29th ECCMID Amsterdam, Netherlands 13 – 16 April 2019

The congress of ESCMID

P2283 Impact of molecular blood culture identification on time to antifungal therapy in patients with candidaemia in a large New York health system

Aya Haghamad*[1], Liya Lomsadze[1], Pranisha Gautam-Goyal[1], Reeti Khare[1], Stefan Juretschko[1], Tylis Chang[1]

[1] Northwell Health, Great Neck, United States

Background: Blood stream infections (BSI) due to fungi have significant morbidity and mortality in hospitalised patients. In the United States, most 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. Early appropriate antifungal therapy is associated with favorable outcomes, and rapid molecular detection (BCID) has reduced time to *Candida spp*. identification. Our objective was to determine if reduced time to fungal identification reduced time to antifungal therapy.

Materials/methods: A multicenter, two-cohort retrospective analysis of adult hospitalized patients with candidemia was performed. Patients with *Candida spp* identified in the final culture by conventional methods (pre-BCID cohort: January to June 2017) were compared to patients with *Candida spp* identified by BCID (BioFire) performed directly from the blood culture (Bactec) (post-BCID cohort: January to June 2018). Patients treated and released in the ED and patients who expired or were discharged prior to Gram stain result were excluded. Time to antifungal therapy was calculated starting from Gram stain result to the order for micafungin or fluconazole; in-hospital mortality, and length of stay (LOS) were analyzed for each cohort.

Results: *Candida spp*. BSI in 105 adult patients across 8 hospitals was included in our study (pre-BCID, n=47; post-BCID, n=58). The most common *Candida spp*. was *Candida albicans* (41%), followed by *Candida glabrata* (28%), *Candida parapsilosis* (18%), and *Candida tropicalis* (10%). The number of patients escalated to antifungals was higher in the post-BCID group (77%), compared to 72% in the pre-BCID. Time to antifungal therapy was reduced by 50%, from 3.9 to 1.7 hours. Median LOS (pre-BCID: 18 days; post-BCID: 16 days) and in-hospital mortality rate (pre-BCID: 32%; post-BCID: 34%) were similar in both cohorts.

Conclusions: In patients with candidemia, timely organism identification by BCID provides valuable information for early initiation of appropriate and effective antifungals. Median time to antifungal therapy was reduced by 50% after implementation of BCID. Despite the decrease in time to antifungal therapy, no change in mortality or LOS was observed.