1699. Presentations and Outcomes of Histoplasma capsulatum Infection Vary by Immune Status: A Retrospective Cohort Study
Alexander Franklin, MD; Lindsey Larson, MPH; Sasinuch Rutjanawech, MD; Michael J. Hendrix, MD; William Powderly, MD; Andrej Spec, MD, MSCI, 1 Washington University School of Medicine, St Louis, Missouri; 2 Barnes Jewish Hospital, St Louis, Missouri; Division of Infectious Diseases Washington University in St. Louis, St Louis, Missouri

Session: 165. Mycology
Friday, October 4, 2019: 12:15 PM

Background. Few large cohorts have examined Histoplasma infection across patients with varying immune status in the era of modern antiretroviral therapy. We describe the differences in clinical presentation and outcomes of Histoplasma infection by immune status.

Methods. We conducted a single-center retrospective cohort study of adult patients diagnosed with histoplasmosis from 2002 through 2017. Data included demographics, clinical features, diagnostics, and mortality. Patients were separated into three groups based on their immune status: Immunocompetent (IC), People living with HIV (PLWH), and patients who were HIV negative but were otherwise immunocompromised (OIC). OIC was defined as the presence of any of the following: cancer, chemotherapy, solid-organ or stem-cell transplant, or immunosuppressive medications. Immunocompetence was defined as the absence of HIV and any of the conditions that defined OIC. Localized histoplasmosis was defined as histoplasma infection confined to the lungs and/or hilar and mediastinal lymph nodes. Disease that occurred outside these locations was defined as disseminated.

Results. We identified 263 patients with histoplasma infection: 54 (21%) were PLWH, 99 (28%) were OIC, and 110 (42%) were IC. Disseminated disease was more common among PLWH (76%) and OIC (52%) than among IC patients (32%) (P < 0.001). For survival analysis the HIV and OIC groups were pooled to create a single immunocompromised group. In localized disease mean survival was longer in the immunocompetent group (12.7 years) than in the immunocompromised group (8.9 years) (P = 0.029). For patients with disseminated disease, however, there was no significant difference in mean survival between the immunocompetent group (9.4 years) and the immunocompromised group (9.1 years) (P = .838).

Conclusion. Disseminated disease was more common among immunocompromised than immunocompetent patients. In patients with localized histoplasmosis, mean survival was longer for immunocompetent patients, whereas for patients with disseminated disease there was no significant difference in mean survival.

Disclosures. All authors: No reported disclosures.

Baseline Characteristics of 263 Patients with Histoplasma Infection

| Characteristic                  | Number | Percentage |
|---------------------------------|--------|------------|
| Age (Mean)                      | 49     | 49.8%      |
| Age (Std. dev.)                 | 17     | 17.0%      |
| Male Gender                     | 157    | 59.5%      |
| Race (African American)         | 199    | 75.8%      |
| Race (Caucasian)                | 50     | 19.0%      |
| Race (Other)                    | 14     | 5.3%       |
| PLWH*                           | 54     | 20.5%      |
| Immunocompetent                 | 110    | 41.9%      |
| OIC**                           | 99     | 37.6%      |
| Solid Organ Cancer              | 27     | 10.2%      |
| Hematologic Cancer              | 21     | 8.0%       |
| Chemotherapy                    | 23     | 8.7%       |
| Transplant                      | 28     | 10.6%      |
| Transplant Lung                 | 9      | 3.4%       |
| Transplant Liver                | 8      | 3.0%       |
| Transplant Kidney               | 6      | 2.3%       |
| Transplant Bone Marrow          | 3      | 1.1%       |

**People living with HIV**
**Other Immunocompromise**
***Non-biologic Non-Corticosteroid Immunosuppressant**
****Asymptomatic Lung Nodule

1700. A Rare Case of Candida glabrata Hemorrhagic Cystitis with Empagliflozin Use
Ly Tran, DO; Matthew Thomas, DO; Jeremy Harvey, MD; Rahul Sampath, MD; Richard Rose, MD; 1 Carolinas HealthCare Systems BlueRidge, Hickory, North Carolina; 2 CHS-Blue Ridge Internal Medicine Residency, Lenoir, North Carolina; 3 Carolinas HealthCare System BlueRidge, Morganton, North Carolina

Session: 165. Mycology
Friday, October 4, 2019: 12:15 PM

Background. Hemorrhagic cystitis is an inflammatory condition of the bladder, infrequently seen after cancer chemotherapy, pelvic radiation, and viral infections in immunocompromised hosts.

Methods. We report a case of biopsy-proven Candida glabrata hemorrhagic cystitis in an immunocompetent host associated with empagliflozin use. Empagliflozin is a sodium glucose co-transporter 2 (SGLT2) inhibitor, that increases urinary glucose excretion, and is associated with an increased risk of urogenital mycotic infections.

