Background. Patients undergoing allogeneic stem-cell transplantation (aSCT) are at high risk of invasive fungal disease (IFD). Optimization of antifungal prophylaxis strategies may further improve patient outcomes and reduce treatment costs.

Methods. We performed a retrospective single-center pharmacoeconomic evaluation comparing patients who received other posaconazole oral solution plus micafungin intravenous bridging as required (POS-MIC) to patients who received only micafungin (MIC) as antifungal prophylaxis after aSCT at the University Hospital of Cologne. Epidemiological, clinical, and direct treatment cost data extracted from the Cologne Cohort of Neutropenic Patients (CoCoNut) were analyzed. Revised 2008 EORTC-MSG criteria were used for classification of IFD.

Results. During the observation period from January 2010 to December 2015, 313 patients (97 in the POS-MIC and 216 in the MIC group) fulfilled inclusion criteria. Most patients were male (n = 174, 56%) and median age was 52 years (range: 18–77 years). Acute myeloid leukemia was the most common underlying disease (n = 146, 47%). In the POS-MIC and MIC group, median overall length of stay (LOS) was 42 days (IQR: 35–52 days) vs. 49 days (IQR: 35–49 days; P = 0.296), reflecting in median overall direct treatment costs of €32,146 (IQR: €26,940–€56,348) vs. €43,241 (IQR: €37,281–€51,848; P = 0.037), respectively. In both groups, possible IFD occurred in six patients (6%) vs. 16 patients (7%; P = 0.22). Proven/confirmed IFD occurred in five patients (5%) vs. three patients (1%; P = 0.051). Overall in-hospital mortality rates in the POS-MIC and MIC group were 10% (n = 10) and 4% (n = 9; P = 0.035). Kaplan–Meier analysis showed improved outcome of patients who received MIC at day 100 (P = 0.037) and at day 365 (P < 0.001) following aSCT. Multivariable cox-regression model demonstrated treatment on ICU as the most important independent covariate for mortalities at day 100 (HR: 8.08; P < 0.001) and at day 365 (HR: 4.70; P < 0.001).

Conclusion. We observed a higher mortality in patients receiving POS-MIC instead of MIC, which was not explained by breakthrough IFDs. The higher drug acquisition costs of micafungin compared with posaconazole oral solution did not translate into higher overall direct treatment costs.

434. Invasive and Tablet Formulation of Posaconazole in Antifungal Therapy and Prophylaxis: A Retrospective, Non-Interventional, Multicenter Analysis of Patients Treated in German Tertiary-Care Hospitals

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Session: 56. Fungal Disease: Management and Outcomes Thursday, October 4, 2018: 12:30 PM

Background. Novel formulations (gastro-resistant tablet and intravenous solution) of posaconazole (POS) have been approved in prophylaxis and therapy of invasive fungal infections. The aim of the study was to analyze strategies and clinical effectiveness of new formulations.

Methods. A web-based registry on the platform ClinicalSurveys.net and members of the Infectious Diseases Working Party of the German Society of Hematology and Medical Oncology (AGIHO) were invited to pro-

ClinicalSurveys.net

Thursday, October 4, 2018: 12:30 PM

Session: 56. Fungal Disease: Management and Outcomes

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414. Diagnostic Usefulness of Differential Time to Positivity (DTP) in Neutrophilic Neutropenia Patients With Suspected Catheter-Related Candidemia (CRC)

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OFID 2018:5 (Suppl 1) – Poster Abstracts

Thursday, October 4, 2018: 12:30 PM

Background. The decision of catheter removal in neutropenic patients with candidemia is difficult because they usually have surgically implanted catheter, and CRC are less frequent than in non-neutropenic patients. However, there are limited data on distinguishing CRC from non-CRC before catheter removal. We thus evaluated the diagnostic performance of DTP to diagnose CRC in neutropenic patients with suspected CRC.

