

P0065

Poster Session I

Confronting fungal infections

CANDIDEMIA AT A REFERRAL HOSPITAL IN SUB-SAHARAN AFRICA: EMERGENCE OF CANDIDA AURIS AS A MAJOR PATHOGEN

N. Okinda¹, E. Kagotho¹, M. Castanheira², A. Njuguna¹, G. Omuse¹, P. Makau¹, M. Pfaller², G. Revathi¹, **R. Adam**¹

¹Pathology, Aga Khan University Hospital Nairobi, Nairobi, Kenya ; ²Molecular and Microbiology, JMI Laboratories, North Liberty, USA

Objectives

The objective of the study was to determine the frequency and to compare the risk factors for *Candida auris* fungemia with that of fungemia caused by other *Candida* spp.

Methods

We analyzed all positive blood cultures on patients admitted to a 250 bed referral hospital in sub-Saharan Africa from Sept 2010 to June 2013. Blood cultures were continuously monitored in a Bactec system and a Vitek 2 system was used for speciation and susceptibility determination of positive cultures. Results were captured onto an electronic medical record. Coagulase negative staphylococci and viridans streptococci were omitted from analysis since sufficient information was seldom available to determine whether they were pathogens. Twenty one of the isolates identified by Vitek as *Candida haemulonii* were subjected to molecular typing using ITS sequencing and PFG typing. All 21 were identified as *C. auris*, and by ITS sequence comparison had 85% identity with *C. haemulonii*. Thus, these isolates are referred to herein as *C. auris*. Susceptibility testing was performed by standard methods.

Results

Escherichia coli and *Candida spp.* were the most common organisms overall at 21 and 20%, respectively. When using blood cultures requested on the fourth day or longer after admission as a surrogate marker for hospital-acquired infections, *Candida spp.* accounted for 39% of episodes of bloodstream infections. *C. auris* was the most common, accounting for 45 (38%) episodes, while *Candida albicans* was the second most common at 27%. In vitro testing revealed relative resistance to azoles, but MIC values that are within the susceptible range for other *Candida spp.* for amphotericin B and echinocandins. Risk factors for *C. auris* fungemia are being evaluated, but include a high prevalence of central vascular lines and use of broad spectrum antibiotics, especially carbapenems.

Conclusions

Candida species have been the third or fourth most common organisms causing nosocomial bloodstream infection in most series, but little information has been available on the relative frequency of *Candida* species in hospitals from low-resource areas. The current study not only demonstrates the importance of candidemia in a low resource region, but also identifies *C. auris* as the most common cause of fungemia over a nearly 3-year period. *C. auris* has recently been reported from Asia, but has not been reported from North America, Europe, or Africa. Further studies will be needed to determine the reasons for the predominance of *C. auris* as a fungal pathogen in this location within sub-Saharan Africa.

Table: Episodes of candidemia

ORGANISM	%
<i>Candida haemulonii</i>	38%
<i>Candida albicans</i>	27%
<i>Candida parapsilosis</i>	13%
<i>Candida tropicalis</i>	9%
<i>Candida glabrata</i>	7%
<i>Candida krusei</i>	4%
<i>Candida spp.</i>	2%