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ePoster Viewing

Antifungal drug susceptibility and resistance

Surveillance of azole resistance among environmental isolates of *Aspergillus fumigatus* species complex in a general hospital in Madrid

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Objectives: Recent studies have reported the recovery of triazole-resistant *Aspergillus fumigatus* isolates from hospital indoor air, and suggested that patients with invasive aspergillosis due to azole-resistant strains might acquire the fungus from the environment. In order to determine triazole resistance, we screened a large collection of *A. fumigatus* species complex (AFSC) isolates recovered from air samples collected in a Spanish general hospital (Gregorio Marañón Hospital, Madrid, Spain) over a 12-year period (2000-2011).

Methods: We identified 322 AFSC isolates to the species level by combining classical and molecular methods and screened for possible triazole resistance by culture on agar media containing itraconazole (4 µg/mL), posaconazole (0.5 µg/mL), or voriconazole (1 µg/mL). We also determined MICs to amphotericin B (AMB) and triazoles according to the CLSI guidelines for azole screening positive *A. fumigatus* 'sensu stricto' isolates and all isolates belonging to cryptic species.

Results: We identified 314 (97.5%) isolates as *A. fumigatus* 'sensu stricto' and 8 (2.5%) as cryptic species (*Neosartorya hiratsukae*, 5; *N. udagawae*, 2; and *A. lentulus*, 1). Cryptic species came from air samples taken at protected and non-protected areas (50% each) and the first isolation dated back from 2007. All *A. fumigatus* 'sensu stricto' isolates were susceptible to azoles and to AMB. All cryptic species exhibited higher MICs to azoles than *A. fumigatus* 'sensu stricto'.

Conclusion: The results of this study confirm that azole resistance among environmental *A. fumigatus* 'sensu stricto' isolates is not a cause for concern in our institution. However, further surveillance of cryptic members of *A. fumigatus* species complex is recommended.