doi: 10.13241/j.cnki.pmb.2014.30.044

美罗培南不同输注方案治疗老年 ICU 获得性重症肺炎的临床研究

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摘要 目的:探讨美罗培南不同输注方案治疗老年 ICU 获得性重症肺炎的临床效果。**方法:**选取 2011 年 6 月至 2014 年 1 月我院的 92 例老年 ICU 获得性重症肺炎患者,随机分为传统组和改良组,每组各 46 例,分别采用不同的输注速度给予美罗培南治疗,并且对其总有效率、细菌学疗效进行评定,观察记录患者的不良反应情况、住院时间及抗菌药物的治疗费用。**结果:**改良组患者的总有效率为 82.61%,显著高于传统组的 67.39%(P<0.05);改良组患者的细菌学疗效明显优于传统组(P<0.05);改良组患者的治疗时间为(5.94± 1.21)d,明显低于传统组的(7.52± 1.47)d(P<0.05);改良组患者的治疗费用为(3412.7± 992.4)元,相比于传统组的(3983.5± 1022.6)元明显降低,差异均有统计学意义(P<0.05)。两组患者分别有 3 例出现不良反应,其中,4 例出现腹泻,2 例出现恶心,但患者均能够耐受,停药后腹泻、恶心症状消失,差异无统计学意义(P> 0.05)。**结论:**美罗培南治疗 ICU 获得性重症肺炎在提高临床治疗效果、减轻患者的炎症反应、缩短治疗时间,在一定程度上能够降低患者的经济负担方面具有显著的优越性。

关键词:美罗培南;ICU 获得性重症肺炎;老年

中图分类号:R563.1 **文献标识码:**A **文章编号:**1673-6273(2014)30-5963-03

Clinical Studies of Different Infusion Regimens of Meropenem in Elderly ICU-Acquired Severe Pneumonia

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ABSTRACT Objective: To explore the clinical effects of different meropenem infusion regimens in elderly ICU-acquired severe pneumonia. **Methods:** 92 cases of elderly patients with ICU-acquired severe pneumonia in our hospital from June 2011 to January 2014 were randomly divided into traditional group and improved group, with 46 cases in each group. Two groups of patients were given different rates of meropenem infusion, and the total efficiency, bacteriological efficacy were evaluated, and the adverse reactions, length of stay, antimicrobial treatment costs were observed and recorded in two groups. **Results:** The total efficiency of the improved group was 82.61%, significantly higher than that of the traditional group (67.39%) (P<0.05); The improved group was significantly better than traditional group in the bacteriological efficacy (P<0.05); Length of stay and antimicrobial treatment costs in improved group were (5.94± 1.21) d and (3412.7± 992.4) million yuan, significantly lower than those of the traditional group (7.52± 1.47) d; (3983.5± 1022.6) million (all P<0.05). There were 3 cases with adverse reactions in each group, including 4 cases of diarrhea and 2 cases of nausea, which could be tolerated by patients. These adverse reactions which had no significant difference (P> 0.05) disappeared after the stop of medication. **Conclusion:** Meropenem presents significant advantages in improving clinical outcomes in ICU acquired severe pneumonia, and can reduce inflammation in patients, shorten the treatment time, have the distinct advantages to reduce the economic burden of patients.

Key words: Meropenem; ICU-acquired severe pneumonia; Elderly

Chinese Library Classification(CLC): R563.1 Document code: A

Article ID: 1673-6273(2014)30-5963-03

前言

老年 ICU 获得性重症肺炎近年来的发病率随着人口老龄化的程度的加深而表现出增高的趋势,老年患者合并有多种基础性疾病,免疫功能低下,加之侵袭性诊疗措施的应用,使得患者在 ICU 中容易获得重症肺炎,且感染以多药耐药菌为主,病程常迁延不愈,临床治疗相当棘手,直接关系到老年患者的生命及健康[1-3]。美罗培南属于第二代碳青霉烯类抗菌药,在治疗 ICU 获得性重症肺炎中具有重要的临床作用,但不同的输注方案具有不同的疗效[4-6]。我院通过对比两种不同输注方案的临床效果及安全性,旨在为临床治疗方案的选择提供有效依据。现将研究情况报道如下。

