

恶性肿瘤患者鲍曼不动杆菌感染的现患率调查及耐药性分析^{*}

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【摘要】 目的 探讨恶性肿瘤患者鲍曼不动杆菌感染的现患率及细菌耐药性, 为临床预防和诊治提供参考。**方法** 选取恶性肿瘤患者 691 例, 取痰液、咽拭子、穿刺液及尿液作为标本检测鲍曼不动杆菌, 并通过纸片扩散法行耐药性分析。**结果** 691 例患者取不同部位标本 1 355 份, 分离得到 52 株鲍曼不动杆菌, 检出率为 3.84%, 感染率为 7.53%。其中男性和女性患者现患率分别为 7.80% 和 7.21%, 差异无统计学意义($P>0.05$)。 ≥ 60 岁恶性肿瘤患者现患率为 9.09%, <60 岁患者为 4.13%, 差异有统计学意义($P<0.05$)。肺癌、大肠癌患者鲍曼不动杆菌现患率分别为 10.06% 和 9.12%, 明显多于其他部位肿瘤患者。痰液标本鲍曼不动杆菌检出率为 5.93%, 明显多于其他类型标本($P<0.05$)。52 株鲍曼不动杆菌对头孢唑林耐药率达到 100.00%, 对头孢呋辛、头孢曲松和庆大霉素的耐药率也较高, 分别为 88.46%、82.69% 和 78.85%; 对多黏菌素耐药率最低, 仅 1.92%, 此外对美罗培南和亚胺培南的耐药性较低, 分别为 11.54% 和 17.31%。**结论** 不同年龄、不同原发肿瘤的患者其鲍曼不动杆菌感染现患率存在差异。在临床工作中应减少患者的侵入性操作, 并规范使用抗菌药物, 根据药敏试验结果选择敏感药物, 控制耐药菌株产生。

【关键词】 恶性肿瘤; 鲍曼不动杆菌; 耐药性

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【Abstract】 Objective To study the prevalence rate of Acinetobacter baumannii infection in the patients with malignant tumor and the drug resistance to provide reference for clinical prevention and treatment. **Methods** 691 cases of malignant tumor were selected. Sputum, pharynx swabs, puncture fluid and urine were collected as specimens for detecting Acinetobacter baumannii, and the drug resistance analysis was performed by using the disk diffusion method. **Results** 1 355 samples were taken from different parts in 691 patients, 52 strains of Acinetobacter baumannii were isolated with the detection rate of 3.84% and the infection rate of 7.53%. The prevalence rates of males and females were 7.80% and 7.21% respectively, the difference was not statistically significant ($P>0.05$). The prevalence rate in malignant tumor patients aged ≥ 60 years old was 9.09%, which in the patients aged <60 years old was 4.13%, the difference was statistically significant ($P<0.05$). The prevalence rates of Acinetobacter baumannii in lung cancer and colorectal cancer were 10.06% and 9.12% respectively, which were significantly higher than those in other parts of tumor. The detection rate of Acinetobacter baumannii was 5.93% in sputum specimens, which was significantly higher than that in the other specimens, the difference was statistically significant ($P<0.05$). The resistant rate in 52 strains of Acinetobacter baumannii to cefazolin reached 100.00%, which to cefuroxime, ceftriaxone and gentamicin were higher and were 88.46%, 82.69% and 78.85% respectively; the resistant rate to polymyxine was lowest, only 1.92%, in addition, the resistant rates to meropenem and imipenem were lower, which were 11.54% and 17.31% respectively. **Conclusion** The prevalence rates of Acinetobacter baumannii exists in different ages and different primary tumors. The the clinical work, the invasive operations in the patients should be reduced. The antibacterial drugs should be normally used, and the sensitive antibacterial drugs should be selected according to the drug susceptibility test for controlling the generation of drug-resistant strains.

