

doi: 10.13241/j.cnki.pmb.2017.09.035

## 舒普深联合左氧氟沙星治疗哮喘并发肺部感染的疗效分析

宋丽芹<sup>1</sup> 李 鑫<sup>2</sup> 郑 录<sup>3</sup> 王 赫<sup>3</sup> 商旭芳<sup>3</sup> 张 浩<sup>3</sup>

(1 辽宁省盘锦市中心医院呼吸科 辽宁 盘锦 124010;2 锦州医科大学附属第一院呼吸科 辽宁 锦州 121000;

3 辽宁省盘锦市中心医院呼吸二科 辽宁 盘锦 124010)

**摘要** 目的:研究舒普深联合左氧氟沙星治疗哮喘并发肺部感染的临床疗效。方法:选取2012年6月到2016年6月来我院治疗的哮喘合并肺部感染患者80例,按照患者入院时间将患者随机分为观察组(n=40)和对照组(n=40)。对照组采用舒普深治疗,观察组采用舒普深和左氧氟沙星联合治疗,两组患者均治疗2周,观察比较两组患者的治疗疗效、病原菌清除率以及肺功能的恢复情况。结果:观察组患者的总效率、病原菌清除率均较对照组总有效率显著提高,差异具有统计学意义(P<0.05)。与治疗前相比,两组患者治疗后的肺功能指标均显著提高,且观察组患者的肺功能指标较治疗组改善更显著。结论:舒普深联合左氧氟沙星治疗哮喘并发肺部感染临床疗效显著,可显著改善患者肺功能。

**关键词:**舒普深;哮喘;肺部感染;肺功能;病原菌清除率

中图分类号:R562.25;R563.1 文献标识码:A 文章编号:1673-6273(2017)09-1729-03

## Analysis of the Therapeutic Effect of Shu Pu Shen Combined with Levofloxacin in the Treatment of Pulmonary Infection in Patients with Asthma

SONG Li-qin<sup>1</sup>, LI Xin<sup>2</sup>, ZHENG Lu<sup>3</sup>, WANG He<sup>3</sup>, SHANG Xu-fang<sup>3</sup>, ZHANG Hao<sup>3</sup>

(1 Department of respiration, Central Hospital of Panjin City, Panjin, Liaoning, 121000, China;

2 Department of respiration, the First Affiliated Hospital of Jinzhou Medical University, Jinzhou, Liaoning, 124000, China;

3 The second department of respiration, Central Hospital of Panjin City, Panjin, Liaoning, 124010, China)

**ABSTRACT Objective:** To explore the therapeutic effect of Shu Pu Shen combined with levofloxacin in the treatment of pulmonary infection in patients with asthma. **Methods:** 80 patients with asthma complicated with pulmonary infection from June 2012 to June 2016 in our hospital were selected. They were randomly and equally divided into the observation group (n=40) and the control group(n=40). The control group was treated with Shu Pu Shen, and the treatment group was treated with Shu Pu Shen combined with levofloxacin. The curative effect, pathogenic bacteria clearance rate and recovery of pulmonary function were compared between the two groups after treatment for 2 weeks. **Results:** Compared with the control group, the total efficiency and pathogenic bacteria clearance rate in the observation group were significantly higher than those of the control group (P<0.05). The lung function indexes of both groups after treatment were significantly improved compared with those before treatment, and the lung function indexes of observation group were significantly better than those in the control group. **Conclusion:** Shu Pu Shen and levofloxacin had good clinical effect on asthma combined with pulmonary infection, which could significantly improve the lung function.

**Key words:** Shu Pu Shen; Asthma; Pulmonary infection; Pulmonary function; Pathogenic bacteria clearance rate

**Chinese Library Classification(CLC): R562.25; R563.1 Document code: A**

**Article ID:** 1673-6273(2017)09-1729-03

### 前言

哮喘是支气管哮喘的简称,是由多种细胞包括气道上皮细胞、中性粒细胞、肥大细胞、T 淋巴细胞、嗜酸性粒细胞等及其细胞内物质共同参与的气管内慢性炎症疾病<sup>[1]</sup>。哮喘常见的临床症状为喘息、气急、胸闷或咳嗽等,一般在夜间或清晨发作和加重<sup>[2,3]</sup>。哮喘的发病率较高,在全世界约有 3 亿人患有哮喘,而中国大约占 33%。其造成的经济和社会负担远超过艾滋病和肺结核的总和,且全球哮喘以每十年增加 50% 的速率递增,这主要是由于人们对哮喘的认识不足造成治疗的延误<sup>[4,5]</sup>。哮喘患

