

P0291 15-year trend: a retrospective data analysis of antifungal antibiogrammes in a large New York health system

Aya Haghmad*¹, Joel Martin¹, Stefan Juretschko², Susan Condon²

¹Northwell Health, Pathology Informatics, New Hyde Park, United States, ²Northwell Health, Infectious Disease Diagnostics, New Hyde Park, United States

Background: Invasive fungal infections often lead to significant risk of morbidity and mortality in hospitalised patients. In the United States the most common fungal infections are caused by *Candida* species and are estimated to result in an additional 3 to 13 days of hospitalisation and \$6,000 to \$29,000 in healthcare costs. Growing resistance to first line antifungal therapies is a major concern and often leads to worse patient outcomes. Northwell Health is the largest health system in the New York City metropolitan area, with over 22 hospitals serving over 4.6 million lives. Our primary objective is to assess *Candida* species resistance patterns within our health system over a 15 year period.

Materials/ Methods: A retrospective analysis of antifungal antibiogrammes was performed in a large New York health system over a fifteen year period (2001-2016). All *Candida* species from the blood, cerebral spinal fluid, and tissues analysed at the Core Laboratory were included in our study. Susceptibility was conducted using TREK yeast 109. MICs, sensitivity and resistance for amphotericin B (polyenes), fluconazole and voriconazole, itaconazole (azoles), anidulafungin, Micafungin, caspofungin (echinocandins) and flucytosine were reviewed to assess resistance patterns.

Results: A total of 2836 *Candida* species isolates underwent sensitivity testing at our Core Lab from 2001 and 2016. *Candida albicans* was the most prevalent with 47% (1344/2836), *Candida glabrata* 24% (686/2836), *Candida parapsilosis* 17% (474/2836), *Candida tropicalis* 10% (289/2836), *Candida krusei* 1% (33/2836). An overall shift in MIC value for Amphotericin B from 0.25 to 0.5 for all *Candida* species was observed. A significant overall increase in resistance of *C. albicans* to azoles was not observed, however, an average of 35% of *C. glabrata* isolates were resistant to azoles with a rise in 2015 and 2016. Increase of resistance in *C. albicans*, *C. tropicalis* was noted to the echinocandins class in 2014, 2015, and 2015. An increase of *C. tropicalis* resistance to flucytosine was observed.

Conclusions: Our findings suggests that although resistance patterns have been fairly consistent there is a general upward trend over the last 15 years most notably with *C. albicans*, *C. tropicalis* to the echinocandins, and *C. glabrata* to the azole class.