【Key words】 malignant tumor; Acinetobacter baumannii; drug resistance

鲍曼不动杆菌在自然界和人体皮肤表面广泛分布, 是重要的条件致病菌, 也是医院感染的重要病原菌之一^[1]。近年来, 随着抗菌药物不合理应用的增加, 鲍曼不动杆菌的耐药菌株越来越多, 给治疗增加了难度。特别是恶性肿瘤患者, 由于机体免疫力下降, 更容易发生感染^[2]。本研究回顾了 2013 年

9 月至 2014 年 9 月期间本院收治的恶性肿瘤, 对鲍曼不动杆菌感染的现患率进行统计, 并进行了耐药性分析, 现报道如下。

1 资料与方法

1.1 一般资料 2013 年 1 月至 2014 年 12 月本院收治的恶性肿瘤患者 691 例, 所有患者均经影像学检查及病理学检查确诊

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为恶性肿瘤。年龄 38~77 岁,平均(61.84±4.82)岁。所有患者入院时均排除感染,且排除原发肿瘤脏器外其他脏器严重疾病。其中男 372 例(53.84%),女 319 例(46.16%);60 岁以下者 218 例(31.55%),60 岁及 60 岁以上者 473 例(68.48%);肺癌 318 例(46.02%),大肠癌 147 例(21.27%),胃癌 93 例(13.46%),肝癌 85 例(12.30%),其他恶性肿瘤 48 例(6.95%)。

1.2 方法 采用法国生物梅里埃公司生产的 VITEK-32 全自动细菌鉴定系统对菌株鉴定,并采用纸片扩散法对鲍曼不动杆菌的耐药性进行检测。剔除同一患者不同时间或不同部位培养出的同一重复菌株。所有药敏纸片均为英国 Oxoid 公司产品;MH 琼脂培养基为法国生物梅里埃公司产品;采用卫生部临检中心提供的铜绿假单胞菌 ATCC27853 和大肠埃希菌 ATCC25922 作为质控菌株。定期对培养基、染液、药物敏感试剂等进行质控。

1.3 统计学处理 采用 SPSS13.0 软件进行分析,计量资料比较采用 *t* 检验,计数资料比较采用 χ^2 检验,以 $P<0.05$ 为差异有统计学意义。

2 结 果

2.1 鲍曼不动杆菌检出情况 691 例患者取不同部位标本共 1 355 份,分离得到 52 株鲍曼不动杆菌,检出率为 3.84%,感染率为 7.53%。其中男性和女性患者现患率分别为 7.80%和 7.21%,差异无统计学意义($P>0.05$)。≥60 岁的恶性肿瘤患者现患率为 9.09%,<60 岁患者的现患率为 4.13%,两组比较差异有统计学意义($P<0.05$)。肺癌、大肠癌患者鲍曼不动杆菌现患率分别为 10.06%和 9.12%,明显高于肝癌、胃癌和其他恶性肿瘤患者($P<0.05$)。痰液标本中鲍曼不动杆菌检出率为 5.93%,明显多于其他类型的标本($P<0.05$)。见表 1。

表 1 鲍曼不动杆菌现患率及分布构成比						
项目	<i>n</i>	鲍曼不动 杆菌(<i>n</i>)	现患率 (%)	构成比 (%)	χ^2	<i>P</i>
性别	男	372	29	7.80	1.032	0.816
	女	319	23	7.21		
年龄	<60 岁	218	9	4.13	3.481	0.022
	≥60 岁	473	43	9.09		
恶性肿瘤	肺癌	318	32	10.06	1.935	0.035
	大肠癌	147	9	9.12		
	胃癌	93	5	5.38		
	肝癌	85	4	4.71		
	其他	48	2	4.17		
标本类型	痰液	691	41	5.93	1.553	0.039
	咽拭子	416	6	1.44		
	穿刺抽液	131	3	2.29		
	尿液	117	2	1.71		

2.2 耐药性分析 52 株鲍曼不动杆菌对头孢唑林耐药率达到 100.00%,对头孢呋辛、头孢曲松和庆大霉素的耐药率也较高,分别为 88.46%、82.69%和 78.85%;对多黏菌素耐药性最低,仅 1.92%,此外对美罗培南和亚胺培南的耐药率较低,分别为 11.54%和 17.31%。见表 2。

