Prevalence of and Factors Associated with Clostridium difficile Co-infection Among Patients with Candidemia, United States, 2014–2016

Sharon Tsay, Centers for Disease Control and Prevention
Kaitlin Benedict, Centers for Disease Control and Prevention
Zintars G. Beldavs, Oregon Health Authority
Monica Farley, Emory University
Lee H. Harrison, Maryland Emerging Infections Program
William Schaffner, Vanderbilt University
Taryn Gerth, Centers for Disease Control and Prevention
Tom Chiller, Emory University
Snigdha Vallabhaneni, Centers for Disease Control and Prevention

Journal Title: Open Forum Infectious Diseases
Volume: Volume 4, Number suppl_1
Publisher: Oxford University Press (OUP) | 2017-10-04, Pages S55-S55
Type of Work: Article | Final Publisher PDF
Publisher DOI: 10.1093/ofid/ofx162.127
Permanent URL: https://pid.emory.edu/ark:/25593/s6g32

Final published version: http://dx.doi.org/10.1093/ofid/ofx162.127

Copyright information:
© The Author 2017. Published by Oxford University Press on behalf of Infectious Diseases Society of America. This is an Open Access work distributed under the terms of the Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International License (http://creativecommons.org/licenses/by-nc-nd/4.0/).

Accessed August 18, 2019 3:52 AM EDT
1779. Prevalence of and Factors Associated with Cryptococcosis Among Patients with Candidemia, United States, 2014–2016  
Sharon Tao, MD;2,3 Kailtin Benedict, MPH;4 Zintars G. Beldavs, MS;5 Monica M. Farley, MD, FIDSA;6 Lee H. Harrison, MD;7 William Schaffner, MD, FIDSA, FIDSA;8,9 Taryn Green, MPH;10 Tom Chiller, MD, MPH;10 Snigdha Vallabhaneni, MD, MPH;10 Mycotic Diseases Branch, Centers for Disease Control and Prevention, Atlanta, Georgia;2 Epidemiologic Intelligence Service, Centers for Disease Control and Prevention, Atlanta, Georgia;3 Oregon Health Authority, Portland, Oregon;4 Oregon Emerging Infections Program, Portland, Oregon;5 Oregon;6 Division of Infectious Diseases, University of Minnesota, Minneapolis, Minnesota;7 Maryland Emerging Infections Program, Baltimore, Maryland;8 Johns Hopkins Bloomberg School of Public Health, Baltimore, Maryland;9 Vanderbilt University School of Medicine, Nashville, Tennessee;10Tennessee Emerging Infections Program, Nashville, Tennessee  
**Session:** 216. The Fungus Among Us – Clinical Advances  
**Saturday, October 7, 2017: 8:30 AM**  
**Background.** Candidemia and Cryptococcus infection (CDI) are common healthcare-associated infections (HAIs) and share risk factors such as antibiotic use and prolonged hospitalization. CDI and CDI treatment disrupt gut microbial diversity, allowing Candida overgrowth and translocation to the bloodstream. We describe CDI co-infection among patients with candidemia.  
**Methods.** Population-based surveillance for candidemia was conducted through CDC's Emerging Infections Program during 2014–2016. A case of candidemia was defined as a blood culture positive for Candida species collected from a surveillance area resident. Demographic and medical information, including occurrence of CDI, was collected. We defined co-infection as CDI within 90 days of candidemia and performed bivariable analysis to assess factors associated with co-infection.  
**Results.** Among 2129 cases of candidemia, 190 (9%) had CDI co-infection; 116 (6%) had co-infection in the first 14 days (time from CDI to Candida isolation 4.0 ± 2.9 days). The median age of those with CDI-candidemia co-infection was 61 years and 100 (52%) were male. Compared with candidemia alone, the odds of CDI with co-infection were significantly greater for patients with black race (OR 1.44, 95% CI 1.05–1.90), those with diabetes (OR 1.68, 1.24–2.27), pancreatitis (OR 1.91, 1.01–3.61), or solid organ transplant (OR 4.15, 2.09–8.22). Those with co-infection had higher odds of certain healthcare exposures: hemodialysis (OR 2.27, 1.57–3.28), hospital stay in the past 90 days (OR 1.90, 1.37–2.64), ICU admission in the past 14 days (OR 1.78, 1.20–2.66), and central venous catheter (CVCV) at the time of candidemia. Black race, certain underlying conditions, hemodialysis, previous hospitalization, and ICU stay, and the presence of a CVC were associated with co-infection. Clinicians should be vigilant for concomitant CDI and candidemia, particularly in situations with associated risk factors.  
**Disclosures.** W. Schaffner, Pfizer: Scientific Advisor, Consulting fee; Merck: Scientific Advisor, Consulting fee; Novavax: Consultant, Consulting fee; Dynavax: Consultant, Consulting fee; Sanofi-pasteur: Consultant, Consulting fee; GSK: Consultant, Consulting fee; Seqirus: Consultant, Consulting fee.