者容易并发肺部感染,研究显示肺部感染后可增加哮喘发作次数并使病情加重,病情加重后的哮喘患者又可加重肺部感染,这就形成恶性循环<sup>[7]</sup>。因而,对症治疗哮喘患者及降低哮喘患者的感染率十分重要。本研究拟探讨舒普深联合左氧氟沙星治疗哮喘并发肺部感染的治疗疗效,并对肺功能、病原菌清除率等指标进行评价。

### 1 材料与方法

#### 1.1 一般资料

选取2012年6月到2016年6月来我院治疗的哮喘合并肺部感染患者80例。按照患者入院时间随机将患者分为两组。对照组40例,其中男性24例,女性16例,年龄21-70岁,平均年龄(41.4±5.6)岁,病程1-24年,平均病程(12.3±5.6)年。观察

作者简介:宋丽芹(1968-),女,本科,副主任医师,主要研究方向:

呼吸科专业,E-mail: songliqin\_8155@163.com

(收稿日期:2016-12-07 接受日期:2016-12-26)

组患者 40 例,其中男性 25 例,女性 15 例,年龄 20-70 岁,平均年龄(40.9±6.7)岁,病程 1-26 年,平均病程(11.6±5.8)年。两组患者基线资料无统计学差异( $P>0.05$ ),具有可比性。所有患者均签署知情同意书,本研究所有内容均符合本院伦理委员会要求。

### 1.2 肺部感染诊断标准<sup>[8]</sup>

(1)体温超过 38 ℃且持续时长超过 24 h;(2)痰液增多且黏稠;(3)有咳嗽症状或咳嗽次数增多;(4)肺部啰音明显;(5)X 线胸片结果显示患者肺部有炎性症状;(6)血常规,C- 反应蛋白,降钙素等炎性指标均增高。符合以上标准中的(1)、(2)、(3)、(4)均得 1 分,符合(5)、(6)标准的为 3 分,累积≥4 分者,表明患有肺部感染。

### 1.3 治疗方法

对照组患者给予注射用头孢哌酮钠 - 舒巴坦钠(生产厂商:辉瑞制药有限公司,批准文号:国药准字 H10960113, 规格:1.0 g) 2.0 g, 静脉注射,一天两次。观察组在以上基础上联合盐酸左氧氟沙星(生产厂商:扬子江药业集团有限公司,批准文号:国药准字 H20060026, 规格:0.2 g/2 mL) 静脉注射,200 mg/ 次,一天两次。两组患者治疗疗程为 2 周。

### 1.4 临床疗效判定标准<sup>[9]</sup>

治愈:无临床哮喘的症状及体征,且肺炎性病变完全吸收,恢复完全;好转:临床哮喘症状及体征明显好转,肺炎性病变有吸收;无效:治疗后患者哮喘症状及肺炎各项观察指标未改变或加重。细菌学评价:在治疗前后对患者痰液进行细菌培养检查,发现同种细菌连续出现 2 次的则为病原菌。(1)清除:治疗结束后,标本经细菌培养检查后不存在任何病原菌;(2)部分清除:标本中原有的病原菌部分消失;(3)未清除:治疗结束后标本中的致病菌均未消失。

### 1.5 统计学分析

应用 SPSS 17.0 统计学方法对试验数据进行处理, 计量资料用均数± 标准差,采用 t 检验,计数资料用率表示,采用  $\chi^2$  检验,以  $P<0.05$  为差异具有统计学意义。

## 2 结果

### 2.1 两组临床疗效比较

观察组总有效率为 95.0 %, 显著高于对照组(77.5 %), 差异比较具有统计意义( $P<0.05$ ), 见表 1。

表 1 两组患者临床总疗效率比较[例(%)]

Table 1 The comparison of total curative effects between two groups[n(%)]

| Groups            | Number | Cure     | Improve  | Inefficiency | Total      |
|-------------------|--------|----------|----------|--------------|------------|
| Control group     | 40     | 13(32.5) | 18(45.0) | 9(22.5)      | 31(77.5)   |
| Observation group | 40     | 16(40.0) | 22(55)   | 2(5.0)       | 38(95.0) * |

Note: Compared with the control group, \* $P<0.05$ .

### 2.2 两组治疗前后肺功能指标比较

治疗前,两组患者的肺功能进行比较差异无统计学意义( $P>0.05$ );治疗后,两组患者的 VC 无明显变化 ( $P>0.05$ ),而

FEV1、FEV1/FVC 以及 PEF pred % 较治疗前均有显著升高( $P<0.05$ ),且观察组肺功能改善更显著,与对照组相比差异具有统计学意义( $P<0.05$ ),见表 2。

表 2 两组治疗前后肺功能指标比较(± s)

