*l*-SPD本身还可使肾和肺血管产生轻度的浓度依赖性舒张反应,表现为DA_1受体激动剂的作用特性。提示*l*-SPD为外周血管DA_1和DA_2受体的混合性阻滞剂并兼有DA_1受体部分激动剂的双重作用特性。

关键词: 左旋千金藤啶碱 血管多巴胺受体亚型 多巴胺受体激动剂 多巴胺受体阻滞剂

EFFECTS OF *l*-STEPHOLIDINE ON THE PERIPHERAL VASCULAR DOPAMINE DA_1 AND DA_2 RECEPTOR SUBTYPES

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Abstract:

The effects of *l*-stepholidine(*l*-SPD) on peripheral vascular dopamine DA_1 and DA_2 receptors were studied using isolated vascular rings in rabbits. It was shown that (1) *l*-SPD(0.1～10μmol·L^{-1}) shifted the dose-response curves to the right in a nonparallel fashion and decreased the maximal response (Emax) of both the fenoldopam(FODA,a selective DA_1 agonist)-induced and the propyl-buty-dopamine(PBDA, a selective DA_2 agonist)-induced vasorelaxation showing a non-competitive antagonistic action. The pD_2 values of *l*-SPD for FODA in the renal, pulmonary and mesenteric arteries were 5.43, 5.48 and 5.58,respectively. The pD_2 values for PBDA in the mesenteric and femoral arteries were 5.35 and 5.89,respectively. The potencies of its antagonistic action were comparable to SCH23390, a selective DA_1 antagonist, and to domperidone, a selective DA_2 antagonist.(2)*l*-SPD(0.1～100μmol·L^{-1}) per se was also found to induce slight but dose related vasorelaxations in the renal and pulmonary arteries displaying its DA_1 agonistic activity.Its pD_2 values were 4.98 and 5.02, respectively. However, its Emax were considerably smaller than that of FODA. These results suggest that *l*-SPD is a mixed peripheral DA_1 and DA_2 receptor antagonists and weak DA_1 receptor agonist with pharmacological property of dual action.

Keywords: Vascular dopamine receptor subtypes Dopamine receptor agonist Dopamine receptor antagonist *l*-Stepholidine

收稿日期 1997-12-11 修回日期 网络版发布日期

DOI:

基金项目:

通讯作者:

作者简介:

参考文献:

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