1780. Routine Cryptococcal Antigen Screening in Solid Organ Transplant Recipients: Is It Time To Save Lives and Money?  
Ige George, MD;1,2 Radha Rajasingshan, MD;2,3 William Powderly, MD;1,3 David Boulware, MD, MPH;1,3 Washington University School of Medicine, Saint Louis, Missouri;2 Infectious Diseases & International Medicine University of Minnesota, Minneapolis, Minnesota;3 Division of Infectious Diseases, Washington University, St. Louis, Missouri;4 Division of Infectious Diseases and International Medicine, Department of Medicine, University of Minnesota, Minneapolis, Minnesota  
**Session:** 216. The Fungus Among Us – Clinical Advances  
**Saturday, October 7, 2017: 8:30 AM**  
**Background.** Cryptococcosis affects 1 in 270 solid organ transplant (SOT) recipients with high mortality. In HIV-infected patients, cryptococcal antigen (CRAG) is detectable in blood weeks to months before symptomatic infection and screening is recommended. No screening guidelines exist for SOT recipients.  
**Methods.** We performed a cost-effectiveness analysis of CRAG screening amongst SOT recipients. We estimated costs of screening from Medicare reimbursement of $16.49 for CPT 87899 (Infectious agent antigen detection by immunoassay). We determined the number at risk from a large cohort of 42,634 adult SOT recipients from ICD-9 CM billing data from HCUP State Inpatient Databases of Florida (2006–2012), New York (2006–2011), and California (2004–2010). Cost of screening was compared with the cost of inpatient hospitalization.  
**Results.** Among 42,634 adult SOT recipients, 158 (0.37%) developed cryptococcosis at a median time of 15.5 months (range 0.1–80) after transplant. During the 43 month follow-up, there was approximately 2.5% annual mortality. The estimated costs of care for cryptococcal meningitis per person is approximately $70,000 in 2016 with current explosive cost of flucytosine at ~$29,000 per 2 weeks. Thus, the total estimated cost of hospital care in the cohort would be $11.0 million in 2016. In comparison, the cost to screen all 42,634 SOT recipients every three months would be $58.8 million. CRAG screening could detect 75% of asymptomatic cryptococcal antigenemia prior to symptomatic disease requiring prolonged hospitalization, it would be approximately cost neutral (11.5 million), and even cost saving if above 80% of hospitalizations are averted. Alternatively stated, for every one hospitalization avoided, 4245 persons could be CRAG screened for similar cost and likely better outcome.  
**Conclusion.** Assuming the ability of routine screening to identify 75% of patients who would develop invasive cryptococcosis; CRAG screening every 3 months among SOT recipients likely would be at least cost neutral to the healthcare system. Antecedent duration of cryptococcal antigenemia prior to symptomatic disease in Non-HIV/SOT cohorts of individuals could inform optimal screening intervals should be further studied. Prospective SOT cohorts should validate this approach to save lives in a cost-effective manner.  
**Disclosures.** All authors: No reported disclosures.