Table 2 The comparison of lung function indexes between two groups before and after treatment(± s)

| Groups            | Time             | Number | VC(L)      | FEV1(L)      | FEV1/FVC(%)   | PEF pred %    |
|-------------------|------------------|--------|------------|--------------|---------------|---------------|
| Control group     | Before treatment | 40     | 1.61± 0.46 | 1.49± 0.31   | 49.34± 3.46   | 64.23± 5.32   |
|                   | After treatment  |        | 1.67± 0.37 | 2.63± 0.23*  | 64.32± 4.67*  | 77.67± 9.43*  |
| Observation group | Before treatment | 40     | 1.62± 0.65 | 1.52± 0.46   | 47.89± 5.34   | 63.78± 5.12   |
|                   | After treatment  |        | 1.71± 0.28 | 3.21± 0.31** | 76.28± 4.91** | 83.64± 8.12** |

Note: Compared with before treatment, \* $P<0.05$ ; Compared with the control group, \*\* $P<0.05$ .

### 2.3 两组病原菌清除率比较

两组患者中检出有病原菌的患者共 58 例,其中观察组 30

例,对照组 28 例。治疗结束后复查,观察组病原菌清除率显著高于对照组(93.3 % vs. 71.4 %) ( $P<0.05$ ),见表 3。

表 3 两组患者病原菌清除率比较[例(%)]

Table 3 The comparison of pathogenic bacteria clearance rate between two groups[n(%)]

| Groups            | Number | <i>Staphylococcus epidermidis</i> | <i>Pseudomonas aeruginosa</i> | <i>Cloacae</i> | <i>Streptococcus pneumoniae</i> | <i>Klebsiella pneumoniae</i> | <i>Bacillus influenzae</i> | <i>Escherichia coli</i> | Total     |
|-------------------|--------|-----------------------------------|-------------------------------|----------------|---------------------------------|------------------------------|----------------------------|-------------------------|-----------|
| Observation group | 30     | 2(6.7)                            | 2(6.7)                        | 2(6.7)         | 10(33.3)                        | 5(16.7)                      | 4(13.3)                    | 3(10)                   | 28(93.3)* |
| Control group     | 28     | 2(7.1)                            | 1(3.6)                        | 1(3.6)         | 6(21.4)                         | 4(14.3)                      | 4(14.3)                    | 2(7.1)                  | 20(71.4)  |

Note: Compared with the control group, \* $P<0.05$ .

## 3 结论

支气管哮喘是一种常见的呼吸性炎症反应性疾病,具有易

反复发作,季节性的特点。哮喘的反复发作给患者生活和心理上带来严重的不良影响,会使患者产生紧张、焦虑等消极情绪,影响患者生活质量,严重者因支气管痉挛产生窒息会给患者生

命造成威胁<sup>[10-12]</sup>。因此,应对支气管哮喘采取积极的治疗。哮喘急性发作期间气道反应性增高,会造成支气管水肿、气道表皮细胞损伤或脱落,为微生物的生存和繁殖创造了条件,微生物繁殖易引发肺部感染<sup>[13,14]</sup>。肺部感染是支气管哮喘主要并发症之一<sup>[15]</sup>。支气管哮喘患者肺部感染后会使气道分泌的痰液量增加,并聚集在呼吸道内,使患者呼吸困难从而加重哮喘的症状,如此形成恶性循环<sup>[16]</sup>。因此,对于哮喘合并肺部感染的患者进行治疗时,应合理选择适当的抗生素类药物。

舒普深是由头孢哌酮钠与舒巴坦钠以1:1的比例配置的一种复合制剂,通用名为头孢哌酮钠-舒巴坦钠,是一类一线广谱抗生素,尤其对肺炎克雷伯菌、肺炎链球菌、绿脓杆菌、大肠杆菌、葡萄球菌等具有良好的抗菌性,且副作用少<sup>[17]</sup>。舒巴坦钠是一种β-内酰胺酶抑制剂,通过对细菌产生不可逆的β-内酰胺酶的抑制作用,从而克服多数细菌的产酶耐药性<sup>[18]</sup>。头孢抗菌活性较强,但稳定性弱,与舒巴坦钠联合后,可增强其稳定性和抗菌活性<sup>[19]</sup>。左氧氟沙星是临床常用的抗菌类药物,属于喹诺酮类药物,其可抑制病原菌DNA的合成与复制,可有效抑制其生长,抗菌能力强<sup>[20]</sup>。本研究采用舒普深联合左氧氟沙星治疗哮喘合并肺部感染患者,结果显示患者治疗后的肺功能指标明显改善,患者的临床总有效率为95%,病原菌总清除率为93.3%。均显著高于单用舒普深治疗。这提示舒普深可有效提高哮喘并发肺部感染的临床疗效。

