

## P0323 Twenty years of the SENTRY Antifungal Surveillance Program: results for *Candida* species from 1997-2016

Michael A. Pfaller<sup>1</sup>, Daniel J. Diekema<sup>2</sup>, John D. Turnidge<sup>3</sup>, Mariana Castanheira\*<sup>1</sup>, Ronald N. Jones<sup>1</sup>

<sup>1</sup>JMI Laboratories, North Liberty, United States, <sup>2</sup>University of Iowa, Iowa City, United States, <sup>3</sup>University of Adelaide, <sup>3</sup>Departments of Pathology, and Molecular and Cellular Biology, Adelaide, Australia

**Background:** The emergence of antifungal resistance (R) threatens effective treatment of invasive fungal infection (IFI). Invasive candidiasis is the most common healthcare-associated IFI.

**Materials/methods:** We evaluated the *in vitro* activity of fluconazole (FLC) against 20,788 invasive isolates of *Candida* (37 species) collected from more than 150 medical centers in >40 different countries between 1997 and 2016 and the activity of anidulafungin (ANF), caspofungin (CSF), and micafungin (MCF) against 15,721 isolates worldwide during 2006–2016. Species were identified using phenotypic (1997–2001), genotypic, and proteomic methods (2006–2016). All isolates were tested using CLSI M27-A3 methods, and clinical breakpoints published in the M27-S4 document were applied to the indicated species.

**Results:** A steady decrease in the isolation of *C. albicans* (CA) and an increase in the isolation of *C. glabrata* (CG) and *C. parapsilosis* (CP) was noted over time. CG was the most common non-CA species detected in all geographic regions except for Latin America (LATAM) where both CP and *C. tropicalis* (CT) were more common. There were 6 *C. auris* isolates detected: 1 each in 2009, 2013, 2014, and 2015 and 2 in 2016; all nosocomial BSI; all FLC-R; 4 ICU, and 3 from the same institution in the United States (US). FLC R ranged from 8.2% for CG to 0.3% for CA. The highest rates of FLC R were seen in CG isolates from North America (NA; 10.6%) and CT isolates from the Asia-Pacific (APAC) region (10.2%). A steady increase in isolation of CG and R to FLC was detected over 20 years in the US. Echinocandin R (EC-R) ranged from 3.4% for CG to 0.0% for CP. Resistance to MCF was highest among CG (2.8%) and CT (1.3%) from NA. Mutations on FKS hotspot (HS) regions were detected among 71 EC-R isolates (51/71 were CG). Most isolates harbouring FKS HS mutations were R to 2 or more ECs.

**Conclusions:** EC and FLC R remains uncommon among contemporary *Candida* isolates; however, a slow and steady emergence of R to both classes of agents is seen among isolates of CG and CT, depending on geographic location.