Methods. All adult neutrophilic neutropenia patients with candidemia were enrolled in a tertiary care hospital from July 2012 to December 2016. Definite CRC was defined if 215 CFU of Candida spp. in a removed catheter tip. Probable CRC was defined if (1) one to 14 CFU in catheter tip, and (2) clinical improvement within 48 hours after catheter removal with antifungal agent therapy or (2) the infection was refractory to antifungal therapy, but improved after catheter removal. Non-CRC was defined if any of the following conditions were satisfied: (1) catheter tip cultures were negative and a non-catheter source of candidemia was found by culture, (2) the catheter tip cultures within 24 h before the start of antifungal therapy were negative, or (3) the clinical improvement before or without catheter removal. If the above conditions are not met, they were grouped into indeterminate, and were excluded from the final analysis. We defined the DTP as the difference in the time to positivity between blood cultures drawn simultaneously from the central vein and a peripheral vein.

Results. A total of 35 neutropenic patients with candidemia were enrolled. Of these, 15 patients (43%) with CRC (6 definite and nine probable) and 10 (29%) with non-CRC were finally analyzed, excluding indeterminate candidemia. On the basis of the receiver operating characteristics (ROC) curve, the optimal cut-off was 8 h (AUC: 0.776). The area under the ROC curve was 0.95% (95% CI, 76 to 100) in diagnosing CRC. Of the 15 patients with CRC, 11 (73%) revealed positive DTP, whereas none of the 17 patients with non-CRC exhibits positive DTP. The sensitivity and specificity of DTP for the diagnosis of CRC were 73% (95% CI, 58 to 94) and 100% (95% CI, 71 to 100), respectively.

Conclusion. DTP appears to be useful to rule in CRC and DTP ≥ 14 h to be the optimal cut-off for CRC in neutropenic cancer patients.

Disclosures. All authors: No reported disclosures.

415. Breakthrough Invasive Fungal Infections in Adult Hematologic Malignancy Patients Receiving Isavuconazole Prophylaxis

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Background. Isavuconazole (ISA) is a novel triazole antifungal approved for treatment of breakthrough fungal infections in hematological malignancy patients when other azoles are contraindicated. In the current study, we present our experience with ISA in prophylaxis in hematologic malignancy patients where other azoles are contraindicated, and we compared the current data limited on breakthrough invasive fungal infection (IFI) rates in patients.

Methods. We retrospectively reviewed outpatient and inpatient pharmacy records from March 2015 to August 2018 to identify adult patients with hematologic malignancy who received at least 7 days of ISA for prophylaxis. Breakthrough IFI was defined by EORTC-MSG criteria. We also reviewed the electronic medical record to determine if ISA was being used for prophylaxis in hematologic malignancy patients when other azoles were contraindicated, and we compared the current data limited on breakthrough invasive fungal infection (IFI) rates in patients.

Results. We identified 73 hematologic malignancy patients who received ISA; 29 received at least 7 days ISA for prophylaxis in 33 separate episodes. Of these patients, 52% had acute myeloid leukemia, 14% had acute promyelocytic leukemia, 10% had myelodysplastic syndrome, and 21% had another malignancy. Eighty-six percent of patients received ISA (median duration 24 days, range 2–213). Median duration of ISA prophylaxis was 61 days (range 8–635). The most common reason for choosing ISA over other antifungal agents was QTc prolongation (45%), followed by intolerance of other antifungals (27%) and drug-drug interactions with other azoles (21%). Patients received 12 days of ISA for prophylaxis (range 4–635). Mean time to breakthrough IFI was 2 days (range 2–17 days). Breakthrough IFI was defined by EORTC-MSG criteria. Of the 29 patients, 14 patients (48%) had a breakthrough IFI. Breakthrough IFI was defined by EORTC-MSG criteria. All 14 patients had a breakthrough IFI. Breakthrough IFI was defined by EORTC-MSG criteria.