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论著

# 卡泊芬净、米卡芬净对念珠菌体外药物敏感性的动态研究

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摘要： 目的 动态研究卡泊芬净、米卡芬净体外对念珠菌的药物敏感性。方法 参照CLSI公布的M-27A方案微量液体稀释法分别测定卡泊芬净、米卡芬净、氟康唑对85株念珠菌的体外敏感性,并连续7 d观测结果。结果 48 h卡泊芬净对白念珠菌、光滑念珠菌及其他念珠菌$MIC_{50}$、$MIC_{90}$中位数分别为0.030μg/mL、0.030μg/mL,0.060μg/mL、0.125μg/mL,0.125μg/mL、0.500μg/mL。48 h米卡芬净对白念珠菌、光滑念珠菌及其他念珠菌$MIC_{50}$、$MIC_{90}$中位数分别为0.030μg/mL、0.030μg/mL,0.060μg/mL、0.060μg/mL,0.250μg/mL、0.500μg/mL。48 h氟康唑对白念珠菌、光滑念珠菌及其他念珠菌$MIC_{80}$、$MIC_{100}$中位数分别为2μg/mL、128μg/mL,64μg/mL、128μg/mL,2μg/mL、32μg/mL。85株念珠菌中未见对3种药物同时耐药的菌株。卡泊芬净组白念珠菌$MIC_{50}$、$MIC_{90}$ 24 h后不再升高;光滑念珠菌$MIC_{50}$ 72 h后不再升高,$MIC_{90}$ 120 h后不再升高;其他念珠菌组$MIC_{50}$ 168 h、$MIC_{90}$ 96 h后不再升高。米卡芬净组白念珠菌、光滑念珠菌$MIC_{50}$、$MIC_{90}$ 24 h后不再升高;其他念珠菌$MIC_{50}$、$MIC_{90}$在72 h后不再升高。结论 卡泊芬净、米卡芬净对念珠菌属有较好的抗菌作用,其中对白念珠菌、光滑念珠菌作用更强,且MICs随着作用时间延长而升高并存在药物特异性和念珠菌种属特异性。

关键词： 动态 卡泊芬净 米卡芬净 氟康唑 念珠菌 体外药敏

# Dynamic study on the susceptibilities of caspofungin and micafungin to *Candida* species *in vitro*

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Abstract: Objective To assess the susceptibilities of *Candida* species to caspofungin and micafungin.Methods Susceptibilities of *Candida* isolates to caspofungin,micafungin and fluconazole were determined by microdilution method based on CLSI M27-A2 for consecutive seven days.Results After 48 hours,the medians of $MIC_{50}$ and $MIC_{90}$ of *C.albicans*,*C.glabrata*,and other *Candida* spp.to caspofungin were 0.03 and 0.03 μg/mL,0.06 and 0.125 μg/mL,0.125 and 0.5 μg/mL,respectively.The medians of $MIC_{50}$ and $MIC_{90}$ of *C.albicans*,*C.glabrata*,and other *Candida* species to micafungin were 0.03 μg/mL and 0.03 μg/mL,0.06 μg/mL and 0.06 μg/mL,0.25 μg/mL and 0.5 μg/mL,respectively.The medians of $MIC_{80}$ and $MIC_{100}$ of *C.albicans*,*C.glabrata*,and other *Candida* species to fluconazole were 2 μg/mL and 128 μg/mL,64 μg/mL and 128 μg/mL,2 μg/mL and 32 μg/mL,respectively.None of the 85 isolates of *Candida* species showed cross-resistance to caspofungin,micafungin or fluconazole.To caspofungin,there was no change on $MIC_{50}$ or $MIC_{90}$ of *C.albicans* after 24 hours.No increase on $MIC_{50}$ and $MIC_{90}$ of *C.glabrata* was observed after 72 hours and 120 hours.Neither did increase on $MIC_{50}$ and $MIC_{90}$ of other *Candida* species after 168 hours and 96 hours.To micafungin,there was no change on $MIC_{50}$ and $MIC_{90}$ of *C.albicans* and *C.glabrata* after 24 hours and no increase on $MIC_{50}$ and $MIC_{90}$ of other *Candida* species after 72 hours.Conclusions Caspofungin and micafungin may have great antifungal activities to all candida species,especially to *C.albicans* and *C.glabrata*.The MICs would increase with the exposure time,which show specificity to drug and *Candida* species.