表 2 52 株鲍曼不动杆菌对抗菌药物的耐药率		
抗菌药物	耐药菌株(<i>n</i>)	耐药率(%)
阿米卡星	29	55.77
氮苄西林/舒巴坦	27	51.92
头孢唑林	52	100.00
头孢呋辛	46	88.46
头孢哌酮/舒巴坦	24	46.15
头孢噻肟	38	73.08
头孢他啶	37	71.15
头孢曲松钠	43	82.69
环丙沙星	33	63.46
庆大霉素	41	78.85
亚胺培南	9	17.31
美罗培南	6	11.54
哌拉西林/他唑巴坦	18	34.62
头孢吡肟	12	23.08
复方磺胺甲噁唑	38	73.08
氨基曲南	36	69.23
多黏菌素	1	1.92

3 讨 论

鲍曼不动杆菌是一种不发酵糖类、无动力革兰阴性菌,广泛分布于自然界中,在潮湿和干燥环境下容易生存,是临床常见的条件致病菌^[3]。恶性肿瘤患者由于机体免疫力下降,给鲍曼不动杆菌的感染提供了有利条件,可导致呼吸道、泌尿道等系统感染,甚至引起菌血症和脑膜炎等,而危及患者生命^[4]。随着抗菌药物不合理应用的增加,鲍曼不动杆菌的耐药性也日益严重,给临床治疗带来难度,也相应地增加了患者的危险^[5]。

本研究对 691 例肿瘤患者感染鲍曼不动杆菌情况进行了统计。取患者痰液、咽拭子、穿刺液及尿液作为标本进行检测,1 355 份标本共分离得到鲍曼不动杆菌 52 株,检出率为 3.84%,现患率为 7.53%。而且不同性别的学生其鲍曼不动杆菌的现患率差别不大,≥60 岁的学生现患率为 9.09%,明显高于 60 岁以下的学生,这是因为随着年龄的增长,患者可合并多脏器功能减退,机体免疫力也相应下降,更容易出现感染^[6]。本研究中,不同原发癌症患者鲍曼不动杆菌的现患率存在较大差异,其中肺癌和大肠癌患者的现患率分别为 10.06%和 9.12%,而胃癌、肝癌及其他恶性肿瘤的现患率分别为 5.38%、4.71%和 4.17%,肺癌和大肠癌患者的现患率更高。这是因为肺部环境具有良好的温度和湿度,且富氧,最有利于鲍曼不动杆菌生长,而肺癌患者肺部组织结构被破坏,局部免疫力下降,更容易发生感染^[7];此外,恶性肿瘤患者卧床时间较长,容易出现坠积性肺炎。不同部位的标本中以痰液标本的鲍曼不动杆菌检出率最高,为 5.93%,也说明该病原菌以呼吸道感染最为常见。恶性肿瘤患者常需要进行气管插管、人工呼吸等有创操作,进一步破坏了呼吸道的防御屏障,给病原菌的入侵提供了条件^[8]。因此对于恶性肿瘤,特别是肺癌患者,应尽量减少侵入性操作,避免由此增加感染的风险。

在对 52 株鲍曼不动杆菌耐药性进行分析时发现,这些病原菌对头孢唑林耐药性达到 100.00%,此外对头孢呋辛、头孢曲松和庆大霉素的耐药性也较高,分别为 88.46%、82.69%和 78.85%。鲍曼不动杆菌对头孢菌素类药物的耐药性较高,与其可以产生多种灭活酶,导致外膜蛋白缺失有关^[9],在治疗时应尽量予以避免这些药物的应用。本研究中 52 株鲍曼不动杆菌中仅有 1 株对多黏菌素耐药,耐药率仅 1.92%,但是多黏菌素具有较大的肾毒性,在临床应用时会受到一定的限制,尤其是恶性肿瘤患者,可合并多脏器功能障碍,对于肾功能不良者

应禁用^[10]。鲍曼不动杆菌对美罗培南和亚胺培南的耐药性也较低,分别为 11.54% 和 17.31%,因此这 2 种药物可以作为治疗鲍曼不动杆菌的常规药物。

总之,恶性肿瘤患者感染鲍曼不动杆菌的现患率为 7.53%,不同年龄、不同原发肿瘤的患者其现患率存在差异。在临床工作中应减少患者的侵入性操作,并规范使用抗菌药物,根据药敏试验结果选择敏感药物,控制耐药菌株产生。

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抗病毒药物或治疗手段提供了新的分子基础或靶点。

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