Results. A 71-year-old man with a history type 2 diabetes, neurogenic bladder status post transurethral resection of the prostate, developed symptoms of pelvic pain and gross hematuria 3 months after the initiation of empagliflozin. The patient received multiple courses of empirical antibiotic therapy without any relief. Six
months into the illness, the patient had significant weight loss, fatigue, progressive renal failure, and continued hematuria. Empagliflozin was self-discontinued by the patient secondary to a perceived relation between symptom onset and medication use. Urine cultures were negative. A CT scan showed mucosal thickening of the bladder wall with hydronephrosis. Cystoscopy was consistent with hemorrhagic cystitis. A bladder biopsy was negative for malignancy, stain and PCR negative for fungi, but culture positive for C. glabrata susceptible to Fluconazole. Mycobacterial stains, cultures, and PCR were negative. The patient was treated with Fluconazole for 4 weeks and experienced symptomatic improvement and resolution of hematuria one week into the therapy.

**Conclusion.** This is the first reported case of C. glabrata hemorrhagic cystitis in an immunocompetent host associated with empagliflozin. Invasive candida infections in the genitourinary system are rare in immunocompetent patients. We believe that empagliflozin-induced glycosuria may have been a predisposing factor.

**Figure 1. Bladder mucosa with extensive hemorrhage and clots.**

**Figure 2.** CT Abdomen with left hydronephrosis and bladder mucosal thickening.

**Disclosures. All authors:** No reported disclosures.

### 1701. Differences in Diagnostic Performance of β-D-Glucan Testing in Patients with Varying Degrees of Susceptibility to Invasive Fungal Infections

**Elieh Nham, MD; Si-Ho Kim, MD; Hyunjoon Lee, MD; Jae-Hoon Ko, MD; Kyungmin Huh, MD; Sun Young Cho, MD, PhD; Cheol-In Kang, MD, PhD; Doo Ryeon Chung, MD, PhD; Kyoung Ron Peck, MD, PhD; Samsung Medical Center, Seoul, Seoul-tukpyolsi, Republic of Korea**

**Session:** 165. Mycology  
**Friday, October 4, 2019: 12:15 PM**

**Background.** Usefulness of β-D-glucan (BDG) testing in high-risk patients for invasive fungal infection (IFI) diagnosis has been well demonstrated. However, data on its usefulness in patients without risk factors are limited. We evaluated differences in the diagnostic performance of BDG testing in patients with varying degrees of susceptibility to IFI.

**Methods.** From April 2017 to May 2018, all consecutive patients (≥18 year-old) who were performed BDG testing (Beijing Gold Mountainer Tech) were enrolled. Patients were classified into three groups: Group A for patients with host factors defined by 2008 European Organization for Research and Treatment of Cancer-Mycoses Study Group diagnostic (EORTC-MSG) criteria, Group B for patients with malignancy receiving recent chemotherapy within 1 month without host factors, and Group C for others. Cases of proven and probable IFI defined by EORTC-MSG criteria, Pneumocystis pneumonia and all fungemia were considered as true IFIs. Sensitivity, specificity, positive and negative predictive value (PPV and NPV) were calculated with a cut-off value for positivity of 200 pg/mL.

**Results.** Among 473 eligible patients, 190, 142, and 141 patients were classified into group A, B, and C, respectively. Rates of true IFI were significantly different in each group (57/190, 19/142, and 10/141 in each group, P < 0.001). Sensitivities were 0.83 ± 0.08, and specificities were 0.70 ± 0.59, and 0.63 in group A, B, and C, respectively. PPVs were considerably different among three groups (PPV for 0.48, 0.20, and 0.12; NPV for 0.89, 0.92 and 0.97 in each group, respectively).

**Conclusion.** The BDG test is a useful assay for IFI diagnosis; however, the clinical interpretation should be different by patient risks. Whereas BDG testing could be considered as a tool for predicting IFI in high-risk patients, it only could be a tool for excluding IFI in patient without risk factors.

**Disclosures. All authors:** No reported disclosures.

### 1702. Prevalence and Risk Factors for Endogenous Fungal Endophthalmitis in Adult Patients with Candidemia at a Tertiary Care Hospital in South Korea Over 13 years

Jong Hun Kim, MD; Jin Woong Soh, MD; You Seung Chung, MD; Young Kyung Yoon, MD; Jang Wook Sohn, MD; Min Ja Kim, MD, PhD; Hyung Min Jang, MD, PhD; Min Jae Kim, MD; Yong Pil Chong, MD; Sang Oh Lee, MD; Sang Ho Choi, MD; Jun Hee Woo, PhD; Yang Soo Kim, MD; Sung Han Kim, MD; Dongguk University Ilsan Hospital, Ilsandong-gu, Goyang-si, Kyonggi-do, Republic of Korea, 2Korea University College of Medicine, Seoul, Seoul-tukpyolsi, Republic of Korea, 3Institute of Emerging Infectious Diseases, Korea University, Seoul, Seoul-tukpyolsi, Republic of Korea

**Session:** 165. Mycology  
**Friday, October 4, 2019: 12:15 PM**

**Background.** Endogenous fungal endophthalmitis is one of the critical complications of candidemia in adult patients. We conducted a study to investigate the prevalence and risk factors for endogenous fungal endophthalmitis in adult patients with candidemia.

