



喘可治注射液对哮喘小鼠气道炎症和豚鼠离体气道平滑肌的作用

投稿时间: 2010-02-02 责任编辑: 刘妮 [点此下载全文](#)

引用本文: 徐慧敏,姚红伊,翁俊杰,徐翔.喘可治注射液对哮喘小鼠气道炎症和豚鼠离体气道平滑肌的作用[J].中国中药杂志,2010,35(10):1302.

DOI: 10.4268/cjmm20101018

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**中文摘要:**目的:研究中药喘可治注射液(Chuankezhi injection,CKZ)雾化吸入对哮喘小鼠气道炎症的治疗作用,CKZ对豚鼠离体气道平滑肌的扩张作用,为哮喘急性发作期CKZ的合理应用提供依据。方法:利用卵白蛋白诱发小鼠哮喘模型,将小鼠按给药不同随机分为雾化吸入CKZ低、中、高剂量组(分别以0.2,0.4,0.8 mL·kg<sup>-1</sup>·d<sup>-1</sup>每天2次)、腹腔注射CKZ组(0.4 mL·kg<sup>-1</sup>·d<sup>-1</sup>每天2次)、腹腔注射地塞米松组(0.5 mg·kg<sup>-1</sup>·d<sup>-1</sup>)、模型组和空白对照组,采用支气管肺泡灌流法和病理切片观察CKZ的抗炎作用;采用离体气管条法观察CKZ对豚鼠气道的直接扩张和对抗氨甲酰胆碱(carbamylcholine,CCH)和组胺引起的气道平滑肌收缩的作用。结果:在整体试验中,与模型组比较,雾化吸入CKZ高剂量组、腹腔注射CKZ组和地塞米松组,哮喘小鼠支气管肺泡灌流液中白细胞总数和嗜酸性粒细胞增加显著减少(P<0.01),病理切片中炎症损伤明显减轻;在离体试验中,CKZ对豚鼠气道无直接舒张作用,对CCH和组胺引起的气道平滑肌收缩无对抗作用。结论:CKZ对卵白蛋白诱导的小鼠哮喘有抗炎治疗作用;对豚鼠离体气道平滑肌无明显扩张作用;在哮喘急性发作期的治疗中,CKZ雾化吸入并非首选给药方式。

中文关键词:喘可治注射液 雾化吸入 哮喘 炎症 气道平滑肌

## Effects of Chuankezhi injection on airway inflammation in mouse model of asthma and isolated guinea-pig airway smooth muscle

**Abstract:**Objective: To observe the effects of inhaled Chuankezhi injection (CKZ) on airway inflammation in a mouse model of asthma and dilation of isolated guinea-pig airway smooth muscle *in vitro*, which can provide pharmacodynamic evidence for CKZ treating acute attack of asthma. Method: BALB/c mice were sensitized with ovalbumin (OVA) on Days 1-15, and then were inhaled with OVA aerosol on Days 22-28. The sensitized mice were administered with inhalation of aerosolized CKZ injection (0.2, 0.4, 0.8 mL·kg<sup>-1</sup>·bid), or intraperitoneal injection of CKZ (0.4 mL·kg<sup>-1</sup>·bid), dexamethasone (0.5 mg·kg<sup>-1</sup>·d<sup>-1</sup>) and saline (control) on Days 22-28. Airway inflammation was evaluated by counting cells in bronchoalveolar lavage fluid (BALF) and by lung histology. The influences of CKZ on the dilation of tracheal smooth muscle in guinea-pig and the contraction induced by carbamylcholine (CCH)/histamine *in vitro* were also observed. Result: *In vivo*, OVA-sensitized mice developed a significant airway inflammatory response that was significant inhibited by inhalation of CKZ (0.8 mL·kg<sup>-1</sup>·bid), and intraperitoneal injection of CKZ (0.4 mL·kg<sup>-1</sup>·bid) and dexamethasone (0.5 mg·kg<sup>-1</sup>·d<sup>-1</sup>). *In vitro*, CKZ did not dilate tracheal smooth muscles in guinea-pigs, and did not attenuate the contraction induced by carbamylcholine (CCH)/histamine. Conclusion: CKZ can modulate airway inflammation in asthma, but has no dilation effect on the tracheal smooth muscle in guinea-pig *in vitro*. These results demonstrate that inhaled CKZ is not a preferred administration.

**keywords:** Chuankezhi injection inhalation asthma inflammation airway smooth muscle

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