

1454. Antifungal Susceptibility Patterns of a Global Collection of Fungal Isolates and Polysorbate-80 Effect on the Susceptibility of the Antifungal Classes

Mariana Castanheira, PhD; Shawn Messer; Rachel Dietrich; Paul R. Rhombert BS; Ronald N. Jones, MD; Michael Pfaller, PhD; JMI Laboratories, North Liberty, IA

Session: 192. Fungal Infections

Saturday, October 11, 2014: 12:30 PM

Background. The importance of antifungal surveillance was highlighted by the increasing resistance among certain species and breakthrough infections. We evaluated 1,846 fungal clinical isolates against 9 antifungals using CLSI reference broth microdilution methods (BMD). Additionally, 1,206 isolates were tested using polysorbate-80 (P-80).

Methods. 1,846 isolates collected in 2013 (31 countries) were tested by CLSI BMD and interpretive criteria. Echinocandins (EC), amphotericin B (AMB) and fluconazole (FLC) were also tested using 0.002% P-80 supplemented broth. Isolates were identified using MALDI-TOF MS and/or DNA sequencing.

Results. EC, AMB and FLC were active against common *Candida* spp. (Table). EC-resistance ranged from 0.0 to 2.8% (anidulafungin for *C. glabrata* [CGLA]). 11.9 and 11.6% of the CGLA and *C. tropicalis* were resistant to FLC, respectively. Two *A. fumigatus* displayed elevated MIC values for itraconazole (≥ 4 $\mu\text{g/mL}$). All *C. neoformans* MIC < epidemiological cutoff values for azoles. P-80 lowered the MIC values for EC for all species, but not for FLC. AMB MIC values were lower and ranges broader (0.03-0.5 $\mu\text{g/mL}$) when compared with reference BMD (0.5-2 $\mu\text{g/mL}$).

Organism (no. tested [no. tested with P-80])	MIC/MEC _{50/90} for CLSI BMD (with P-80)			
	Anidulafungin	Caspofungin	Amphotericin B	Fluconazole

continued.

Organism (no. tested [no. tested with P-80])	MIC/MEC _{50/90} for CLSI BMD (with P-80)			
	Anidulafungin	Caspofungin	Amphotericin B	Fluconazole
<i>C. albicans</i> (712 [475])	0.015/0.06 (≤ 0.008 / ≤ 0.008)	0.03/0.03 (≤ 0.008 / ≤ 0.008)	1/1 (0.06/0.12)	0.12/0.25 (0.25/0.25)
<i>C. glabrata</i> (252 [156])	0.06/0.12 (0.015/0.015)	0.03/0.06 (≤ 0.008 / ≤ 0.008)	1/1 (0.12/0.12)	8/64 (4/32)
<i>C. parapsilosis</i> (215 [149])	2/2 (1/2)	0.25/0.5 (0.06/0.06)	1/1 (0.12/0.25)	1/2 (1/4)
<i>C. tropicalis</i> (155 [90])	0.015/0.03 (≤ 0.008 / ≤ 0.008)	0.03/0.03 (≤ 0.008 / ≤ 0.008)	1/1 (0.06/0.12)	0.5/32 (0.5/1)
<i>C. krusei</i> (49 [29])	0.06/0.06 (0.03/0.03)	0.12/0.25 (0.03/0.03)	1/2 (0.25/0.25)	32/64 (32/64)
<i>A. fumigatus</i> (142 [94])	≤ 0.008 /0.03 (≤ 0.008 / ≤ 0.008)	0.03/0.03 (≤ 0.008 / ≤ 0.008)	2/2 (0.25/0.5)	-/-

Conclusion. EC and azoles were potent against yeasts and moulds. P-80 use broadened MIC ranges for AMB; however, differences in the growth patterns in RPMI + P-80, requirement for new QC ranges and a possible effect in cell growth reported previously in bacteria might be an impediment to the use of P-80 for antifungal BMD testing.

Disclosures. M. Castanheira, Pfizer Inc.: Grant Investigator, Research grant S. Messer, Pfizer Inc.: Grant Investigator, Research grant R. Dietrich, Pfizer Inc.: Grant Investigator, Research grant P. R. Rhombert, Pfizer Inc.: Grant Investigator, Research grant R. N. Jones, Pfizer Inc.: Grant Investigator, Research grant M. Pfaller, Pfizer Inc.: Grant Investigator, Research grant