**Methods.** Adult patients ≥19 years with candidemia who underwent ophthalmological examination after the diagnosis of candidemia at a tertiary care hospital in South Korea from 2006 to 2018 were enrolled, and clinical data were collected.

**Results.** There was a total of 152 adult patients with candidemia who underwent an ophthalmological examination. Endogenous fungal endophthalmitis was found in 29 patients (19.1%). Patients were categorized into two groups (Non-endophthalmitis [NE] and endophthalmitis [E]). Between two groups, there was no significant difference in terms of age, sex, underlying comorbidities. Also, no difference in clinical conditions at the diagnosis of candidemia was noted including concomitant bacteremia, presence of septic shock, receipt of recent surgery, presence of neutropenia, total parenteral nutrition, central venous catheter, urinary catheter, ventilator, dialysis, use of antibiotics, and Candida spp. colonization. However, there was a higher rate of abnormal alanine aminotransferase (ALT) in the E (35.7%) than in the NE (14.8%), P = 0.008. Moreover, the proportion of C. albicans candidemia was higher in the E (65.5%) than in the NE (35.8%), P = 0.003. In contrast, C. parapsilosis candidemia was more common in the NE (29.6%) than in the E (6.9%), P = 0.018. Although there was a trend of higher mortality rate in the E (51.7%) than in the NE (35.0%), no statistical significance was observed, P = 0.095. Multivariate logistic analysis showed C. albicans candidemia (odds ratio [OR] 4.122, 95% confidence interval [CI] 1.653–10.280, P = 0.002) and abnormal ALT (OR 3.839, 95% CI 1.427–10.333, P = 0.008) were significantly associated with E cases.

**Conclusion.** Endogenous fungal endophthalmitis occurred in 19% of adult patients with candidemia. C. albicans candidemia and abnormal ALT were significantly associated with endophthalmitis. Adult patients with candidemia caused by C. albicans or having abnormal ALT need to be closely monitored for the possibility of endophthalmitis.

**Disclosures. All authors:** No reported disclosures.

### 1703. Bacterial or Fungal Co-Infection in Patients with Mucormycosis

Sungjin Choi, Master; Hyo-Ju Son, Master; Jong-A Jung, MD; Seung-Ki Lee, MD; Min Jae Kim, MD; Yong Pil Chong, MD; Sang; Oh Lee, MD; Sang-Ho Choi, MD; Jun Hee Woo, PhD; Yang Soo Kim, MD; Sung Han Kim, MD; Dongguk University Ilsan Hospital, Ilsandong-gu, Goyang-si, Kyonggi-do, Republic of Korea, 2Department of Infectious Diseases, Songpa-gu, Seoul-tukpyolsi, Republic of Korea, 3Asan Medical Center, Songpa-gu, Seoul-tukpyolsi, Republic of Korea

**Session:** 165. Mycology  
**Friday, October 4, 2019: 12:15 PM**

**Background.** There is a growing concern on infections with multiple organisms including fungi in patients with mucormycosis. However, limited data are available on co-infection in patients with mucormycosis.

**Methods.** Patients with proven mucormycosis were retrospectively enrolled at a tertiary hospital from July 2009 to January 2019. Proven mucormycosis was defined as positive fungal culture result for mucormycosis from a sterile biopsy specimen and/or histologic evidence of tissue invasion of hyphae with positive mucormycosis immunohistochemistry test result. We reviewed other pathogens isolated from sterile or non-sterile sites before and after 7 days from the biopsy for infected tissue that suggested a true fungal infection.

**Results.** A total of 37 patients were included in the analysis. Of the 37 patients, 29% (n = 11) had a bacterial or fungal co-infection. The most common co-infection was C. albicans (36%), followed by C. tropicalis (27%). There was no significant difference in terms of age, sex, underlying comorbidities. Also, no difference in clinical conditions at the diagnosis of mucormycosis was noted including concomitant bacteremia, presence of septic shock, receipt of recent surgery, presence of neutropenia, total parenteral nutrition, central venous catheter, urinary catheter, ventilator, dialysis, use of antibiotics, and Mucormycosis spp. colonization. However, there was a higher rate of abnormal alanine aminotransferase (ALT) in the E (35.7%) than in the NE (14.8%), P = 0.008. Although there was a trend of higher mortality rate in the E (51.7%) than in the NE (35.0%), no statistical significance was observed, P = 0.095. Multivariate logistic analysis showed C. albicans candidemia (odds ratio [OR] 4.122, 95% confidence interval [CI] 1.653–10.280, P = 0.002) and abnormal ALT (OR 3.839, 95% CI 1.427–10.333, P = 0.008) were significantly associated with E cases.

**Conclusion.** Endogenous fungal endophthalmitis occurred in 19% of adult patients with candidemia. C. albicans candidemia and abnormal ALT were significantly associated with endophthalmitis. Adult patients with candidemia caused by C. albicans or having abnormal ALT need to be closely monitored for the possibility of endophthalmitis.

**Disclosures. All authors:** No reported disclosures.