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Multi-centre Observational Study on Epidemiology, Treatment, and Outcome of Mucormycosis in India

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malignancy or hematopoietic stem cell transplant (HSCT) (11 patients), use of immunosuppressing medications (11 patients), and invasive procedures (9 patients). At the time of diagnosis, only six patients were on an antifungal with mold activity. Eight patients died during hospitalization. The distribution of cases over time was compared with weather data for Colorado. A cluster of cases occurred in 2013 (6 cases) and in 2017 (8 cases). A majority of cases were diagnosed during summer months with July being the month with the most number of cases. There were higher levels of precipitation that occurred prior to or during the cluster of cases.

Conclusion. Cases of mucormycosis at UCH were associated with DM, hematologic malignancy, and hematopoietic stem cell transplantation (HSCT). Among patients with mucormycosis, the most common species was Rhizopus species (73.3%), followed by Lichtheimia corymbifera (11.8%), L. homothallicus (8.3%), and Absidia spp. (6.8%). Among 50 patients of proven or probable mucor mycosis, 20 (40%) patients were positive for serum and/or BAL fluid GM assay results; of 11 (60.5%) were positive in serum, nine of 12 (75.0%) were positive in BAL fluid, and two of 12 (16.7%) were positive in both. There were more patients with gastrointestinal infections (4 of 20 [20%] vs. 0 of 30 [0%], P = 0.021) and diagnosed as histomorphologically aspergillosis (6 of 20 [30%] vs. 1 of 30 [3%], P = 0.012) in GM positive group than GM negative group.

These results suggest that positive GM assay results are not uncommon in mucormycosis. GM assay results from the patients with mucormycosis appear to be related with gastrointestinal infections and histomorphologic diagnosis of aspergillosis. Further studies are needed on the mechanism of positive GM results in patients with mucormycosis and its possible coexistence with other fungi such as Aspergillus species in these patients.

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401. Pneumocystis jirovecii Pneumonia in Renal Transplant Recipients After a 6-Month Trimethoprim-Sulfamethoxazole Prophylaxis: A Case–Control Study

Among 3,941 kidney or pancreas-kidney transplant recipients, 67 (1.7%) patients developed PCP after completing early transplantation period chemoprophylaxis. Our study was aimed to evaluate the incidence and risk factors for PCP in KT recipients with 6-month TMP-SMX prophylaxis.

Methods. We performed a case–control study of adult patients diagnosed with PCP from January 2013 to March 2015 in a tertiary care hospital. All patients received 6-month PCP prophylaxis with TMP-SMX after kidney transplantation. If there were rejection episodes, PCP prophylaxis was provided for additional 3 months. During the study period, CMV viremia was not indication of PCP prophylaxis because of the concern of the nephrotoxicity of TMP-SMX. We defined the classification of early or late-onset PCP as one year after transplantation.

Results. Among 3,941 kidney or pancreas-kidney transplant recipients, 67 (1.7%) patients developed PCP after the discontinuation of TMP-SMX prophylaxis. Among donors who were transplanted from other hospitals (n = 14) and pancreas-kidney transplant recipients (n = 6) were excluded. Finally, 47 of KT PCP and 94 control patients were included. Of the 47 patients with PCP, 24 (51%) revealed early PCP while the remaining 23 (49%) exhibited late PCP. Duration of PCP prophylaxis was similar between control and PCP recipients (median 6 months, respectively). In multivariate analysis, rejection (OR, 3.9; 95% CI, 1.4–11.1) and cytomegalovirus infection (OR, 2.4; 95% CI, 1.0–5.8) were independently associated with the development of PCP after TMP-SMX prophylaxis. Rejection or CMV viremia were observed in 70% of patients with PCP. Patients who received rejection (median 6 months; IQR 1–19 months) was slightly shorter than that of CMV viremia (median 9 months; IQR 5–12 months), although this difference did not reach any statistical significance (P = 0.18).

Conclusion. Rejection and CMV viremia appear to be risk factors for the development of PCP after completing early transplantation period prophylaxis. Our data suggest that at least 6- to 9-month chemoprophylaxis for PCP may be needed for KT recipients with rejection or CMV viremia.

Disclosures. All authors: No reported disclosures.

402. Breakthrough Pneumocystis jiroveci Pneumonia Among Cancer Patients: Opportunity for Antimicrobial Stewardship

Among 5,650 patients who were transferred from other hospitals (n = 14) and pancreas-kidney transplant recipients (n = 6) were excluded. Finally, 47 of KT PCP and 94 control patients were included. Of the 47 patients with PCP, 24 (51%) revealed early PCP while the remaining 23 (49%) exhibited late PCP. Duration of PCP prophylaxis was similar between control and PCP recipients (median 6 months, respectively). In multivariate analysis, rejection (OR, 3.9; 95% CI, 1.4–11.1) and cytomegalovirus infection (OR, 2.4; 95% CI, 1.0–5.8) were independently associated with the development of PCP after TMP-SMX prophylaxis. Rejection or CMV viremia were observed in 70% of patients with PCP. Patients who received rejection (median 6 months; IQR 1–19 months) was slightly shorter than that of CMV viremia (median 9 months; IQR 5–12 months), although this difference did not reach any statistical significance (P = 0.18).

Conclusion. Rejection and CMV viremia appear to be risk factors for the development of PCP after completing early transplantation period chemoprophylaxis. Our data suggest that at least 6- to 9-month chemoprophylaxis for PCP may be needed for KT recipients with rejection or CMV viremia.

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