

葡萄球菌属对常用抗生素耐药情况调查

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摘要 目的 了解葡萄球菌属特别是耐甲氧西林葡萄球菌渊MRS冤的耐药情况袁为临床用药提供参考遥方法 从 2002 年 1~7 月送检的住院病人的血袁痰袁脓液分泌物等标本中分离出的金黄色葡萄球菌袁表皮葡萄球菌及其他血浆凝固酶阴性的葡萄球菌共 105 株袁并进行药敏和多重耐药分析遥结果 MRS 的分离率较高袁为 68.6% 袁耐甲氧西林金黄色葡萄球菌渊MRSA 冤为 69.2% 袁耐甲氧西林表皮葡萄球菌渊MRSE 冤为 63.3% 遥MRS 较非耐甲氧西林葡萄球菌渊MSS 冤耐药率明显高袁且 MRS 比 MSS 多重耐药率高得多 袁MRSA 对四种不同作用机制的抗生素渊泰能尧阿米卡星尧环丙沙星尧复方新诺明冤具有很高的多重耐药率袁达到 50% 以上遥结论 鉴于 MRS 的高分离率和多重耐药率袁在治疗感染性疾病时袁应加强病原学检查袁提高标本鉴定的阳性率 袁在有效的治疗 MRS 感染的同时还应注意遏制 MRS 的产生遥

关键词 葡萄球菌 耐甲氧西林葡萄球菌 抗生素 耐药率

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Survey on drug resistance of Staphylococcus to commonly used antibiotics

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Abstract: Objective To obtain primary knowledge of drug resistance of Staphylococcus, especially methicillin-resistant Staphylococcus (MRS), so as to facilitate clinical decision over the choice of appropriate antibiotics. Methods A total of 105 strains of Staphylococcus aureus, Staphylococcus epidermidis and other coagulase-negative Staphylococcus, were isolated from blood, sputum, pus and secretions sample from in-patients of Nanfang Hospital from January to July, 2002, and their status of drug-resistance was examined. Results MRS was isolated from 68.8% of the samples, and 69.6% of these isolates were methicillin-resistant Staphylococcus aureus (MRSA) and 63.3% resistant Staphylococcus epidermidis (MRSE). The rate of multi-drug resistance for MRS was much higher than that for methicillin-susceptible Staphylococcus (MSS), and MRSA showed high multidrug resistance rates (all >50%) to the antibiotics erythromycin, imipenem, amikacin, SXT, ciprofloxacin, which fell into 4 categories according to their different antibiotic mechanisms. Conclusion The prevalence and high MDR rate of MRS isolated from the samples suggest that in cases of infection, identification of the pathogenic bacterium should be routinely performed. Besides controlling MRS infection, importance should also be given to its prevention.

Key words: Staphylococcus; methicillin-resistant Staphylococcus (MRS); antibiotics; resistance rate

葡萄球菌(主要是金黄色葡萄球菌袁简称金葡萄尧表皮葡萄球菌)是我院临床标本分离细菌中的主要病原菌袁也是近年来引起医院内感染的主要细菌遥耐甲氧西林葡萄球菌渊methicillin-resistant Staphylococcus, MRS 冤有很高的耐药率和多重耐药性袁给临床治疗带来相当大的困难遥因此袁及时了解与分析它对常用抗生素的耐药情况袁为临床选择用药提供参考遥

1 材料与方法

1.1 菌株来源

2002 年 1~7 月送检的住院病人的血袁痰袁脓液尧分泌物等标本中分离出的金葡萄尧表皮葡萄球菌及其他血浆凝固酶阴性的葡萄球菌共 105 株袁选择 8 种常用抗生素同时进行药物敏感试验遥药敏质控对照菌株袁金葡萄 ATCC25923 由北京天坛药品生物制品检

定所提供遥

1.2 药敏试验

采用美国 BD 公司生产袁凤凰-100 全自动细菌鉴定药敏系统遥

1.3 凝固酶试验

常规玻片法加试管法做血浆凝固酶试验遥

2 结果

MRS 的分离率较高袁为 68.6% 袁其中 65 株金葡萄菌有 45 株是耐甲氧西林金葡萄菌 (methicillin-resistant Staphylococcus aureus, MRSA) 袁占 69.2% 袁 10 株耐甲表皮葡萄球菌中渊methicillin-resistant Staphylococcus epidermidis, MRSE 冤占 63.3% 遥MRS 对抗生素的耐药率比非耐甲氧西林葡萄球菌 (methicillin-susceptible Staphylococcus, MSS 冤明显高袁且多重耐药率很高遥在本组调查的 8 种抗生素中 MRSA 除万古霉素外袁对泰能尧阿米卡星尧复方新诺明尧环丙沙星尧伏大霉素尧红霉素尧青霉素耐药率均达到 60% 以上 袁 MRSE 对青霉

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素羧霉素羧方新诺明羧环丙沙星的耐药率也都高达 70%以上羧但对泰能羧阿米卡星羧庆大霉素敏感性较高羧见表 1遥MRS 比 MSS 多重耐药率高得多羧MRSA 对