Keywords: dynamic caspofungin micafungin fluconazole *Candida* species *in vitro* susceptibility

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参考文献:

[1] 李珊山,刘鹤松,郑华,等.皮肤型孢子丝菌病585例临床分析[J].中华皮肤科杂志,2011,44(3):161-164.
[2] 吴昌昊,吴旭,张立溪,等.肺部孢子丝菌病1例[J].南方医科大学学报,2009,10:2147.
[3] Callens SF,Kitetele F,Lukun P,et al.Pulmonary Sporothrix schenckii infection in a HIV positive child [J].J Trop Pediatr,2006,52:144-146.
[4] Vilela R,Souza GF,Fernandes Cota G,et al.Cutaneous and meningeal sporotrichosis in a HIV patient [J].Rev Iberoam Micol,2007,24:161-163.
[5] 朱衡,瞿峰.利用氯化苄提取适于分子生物学分析的真菌DNA[J].真菌学报,1994,13:34-40.
[6] Frohman MA,Dush MK,Martin GR,et al.Rapid production of full-length cDNA,from rare transcripts:amplification using a single gene-specific oligonucleotide primer[J].Proc Nat Acad Sci USA,1998,85:8998-9002.
[7] Feng P,Xie Z,Sun J,et al.Molecular cloning,characterization and expression of PmRsrl,a Ras-related gene from yeast form of Penicillium marneffei[J].Mol Biol Rep,2010,37 (7):3533-3540.
[8] Cao C,Liu W,Li R,et al.Penicillium marneffeiSKN7,a novel gene,could complement the hypersensitivity of S.cerevisiae skn7 disruptant strain to oxidative stress[J].Mycopathologia,2009,168(1):23-30.
[9] Carmo JP,Dias-Melicio LA,Calvi SA,et al.TNF-alpha activates human monocytes for paracoccidioides brasiliensis killing by an H202-dependent mechanism[J].Med Mycol,2006,44 (4):363-368.
[10] Howard,DH.Comparative sensitivity of histoplasma capsulatum conidiospores and blastospores to oxidative antifungal systems[J].Infect Immun,1981,32(1):381-387.
[11] Brummer E,Sugar AM,Stevens DA.Immunological activation of polymorphonuclear neutrophils for fungal killingl studies with murine cells and Blastomyces dermatitidis in vitro[J].J Leukoc Biol,1984,36 (4):505-520.
[12] 张军民,章慧,孙九峰,等.过氧化氢酶家族部分成员在马尔尼非青霉的相关研究[J].中国人兽共患病学报,2008,24(9):824-826.
[13] Wang XH,Li RY,Cao CW,et al.Differential mRNA expression of Sporothrix schenckii catalase gene in two growth phases and effect factors[J].Chin Med J (Engl),2008,121 (20):2100-2102.

本刊中的类似文章

1. 季雅娟, 王爱平, 刘伟, 万喆, 李若瑜.特比萘芬与其他抗真菌药物对外阴阴道念珠菌病病原菌的体外相互作用研究[J]. 中国真菌学杂志, 2012,(2): 73-76,81
2. 阳隽, 张天托, 朱家馨.荧光定量PCR检测不同状态下白念珠菌CPH1、EFG1基因的表达[J]. 中国真菌学杂志, 2012,(2): 77-81
3. 江爱萍, 黄剑清, 卢万丁, 徐明, 吴建华.PCR指纹图谱分析在念珠菌性阴道炎、龟头炎流行病学研究中的应用[J]. 中国真菌学杂志, 2012,(2): 82-84,115
4. 郎涤非, 李文, 孙宁霞.氟康唑联合克霉唑阴道片治疗复发性外阴阴道念珠菌病临床观察[J]. 中国真菌学杂志, 2012,(2): 104-105,108
5. 吴启富.硝酸舍他康唑乳膏治疗儿童皮肤念珠菌病50例[J]. 中国真菌学杂志, 2012,(2): 106-108
6. 商庆华, 曹颖瑛, 苗浩, 姜远英.白念珠菌生物被膜的基因表达及相关基因研究进展[J]. 中国真菌学杂志, 2012,(2): 125-128
7. 朴英兰, 沈亮亮, 叶元康, 潘胜利, 武济民.五环三萜类柴胡皂苷单体对白念珠菌伊曲康唑耐药株活性研究[J]. 中国真菌学杂志, 2012,7(1): 8-11
8. 周万青, 沈瀚, 张之烽, 张葵.白念珠菌临床分离调查及基因分型研究[J]. 中国真菌学杂志, 2012,7(1): 20-23
9. 蔡晴, 刘维达.先天性皮肤念珠菌病[J]. 中国真菌学杂志, 2012,7(1): 43-46
10. 仇萌, 邹先彪.Sap2与侵袭性白念珠菌感染相关性研究进展[J]. 中国真菌学杂志, 2012,7(1): 52-54
11. 乔祖莎, 冯文莉.克柔念珠菌对抗真菌药物耐药机制的研究进展[J]. 中国真菌学杂志, 2012,7(1): 55-58
12. 高露娟, 余进, 李若瑜.烟曲霉再鉴定、标准化CSP分型及体外药物敏感性[J]. 中国真菌学杂志, 2011,6(6): 328-331,336
13. 吴然, 程波, 贾敏.小鼠烟曲霉角膜炎的实验研究[J]. 中国真菌学杂志, 2011,6(6): 332-336
14. 林莉, 王莉, 周洋洋, 陈耀华, 孟新丽, 康健.大鼠白念珠菌支气管肺感染时肺组织Toll样受体2的表达及意义[J]. 中国真菌学杂志, 2011,6(6): 337-340
15. 王爱平, 万喆, 涂平, 陈伟, 李若瑜.慢性皮肤黏膜念珠菌病1例[J]. 中国真菌学杂志, 2011,6(6): 352-354,357