1 资料与方法

1.1 临床资料

选取 2011 年 6 月至 2014 年 1 月我院的 92 例老年 ICU 获得性重症肺炎患者,所有患者的诊断均符合院内获得性重症肺炎的相关诊断标准[7]。将患者随机分为传统组和改良组,每组各 46 例,两组患者在年龄、性别、急性生理功能和慢性健康状

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(收稿日期:2014-04-11 接受日期:2014-05-10)

况评分系统Ⅱ（acute physiology and chronic health evaluation Ⅱ，APACHEⅡ）[8]以及基础性疾病等情况相比较，差异无统计学意义（P>0.05）。具有可比性。见表 1。

表 1 两组患者基本临床资料情况比较

Table 1 Comparison of basic clinical data between two groups

指标 Indexes	性别 Gender	年龄(岁) Age (years)	APACHEⅡ	基础性疾病 Basic diseases				
				肺部疾病 Lung disease	冠心病 Coronary heart disease	脑血管病 Cerebral vascular disease	糖尿病 Diabetes mellitus	恶性肿瘤 Malignant tumor
改良组(n=46) Improved group(n=46)	24/22	86.88± 7.46	22.31± 4.75	28(60.87)	19(41.30)	14(30.43)	9(19.57)	5(10.87)
传统组(n=46)Traditional group(n=46)	23/23	86.29± 6.41	21.83± 4.36	26(56.52)	16(34.78)	16(34.78)	10(21.74)	5(10.87)
X^2/t	1.895	1.931	1.822	1.597	1.511	1.643	1.732	1.957
P	0.084	0.061	0.089	0.153	0.168	0.126	0.094	0.052

1.2 方法

两组患者均采取深圳海滨制药有限公司提供的美罗培南进行治疗，传统组每次给药 0.5g，每 6 h 给药 1 次，采用微量推注泵 2h 推注完毕；改良组每次推注时间为 4 h。治疗前及治疗后观察患者的症状、临床体征以及不良反应情况，并进行血液常规检查、微生物学检查、床边胸部 X 线检查等，记录患者的治疗时间及经济支出情况。

1.3 评价指标

1.3.1 **疗效评价** 痊愈：症状以及体征、微生物学检查、化验检查等均完全恢复至正常水平；显效：有 3 项恢复至正常水平；进步：治疗后患者病情有所好转，但恢复不甚明显；无效：治疗后患者病情并未发生好转，甚至出现加重。总有效率为痊愈率与显效率之和。

1.3.2 **细菌学疗效评价** 治疗前后均对患者进行细菌分离鉴定以及药敏试验。细菌学疗效评价分为完全或者部分清除、未清除、菌交替等 4 个标准。

1.4 统计学处理

计量资料以平均值± 标准差（$\bar{x}$± s）表示，计数资料以例和率表示。将所得数据导入 SPSS15.0 软件进行分析，计量资料采用 t 检验，计数资料采用 X^2 检验，以 P＜0.05 作为有统计学差异的标准。

2 结果

2.1 疗效比较

改良组患者的总有效率为 82.61%，显著高于传统组的 67.39%，差异有统计学意义（P<0.05）。详见表 2。

表 2 两组患者不同输注方案疗效比较[n(%)]

Table 2 Comparison of the effect of different infusion regimens between two groups[n(%)]

指标 Indexes	痊愈 Recovery	显效 Excellence	进步 Progress	无效 Invalid	总有效率 Total efficiency
改良组(n=46) Improved group(n=46)	7(15.22)	31(67.39)	7(15.22)	1(2.17)	82.61*
传统组(n=46)Traditional group(n=46)	5(10.87)	26(56.52)	9(19.57)	6(13.04)	67.39

Note：*P<0.05.