四种不同作用机制的抗生素羧泰能羧阿米卡星羧环丙沙星羧方新诺明具有很高的多重耐药率羧达到 50%以上羧见表 2~5遥

表 1 葡萄球菌属对常用抗生素的耐药率
Tab.1 Resistance rate of Staphylococcus to different common antibiotics

	Staphylococcus aureus								Staphylococcus epidermidis								Staphylococcus coagulase-negative					
	MSSA(n=20)				MRSA(n=45)				MSSE(n=11)				MRSE(n=19)				MSS(n=2)			MRS(n=8)		
	S	I	R	RR(%)	S	I	R	RR(%)	S	I	R	RR(%)	S	I	R	RR(%)	S	I	R	S	I	R
VAN	20	0	0	0.0	45	0	0	0.0	11	0	0	0.0	19	0	0	0.0	2	0	0	8	0	0
IMP	20	0	0	0.0	8	3	34	75.6	10	0	1	9.1	17	0	2	10.5	2	0	0	2	0	6
AMK	20	0	0	0.0	4	1	40	88.9	11	0	0	0.0	16	0	3	15.8	2	0	0	4	0	4
SXT	13	0	7	35.0	17	0	28	62.2	3	0	8	72.7	4	0	15	78.9	2	0	0	3	0	5
CIP	17	2	1	5.0	2	0	43	95.6	4	2	5	45.5	5	0	14	73.7	2	0	0	1	0	7
GM	18	1	1	5.0	1	0	44	97.8	7	0	4	36.4	10	3	6	31.6	2	0	0	1	0	7
ERY	9	1	10	50.0	0	1	44	97.8	3	0	8	72.7	1	0	18	94.7	2	0	0	0	0	8
PEN	2	0	1	90.0	0	0	45	100.0	1	0	10	90.0	0	0	19	100.0	1	0	1	0	0	8

VAN:Vancomycin;IMP:Imipenem;AMK:Amikacin;SXT:Sulfamethoxazolecomplex;CIP:Ciprofloxacin;GM:Gentamycin;ERY:Erythromycin;PEN:Penicillin;MSSA:Methicillin-susceptible Staphylococcus aureus;MRSA:Methicillin-resistant Staphylococcus aureus;MSSE:Methicillin-susceptible Staphylococcus epidermidis;MRSE:Methicillin-resistant Staphylococcus epidermidis;MSS:Methicillin-susceptible Staphylococcus;MRS:Methicillin-resistant Staphylococcus;RR:Resistancerate; S:Susceptible;R:Resistance

表 2 MRSA 对四种不同抗菌机制抗生素的多重耐药率

Tab.2 Multi-drug resistance of MRSA to 4 kinds of antibiotic with different antibiotic mechanisms

	IMP/AMK	IMP/SXT	IMP/CIP	AMK/SXT	AMK/CIP	SXT/CIP
S/S	4	1	1	1	1	2
R/R	33	18	33	24	39	28
S/R	7	10	10	4	4	15
R/S	1	16	1	16	1	0
MDR(%)	73.3	40.0	73.3	53.3	86.7	62.2

MDR:Multi-drugresistance

表 5 MSSE对四种不同抗菌机制抗生素的多重耐药率

Tab.5 Multi-drug resistance of MSSE to 4 kinds of antibiotic with different antibiotic mechanisms

	IMP/AMK	IMP/SXT	IMP/CIP	AMK/SXT	AMK/CIP	SXT/CIP
S/S	10	3	5	3	6	3
R/R	1	1	0	0	0	5
S/R	0	7	5	8	5	0
R/S	0	0	1	0	0	3
MDR(%)	9.1	9.1	0	0	0	45.5

表 3 MSSA 对四种不同抗菌机制抗生素的多重耐药率

Tab.3 Multi-drug resistance of MSSA to 4 kinds of antibiotic with different antibiotic mechanisms

	IMP/AMK	IMP/SXT	IMP/CIP	AMK/SXT	AMK/CIP	SXT/CIP
S/S	20	13	19	13	19	12
R/R	0	0	0	0	0	2
S/R	0	7	1	7	1	1
R/S	0	0	0	0	0	5
MDR(%)	0	0	0	0	0	10.0

表 4 MRSE 对四种不同抗菌机制抗生素的多重耐药率

Tab.4 Multi-drug resistance of MRSE to 4 kinds of antibiotic with different antibiotic mechanisms

	IMP/AMK	IMP/SXT	IMP/CIP	AMK/SXT	AMK/CIP	SXT/CIP
S/S	15	4	5	4	5	2
R/R	1	2	2	3	3	12
S/R	2	13	12	12	11	2
R/S	1	0	0	0	0	3
MDR(%)	5.2	10.5	10.5	15.8	15.8	63.2

