

LAB ALERT: GENERAL COMMUNICATION

NOTIFICATION DATE: 6/28/2013

EFFECTIVE DATE: 7/1/2013

CHANGES IN THE INTERPRETATION OF YEAST SUSCEPTIBILITY RESULTS

EXPLANATION: In December 2012 the Clinical Laboratory Standards Institute [CLSI] published the fourth informational supplement [M27-S4]. This document provides interpretations for antifungal susceptibility test results. Several significant changes are contained within M27-S4:

- There are now species-specific breakpoints for the 5 most common *Candida* species and *Candida guilliermondii*.
 - There is no interpretation for fluconazole with *Candida krusei* as that species is considered intrinsically resistant to the antifungal.
 - *Candida* species other than those listed in the document will only have an MIC value reported [no interpretation] when susceptibility testing is performed.
- Breakpoints for most antifungals have been lowered.
- Itraconazole no longer appears in the document and will not be routinely reported.

Effective **July 1, 2013** med Fusion will implement the new interpretations.

Antifungal susceptibility results that will now be routinely reported by med fusion are the following:

- Anidulafungin
- Micafungin
- Caspofungin
- Voriconazole
- Fluconazole
- Amphotericin B [no interpretation]

Attached are two tables that will assist in understanding these changes. They consist of:

- Species-specific breakpoints
- Comparison of previous and current interpretations.

The following tables from CLSI document M27-S4 include only the most common *Candida* and the echinocandins, fluconazole, and voriconazole. All other yeast have no interpretation at this time.

<i>Candida albicans</i>				
	S	SDD	I	R
Anidulafungin	<=0.25	-	0.5	>=1
Micafungin	<=0.25	-	0.5	>=1
Caspofungin	<=0.25	-	0.5	>=1
Voriconazole	<=0.12	0.25-0.5	-	>=1
Fluconazole	<=2	4	-	>=8

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<i>Candida glabrata</i>				
	S	SDD	I	R
Anidulafungin	<=0.12	-	0.25	>=0.5
Micafungin	<=0.06	-	0.12	>=0.25
Caspofungin	<=0.12	-	0.25	>=0.5
Voriconazole	-	-	-	-
Fluconazole	-	<=32	-	>=64

<i>Candida krusei</i>				
	S	SDD	I	R
Anidulafungin	<=0.25		0.5	>=1
Micafungin	<=0.25		0.5	>=1
Caspofungin	<=0.25		0.5	>=1
Voriconazole	<=0.5	1		>=2

<i>Candida parapsilosis</i>				
	S	SDD	I	R
Anidulafungin	<=2	-	4	>=8
Micafungin	<=2	-	4	>=8
Caspofungin	<=2	-	4	>=8
Voriconazole	<=0.12	0.25-0.5	-	>=1
Fluconazole	<=2	4	-	>=8

<i>Candida tropicalis</i>				
	S	SDD	I	R
Anidulafungin	<=0.25	-	0.5	>=1
Micafungin	<=0.25	-	0.5	>=1
Caspofungin	<=0.25	-	0.5	>=1
Voriconazole	<=0.12	0.25-0.5	-	>=1
Fluconazole	<=2	4	-	>=8

<i>Candida guilliermondii</i>				
	S	SDD	I	R
Anidulafungin	<=2		4	>=8
Micafungin	<=2		4	>=8
Caspofungin	<=2		4	>=8

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Susceptible/Dose Dependent (SDD): Susceptibility is dependent on achieving the maximal possible blood level. For Fluconazole, doses of 400 mg/day (6mg/kg/d) or more may be required in adults with normal renal function and body habitus.

Intermediate (I): The susceptibility of these isolates is not certain, and the available data do not permit them to be clearly categorized as either “susceptible” or “resistant”.

COMPARISON OF REVISED AND PREVIOUS INTERPRETATIONS

<i>Candida albicans</i>								
	S [new]	S [old]	SDD [new]	SDD [old]	I [new]	I [old]	R [new]	R [old]
Anidulafungin	<=0.25	<=2			0.5	not defined	>=1	>2
Micafungin	<=0.25	<=2			0.5	not defined	>=1	>2
Caspofungin	<=0.25	<=2			0.5	not defined	>=1	>2
Voriconazole	<=0.12	<=1	0.25-0.5	2			>=1	>=4
Fluconazole	<=2	<=8	4	16-32			>=8	>=64

<i>Candida glabrata</i>								
	S [new]	S [old]	SDD [new]	SDD [old]	I [new]	I [old]	R [new]	R [old]
Anidulafungin	<=0.12	<=2			0.25	not defined	>=0.5	>2
Micafungin	<=0.06	<=2			0.12	not defined	>=0.25	>2
Caspofungin	<=0.12	<=2			0.25	not defined	>=0.5	>2
Voriconazole	*	<=1	*	2	*		*	>=4
Fluconazole	xx	<=8	<=32	16-32			>=64	>=64

* the current data are insufficient to demonstrate a correlation between *in vitro* susceptibility testing and clinical outcome.

<i>Candida krusei</i>								
	S [new]	S [old]	SDD [new]	SDD [old]	I [new]	I [old]	R [new]	R [old]
Anidulafungin	<=0.25	<=2			0.5	not defined	>=1	>2
Micafungin	<=0.25	<=2			0.5	not defined	>=1	>2
Caspofungin	<=0.25	<=2			0.5	not defined	>=1	>2
Voriconazole	<=0.5	<=1	1	2			>=2	>=4
Fluconazole	considered intrinsically resistant							

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<i>Candida parapsilosis</i>								
	S [new]	S [old]	SDD [new]	SDD [old]	I [new]	I [old]	R [new]	R [old]
Anidulafungin	<=2	<=2			4	not defined	>=8	>2
Micafungin	<=2	<=2			4	not defined	>=8	>2
Caspofungin	<=2	<=2			4	not defined	>=8	>2
Voriconazole	<=0.12	<=1	0.25-0.5	2			>=1	>=4
Fluconazole	<=2	<=8	4	16-32			>=8	>=64

<i>Candida tropicalis</i>								
	S [new]	S [old]	SDD [new]	SDD [old]	I [new]	I [old]	R [new]	R [old]
Anidulafungin	<=0.25	<=2			0.5	not defined	>=1	>2
Micafungin	<=0.25	<=2			0.5	not defined	>=1	>2
Caspofungin	<=0.25	<=2			0.5	not defined	>=1	>2
Voriconazole	<=0.12	<=1	0.25-0.5	2			>=1	>=4
Fluconazole	<=2	<=8	4	16-32			>=8	>=64

<i>Candida guilliermondii</i>								
	S [new]	S [old]	SDD [new]	SDD [old]	I [new]	I [old]	R [new]	R [old]
Anidulafungin	<=2	<=2			4	not defined	>=8	>2
Micafungin	<=2	<=2			4	not defined	>=8	>2
Caspofungin	<=2	<=2			4	not defined	>=8	>2
Voriconazole	xx	<=1	xx	2			xx	>=4
Fluconazole	xx	<=8	xx	16-32			xx	>=64

Susceptible/Dose Dependent (SDD): Susceptibility is dependent on achieving the maximal possible blood level. For Fluconazole, doses of 400 mg/day (6mg/kg/d) or more may be required in adults with normal renal function and body habitus.

Intermediate (I): The susceptibility of these isolates is not certain, and the available data do not permit them to be clearly categorized as either "susceptible" or "resistant".

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