综上所述,采用舒普深联合左氧氟沙星治疗哮喘合并肺部感染患者,临床效果显著且安全性高,可显著改善患者的哮喘症状,对患者的预后及生活质量的提高有着重要意义。

#### 参 考 文 献(References)

- [1] Mogami R, Goldenberg T, de Marca PG, et al. Pulmonary infection caused by Mycobacterium kansasii: findings on computed tomography of the chest[J]. Radiol Bras, 2016, 49(4): 209-213
- [2] He GL, Chang YJ, Xu LP, et al. Impact of pre-transplant pulmonary infection developed in horizontal laminar flow unit on the outcome of subsequent allogeneic hematopoietic stem cell transplantation [J]. J Thorac Dis, 2016, 8(8): 2219-2225
- [3] Ramsay KA, Sandhu H, Geake JB, et al. The changing prevalence of pulmonary infection in adults with cystic fibrosis: A longitudinal analysis[J]. J Cyst Fibros, 2016, 3(16): 30567
- [4] Thomson NC. Novel approaches to the management of noneosinophilic asthma[J]. Ther Adv Respir Dis, 2016, 10(3): 211-234
- [5] Ritchie AI, Farne HA, Singanayagam A, et al. Pathogenesis of Viral Infection in Exacerbations of Airway Disease [J]. Ann Am Thorac Soc, 2015, 12(Suppl 2): S115-32
- [6] Truong T. The overlap of bronchiectasis and immunodeficiency with asthma[J]. Immunol Allergy Clin North Am, 2013, 33(1): 61-78
- [7] Okada F, Ando Y, Tanoue S, et al. Radiological findings in acute Haemophilus influenzae pulmonary infection [J]. Br J Radiol, 2012, 85(1010): 121-126
- [8] Garbutt JM, Patterson D, Gehlert S, et al. Insights from parents can guide asthma care for urban, minority children [J]. J Allergy Clin Immunol Pract, 2016
- [9] Pan T, Liu X, Xiang S, et al. Treatment for patients with multidrug resistant Acinetobacter baumannii pulmonary infection [J]. Exp Ther Med, 2016, 11(4): 1345-1347
- [10] Nair P. Nontubercular mycobacterial pulmonary infection in severe asthma[J]. Chest, 2011, 139(3): 721
- [11] Haste L, Hulland K, Bolton S, et al. Development and characterization of a long-term murine model of Streptococcus pneumoniae infection of the lower airways[J]. Infect Immun, 2014, 82(8): 3289-3298
- [12] Virchow JC, Rodriguez-Roisin R, Papi A, et al. A randomized, double-blinded, double-dummy efficacy and safety study of budesonide-formoterol Spiromax® compared to budesonide-formoterol Turbuhaler® in adults and adolescents with persistent asthma [J]. BMC Pulm Med, 2016, 17(16): 42
- [13] Román-Rodríguez M, Pardo MG, López LG, et al. Enhancing the use of Asthma and COPD Assessment Tools in Balearic Primary Care (ACATIB): a region-wide cluster-controlled implementation trial[J]. NPJ Prim Care Respir Med, 2016, 10(26): 16003
- [14] Wen Xi-mao, Ren Nan, Wu An-hua, Xu Xiu-hua. Distribution of pathogens causing nosocomial infection monitored by national nosocomial infection surveillance system and changing trend [J]. Chinese Journal of Nosocomiology, 2011, 21(2): 350-355
- [15] Xin Jin-shen. Monitoring and analysis of bacterial resistance in the department of respiratory in Guangdong Chinese Medicine Hospital between 2008 to 2010[J]. Pharmacy Today, 2012, 22(5): 303-305
- [16] Lou Mei-ping, Lin Ping. The Drug resistance of Klebsiella pneumoniae and Escherichia coli from community and hospital infection [J]. Chinese Journal of Microecology, 2012, 24(2): 167-169
- [17] Yu Ji-cheng, Zhang Jing, Cao Guo-ying, et al. Pharmacokinetics of single and multiple 500 mg doses of intravenous levofloxacin in healthy volunteers [J]. Chinese Journal of Infection and Chemotherapy, 2010, 3(10): 176-181
- [18] Kuang Hai-yan, Hu Chun-xia, ZHOU Xiao-fei, et al. Clinical Efficacy of Cefoperazone/sulbactam in the Treatment of Infection in Obstetrics and Gynecology [J]. Progress in Modern Biomedicine, 2013, 13(30): 5916-5918
- [19] Dai Wei. Clinical application of Cefoperazone Sodium and Sulbactam Sodium [J]. Chinese Journal of Clinical Rational Drug Use, 2012, 5(1): 39-40
- [20] Mu Yan-ping, Wang Li-qing, Deng Xun, et al. clinical efficacy and cost-effectiveness analysis for Moxifloxacin with cefoperazone sodium/tazobactam sodium in the treatment of genitourinary infection [J]. Journal of practical medicine, 2012, 28 (2): 287-289