Epidemiology and microbiology of invasive candidiasis in the largest tertiary Greek pediatric hospital during 2008-2017

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Background

Candida species are a common cause of invasive infection in neonates and children. The aim was to study the epidemiology and microbiology of invasive candidiasis (IC) in the largest tertiary Greek pediatric hospital during a 10-year period.

Results

- ❖ During a 10-year period, 178 incidences of invasive candidiasis were recorded.
- ❖ Seventy-seven isolates (43.3%) were detected in neonatal intensive care units (NICU), 46 (25.8%) in pediatric clinics, 27 (15.2%) in hematology/oncology units (HOU) and 28 (15.7%) in pediatric ICU (PICU).
- ❖ The tissue distribution included blood (87.1%), cerebrospinal (7.9%), peritoneal (3.9%) and pleural fluids (1.1%).
- ❖ Ten different *Candida* species were detected. *Candida albicans* was the most frequently isolated species (47.8%) followed by *C. parapsilosis* (28.7%), *C. lusitaniae* (6.2%), *C. glabrata* (4.5%) and *C. tropicalis* (4.5%).
- ❖ The resistance in fluconazole was 0.0% among *C. albicans* isolates and 9.6% among *C. parapsilosis* isolates.

Table. Distribution of *Candida* species by infection site

<i>Candida</i> species	Blood (n=155)	CSF (n=14)	Peritoneal fluid (n=7)	Pleural fluid (n=2)
<i>Candida albicans</i> (n=85)	74 (47.7)	7 (50.0)	3 (42.9)	1 (50.0)
<i>Candida parapsilosis</i> (n=51)	45 (29.0)	3 (21.4)	3 (42.9)	0 (0.0)
<i>Candida lusitaniae</i> (n=11)	9 (5.8)	2 (14.3)	0 (0.0)	0 (0.0)
<i>Candida tropicalis</i> (n=8)	6 (3.9)	1 (7.1)	0 (0.0)	1 (50.0)
<i>Candida glabrata</i> (n=8)	8 (5.2)	0 (0.0)	0 (0.0)	0 (0.0)
<i>Candida famata</i> (n=6)	5 (3.2)	1 (7.1)	0 (0.0)	0 (0.0)
<i>Candida krusei</i> (n=5)	4 (2.6)	0 (0.0)	1 (14.3)	0 (0.0)
<i>Candida guilliermondii</i> (n=2)	2 (1.3)	0 (0.0)	0 (0.0)	0 (0.0)
<i>Candida rugosa</i> (n=1)	1 (0.6)	0 (0.0)	0 (0.0)	0 (0.0)
<i>Candida kefyr</i> (n=1)	1 (0.6)	0 (0.0)	0 (0.0)	0 (0.0)

Methods

A retrospective cohort study was performed from January 2008 to December 2017. Every first *Candida* isolation from each episode of IC was included. Identification and susceptibility testing were performed according to local procedures, while antifungal susceptibility testing was performed according to CLSI methodology.

Figure. Distribution of *Candida* species by year

Conclusion

- In our hospital, fluconazole sensitive *C. albicans* was the most frequently identified species compared with *C. non-albicans*.
- Local epidemiology monitoring is always necessary to understand invasive candidiasis burden in pediatric populations.