3 讨论

金葡菌羧表皮葡萄球菌是我院自 1997 年以来分离出的数量分别居首位和前十位的病原菌羧而且其中 MRS 比率很高遥在本组 105 株葡萄球菌中羧2 株对甲氧西林产生耐药性羧实验中以苯唑西林替代甲氧西林羧耐药率为 68.6%遥其中 65 株金葡菌有 45 株是耐甲氧西林的 MRSA 占 69.2%遥0 株表葡菌中耐甲氧西林的 MRSE 19 株羧占 63.3%遥其他 10 株凝固酶阴性葡萄球菌中耐甲氧西林的 8 株遥20 世纪 90 年代初羧MRS 的分离率我国不同地区报道不一 羧低者 3.5%羧高者在 30%以上遥近年来文献报道金葡菌对甲氧西林耐药率不断升高 羧高达 70%以上遥这不得不引起人们的普遍关注羧MRS 感染给临床治疗带来很大困难遥因为羧MRS 比 MSS 耐药率明显增高羧且对抗生素的耐药率很高羧由表 1 可以看出 MRSA 除万古霉素外羧对表 1 中所列的其他抗生素耐药率均达到 60%以上羧几乎多数抗生素对它已无应用价值遥表 2 中 MRSE 对青霉素羧羧方新诺明羧环丙沙星的耐药率也都高达 70%以上羧幸运的是对泰能羧阿米

卡星莽大霉素敏感性较高袁考虑到保护万古霉素这一特殊药物袁对于 MRSE 感染尽量选用对其敏感的其他药物遥渊冤由表 4 至表 5 可见袁MRS 比 MSS 多重耐药率高得多袁MRSA 对四种不同作用机制的抗生素渊能尧阿米卡星尧环丙沙星尧复方新诺明冤具有很高的多重耐药率袁达到 50% 以上遥例如院对环丙沙星耐药的同时对泰能尧阿米卡星尧复方新诺明耐药率分别为 73.3%尧6.7%尧2.2%曰对泰能耐药的同时对阿米卡星尧环丙沙星的耐药率各有 73.3%曰对复方新诺明的耐药率为 40.0%曰复方新诺明对三种药的多重耐药率较低袁可能是由于近年临床对其使用较少有关遥

近年来袁头孢菌素类抗菌药物袁尤其是第三代头孢菌素的广泛应用袁此类药物对阳性球菌抗菌活性弱遥葡萄球菌的耐药性可被青霉素类尧头孢菌素抗生

素所诱导等遥MRS 的高分离率和高多重耐药率提示治疗 MRS 的难度袁因此应加强对感染性疾病的病原学送检和提高标本的鉴定阳性率遥尽管我院尚未分离出耐万古霉素葡萄球菌袁但对万古霉素也应限制使用袁根据药敏试验结果选用抗菌药物袁在有效的治疗 MRS 感染的同时应充分注意遏制 MRS 的产生遥

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妇科恶性肿瘤患者术后血液血栓前状态的检测

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摘要院目的 探讨妇科恶性肿瘤患者血栓前状态生物指标的变化遥方法 检测 38 例妇科恶性肿瘤患者手术前后及 20 例正常非孕妇女的血管性血友病因子渊vWF冤尧血小板膜糖蛋白渊GMP-140冤尧抗凝血酶渊AT-芋冤尧蛋白 C 依赖的活化部分凝血酶原时间渊CAT冤尧纤溶酶原渊PLG冤尧纤溶酶原激活物抑制物 (PAI)尧D-二聚体和组织纤溶酶原激活物 (t-PA) 等指标遥结果 妇科恶性肿瘤患者术前 vWF 含量尧GMP-140尧AT-芋尧PLG尧PAI尧D-二聚体均比对照组高渊P<0.01冤袁而术后升高更明显曰CAT 手术前后均明显低于正常非孕妇女曰而组织纤溶酶原激活物 (t-PA) 则无显著性改变渊P>0.05冤遥结论 提示妇科恶性肿瘤患者术前血液呈血栓前状态袁术后呈更明显的血栓前状态遥

关键词院恶性肿瘤袁血栓前状态袁深静脉血栓

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Assessment of variables relative to prethrombotic state after operation in patients with gynecological malignancies

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Abstract: Objective To study the changes in the variables in patients with gynecological malignancies after operation. Methods Platelet alpha granule membrane protein (GMP-140), von Willebrand Factor (vWF), antithrombin activity (AT-芋), protein C-dependent partial thromboplastin activation time, plasminogen activity (PLG), the activity of tissue-type plasminogen activator (t-PA) and plasminogen activator inhibitor (PAI), D-Dimer were examined in 20 normal non-pregnant women and 38 patients after operation with gynecological malignancies. Results vWF, GMP-140, PLG, D-Dimer, and PAI of patients with malignancies before operation were obviously higher than those of the healthy women (P<0.01). After operation the parameters were obviously elevated in the patients (P<0.01). AT-芋 and partial thromboplastin activation time were significantly reduced in comparison with the healthy subjects (P<0.01). t-PA showed no significant difference between the groups (P>0.05). Conclusion Obvious prethrombotic state characterizes the patients with gynecological malignancies after operation.

Key words: neoplasm, gynecological; prethrombotic state; deep venous thrombosis

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深静脉血栓渊deep venous thrombosis冤渊DVT冤是外科手术术后常见并发症之一遥妇科肿瘤术后袁特别是恶性肿瘤术后 DVT 的发生率明显升高遥恶性肿瘤患者