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Paper Poster Session

Fungal infection epidemiology

Temporal trends in adult and paediatric patients with fungal isolation in peritoneal fluids: single centre 24-year experience

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Background: About 30% of secondary and tertiary peritonitis are caused by yeast, mainly *Candida* sp. with an associated mortality between 25-60%. Diagnosis of yeast peritonitis is difficult as most clinical signs are unspecific and microbiological culture has low sensitivity. Moreover, it is unclear which patients can benefit from empirical antifungal treatment. The aim of this study was to analyze the incidence, etiology and antifungal susceptibility profile of yeast species isolated in peritoneal fluids from adult and pediatric patients in a single institution in Madrid over 24 years.

Material/methods: Clinical reports of patients with fungal isolation in peritoneal fluids attended at our institution between 1989 and 2012 were included in this study. Cases of monofungal or polyfungal cases were considered as those with a single or multiple yeast species isolation from peritoneal fluid samples. Species distribution and antifungal susceptibility testing were analyzed separately in adults and pediatric patients. In vitro activities of amphotericin B (AMB), fluconazole (FZ), itraconazole (IZ), voriconazole (VZ), caspofungin (CAS), anidulafungin (AND) and micafungin (MYC) were determined by the broth microdilution method according to CLSI guidelines.

Results: During the study period, the incidence of yeast isolated from peritoneal fluids increased significantly ($p < 0.05$) from 1989 (0.188/1,000 admissions) to 2012 (0.588/1,000 admissions). A total of 570 cases were analyzed: 534 in adults (93.7%) and 36 in pediatric patients (6.3%).

In adult patients, episodes were monofungal in 86.9% and polyfungal in 13.1% of them. *C. albicans* and *C. glabrata* were the most frequent isolates in monofungal cases (61.0% and 14.0%, respectively); the prevalence of episodes due to *C. tropicalis* and *C. parapsilosis* was similar (8.0% and 7.0%, respectively). The fungal combinations most frequently involved in polyfungal episodes in

adults were *C. albicans* + *C. glabrata* (34.3% of cases) and *C. albicans* + *C. tropicalis* (20%). Resistance to antifungals among isolates from adult patients was as follows: AMB (1.4%), FZ (13.8%), IZ (6.4%), VZ (0.9%), CAS (4.8%), AND (2.5%) and MYC (2.5%).

In pediatric patients, monofungal infections accounted for 83.3% of cases and polyfungal infections for 16.7%. *Candida albicans* (50.0%) and *C. parapsilosis* (39.0%) were the species most frequently recovered from monofungal cases. The fungal combinations most frequently involved in polyfungal infections in pediatric patients were *C. albicans* + *C. parapsilosis* (33.3% of cases) and *C. albicans* + *C. tropicalis* (33.3%). No resistance to antifungal agents was detected among isolates from pediatric patients.

Conclusions: During the study period, the number of adult and pediatric patients with fungal isolation in peritoneal fluids increased significantly in our hospital. Resistance to antifungal agents tested was significantly higher in adult patients. Our study shows different trends in epidemiology and antifungal susceptibility of yeast species isolated from pediatric and adult patients.