中国实验方剂学杂志
China Journal of Experimental Traditional Medical Formulae

"通利大肠"对COPD大鼠气道重构的影响

投稿时间： 2011-12-04 点此下载全文

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作者	单位	E-mail
全贞雪	北京中医药大学基础医学院, 北京 100029	
钟相根	北京中医药大学基础医学院, 北京 100029	
李宇航	北京中医药大学基础医学院, 北京 100029	liyuhang@bucm.edu.cn
张前	北京中医药大学基础医学院, 北京 100029	
贾旭	北京中医药大学基础医学院, 北京 100029	
解华	北京中医药大学基础医学院, 北京 100029	
周晓卫	北京中医药大学基础医学院, 北京 100029	
马小鑫	北京中医药大学基础医学院, 北京 100029	
刘晓辉	北京中医药大学基础医学院, 北京 100029	
田彦	北京中医药大学基础医学院, 北京 100029	
王蔚	北京中医药大学基础医学院, 北京 100029	
刘蕾	北京中医药大学基础医学院, 北京 100029	
刘妙	北京中医药大学基础医学院, 北京 100029	
王毅	北京中医药大学基础医学院, 北京 100029	
徐云	北京中医药大学基础医学院, 北京 100029	
田浩君	北京中医药大学基础医学院, 北京 100029	

基金项目:国家重点基础研究发展规划(973计划)项目(2009CB522704)

中文摘要:目的:观察"通利大肠"对慢性阻塞性肺疾病(COPD)模型大鼠肺组织的基质金属蛋白酶-9(MMP-9)、转化生长因子-β(TGF-β)蛋白表达和细胞信号转导分子Smad3mRNA,Smad7mRNA基因水平变化,从气道重构角度探讨COPD"从肠论治"的效应机制。方法:用气管注射脂多糖加熏香烟联合造模方法建立COPD大鼠模型,随机分为正常组、模型组、治肠组、治肺组及肺肠同治组。正常组、模型组灌胃10mL·kg^{-1}纯净水,各给药组灌胃相应中药(治肠组、治肺组、肺肠同治组的药量分别为1.50,4.25,5.75g·kg^{-1}),连续14d。用免疫组化法测量肺组织中MMP-9,TGF-β蛋白阳性表达面积比率,用实时荧光定量PCR法测定肺组织Smad3和Smad7的mRNA水平。结果:①与正常组比较,模型组大鼠肺组织MMP-9和TGF-β表达增强,蛋白阳性面积比率值分别为1.231%和3.002%,Smad3 mRNA水平升高至14.804,Smad7mRNA水平降低至0.2(P<0.01)。②与模型组比较,治肠组肺组织MMP-9,TGF-β分别为0.944%和1.989%,二者表达减少,Smad3mRNA水平降低,Smad7mRNA水平升高(P<0.05或P<0.01)。③与治肺组比较,肺肠同治组的肺组织TGF-β表达和Smad3mRNA水平减少,而Smad7mRNA水平升高至0.784(P<0.01),MMP-9的表达则有减少的趋势。结论:通利大肠或在治肺的基础上增加通利大肠,能抑制慢性阻塞性肺疾病模型大鼠的气道重构,从而减轻气道阻塞,改善通气障碍及肺功能,这可能是COPD"从肠论治"效应产生的作用环节之一。

中文关键词:慢性阻塞性肺疾病 宣白承气汤 从肠论治 气道重构

Effects of ‘Catharsis Large Intestine' on Airway Remodeling in Rats with COPD

Abstract:Objective: To observe the influence of ‘catharsis large intestine' on matrix metalloproteinase 9(MMP-9), transforming growth factor-β (TGF-β), Smad3 mRNA and Smad7 mRNA from rats lung with chronic obstructive pulmonary disease(COPD), and to investigate the mechanism of ‘treating from intestine'. **Method:**The rat model of COPD was established by cigarette smoking combined with intratracheal injection of lipopolysaccharide(LPS). All rats were randomly divided into normal control group, model group, treating intestine group, treating lung group, treating lung and intestine group. The normal control group, model group were intragastrically given the 10 mL·kg^{-1}pure water solution, and other groups were intragastrically given corresponding herbal drugs (the charge for treating intestine group, treating lung group and treating lung and

intestine group were 1.50,4.25,5.75 g • kg^{-1}) for 14 days. The positive expression area ratio of MMP-9 and TGF-β were measured by immunohistochemical method, and the content of Smad3 mRNA and Smad7 mRNA were by Real time fluorescent quantitative PCR method from all groups of 40 rat's lung. **Result:**The model group of protein positive area ratios of MMP-9 and TGF-β became 1.231% and 3.002%, and the expression value of Smad3 mRNA was 14.804, and Smad7 mRNA was 0.2.The levels of MMP-9, TGF-β and Smad3 expression were markedly higher, while Smad7 expression were markedly lower, in the model group compared with those in the normal control group ($P<0.01$). The levels of MMP-9, TGF-β became 0.944% and 1.989%, both of them and Smad3 were all lower in the treating intestine group than those in model group,while Smad7 levels keep higher($P<0.05$ or $P<0.01$). The expression of TGF-β, Smad3 was lower but Smad7 expression grows up to 0.784 higher in the lung and intestine group than those in the lung group($P<0.01$). **Conclusion:** ‘Ceatharsislarge intestine' can have effects on airway remodeling of lung in rats with COPD.

keywords:chronic obstructive pulmonary disease Xuanbai Chengqi decoction treatment based on intestine airway remodeling

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