2.2 细菌学疗效比较

改良组患者的细菌学疗效明显优于传统组，差异有统计学意义（P<0.05）。详见表 3。

表 3 两组患者不同输注方案细菌学疗效比较[n(%)]

Table 3 Comparison of bacteriological efficacy of different infusion regimens between two groups [n(%)]

指标 Indexes	清除 Clearance	部分清除 Fractional clearance	未清除 Undeclared	菌交替 Bacteria alternately
改良组(n=46) Improved group(n=46)	32(69.57)*	10(21.74)*	3(6.52)*	1(2.17)*
传统组(n=46)Traditional group(n=46)	24(52.17)	6(13.04)	6(13.04)	10(21.74)
X^2	10.047	9.182	9.725	13.224
P	0.000	0.000	0.000	0.000

2.3 不良反应的情况比较

两组患者分别有 3 例出现不良反应，其中，4 例出现腹泻，2 例出现恶心，但患者均能够耐受，停药后腹泻、恶心症状消失。

2.4 治疗时间及治疗费用比较

改良组患者的治疗时间为(5.94± 1.21)d,明显低于传统组的(7.52± 1.47)d;改良组患者的治疗费用为(3412.7± 992.4)元,相比于传统组的(3983.5± 1022.6)元明显降低。差异均有统计学意义(P<0.05)。见表 4。

表 4 两组患儿不良反应的发生情况比较($\bar{x}\pm s$)

Table 4 Comparison of adverse reactions between two groups ($\bar{x}\pm s$)

指标 Indexes	例数 Number	治疗时间(d) Treatment time(d)	治疗费用(元) Treatment costs(yuan)
改良组(n=46) Improved group(n=46)	46	5.94± 1.21	3412.7± 992.4
传统组(n=46)Traditional group(n=46)	46	7.52± 1.47	3983.5± 1022.6
t		8.475	9.294
P		0.000	0.000

3 讨论

ICU 老年患者往往合并有多项基础性疾病,病情比较危重复杂,患者的免疫功能明显降低,加之患者的营养状况差,在诊疗过程中,多采用侵袭性的操作,使得患者容易反复感染,且炎症反应多涉及多个脏器,导致多个脏器发生功能衰竭,甚至是死亡[9-12]。广谱抗菌药物的反复应用,使得患者比较容易检出多药耐药菌, 因此早期采取有效的抗菌药物进行治疗至关重要,能够有助于缩短治疗时间,提高治疗效果,改善患者的预后。有学者认为,对于多药耐药菌感染,根据药敏试验结果合理选择抗菌药物治疗,充分发挥药物的效能,是十分必要和重要的[13-15]。我院研究结果显示,ICU 获得性肺炎的病原菌多为铜绿假单胞菌和鲍氏不动杆菌等多药耐药菌,因此,抗菌药物应当首选碳青霉烯类。

美罗培南作为具有时间依赖性的第二代碳青霉烯类抗菌药,在治疗 ICU 获得性重症肺炎中具有重要的临床作用,但不同的输注方案具有不同的疗效[16-18]。有研究[19]认为,连续输注或者将输注时间延长能够有效的提高其临床效果。连续给予美罗培南的效果由于间断给药。亦有研究[20]证明,美罗培南溶液在常温的条件下能够维持 4 h 的稳定性,这为美罗培南的临床应用提供了重要的参考价值。在本研究中,我院采用不同的输注速度给予美罗培南治疗,结果显示,改良组患者的总有效率及细菌学疗效均显著优于传统组,说明,美罗培南每次给药 0.5 g,每 6 h 给药 1 次, 采用微量推注泵 2 h 推注完毕的临床效果更佳,能够有效的改善患者的症状,减轻患者的炎症反应。并且,两组患者分别有 3 例出现不良反应, 其中,4 例出现腹泻,2 例出现恶心,但患者均能够耐受,停药后腹泻、恶心症状消失。未发现有神经系统并发症出现。说明采用低剂量给予美罗培南治疗临床应用亦是比较安全的。结果显示,改良组患者的治疗时间为(5.94± 1.21)d,明显低于传统组的(7.52± 1.47)d;改良组患者的治疗费用为 (3412.7± 992.4) 元, 相比于传统组的(3983.5± 1022.6)元明显降低。差异均有统计学意义(P<0.05)。这与美罗培南治疗院内获得性重症肺炎能够有效的发挥其抗菌疗效,并且不会导致更多的多药耐药菌产生有关。

综上所述,美罗培南治疗院内获得性重症肺炎在提高临床治疗效果、减轻患者的炎症反应、缩短治疗时间,在一定程度上能够降低患者的经济负担方面具有显著的优越性。

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