Background. Invasive aspergillosis (IA) remains a burdensome illness and is associated with substantial mortality. With increasing use of aggressive chemotherapy and immunomodulatory treatments, the prevalence of IA is likely to have grown. However, little is known about the current US burden of IA-related hospitalizations.

Methods. Using aggregated data available on the interactive website from the Agency of Healthcare Research and Quality's Health Care Utilization Project Net, we examined the annual volume of IA-related hospitalizations in the United States, based on the presence of the ICD-9-CM codes 117.3, 117.9, and 484.6. Age-adjusted volumes were derived through population incidence calculated using year-specific census and intercensal US population estimates available from the US Census Bureau. We additionally determined time trends in IA as the principal diagnosis (PD) and its associated charges.

Results. Between 2004 and 2013, the number of annual hospitalizations with IA grew from 29,774 (standard error, SE 2,425) to 51,870 (SE 2,642), a 74.2% overall increase. This increase was most notable among those aged 45–64 and 65–84 years. Regionally, the South contributed the plurality of the cases (40%), and the Northeast the fewest (17%) with the remainder split evenly between the West and the Midwest. When age-adjusting to year 2013, the growth in the volume of cases was slightly more modest (44.2%), going from 35,968 cases in 2004 to 51,870 in 2013. The proportion of IA hospitalizations in which IA was the PD dropped, from 14.4% in 2004 to 9.3% in 2013. Despite mean hospital length of stay (LOS) decreasing from 13.3 (SE 0.07) in 2004 to 11.5 (SE 0.6) days in 2013, the corresponding mean hospital charges rose from $71,164 (SE $5,248) to $123,005 (SE $9,738). The aggregate US inflation-adjusted hospital charges for IA PD rose from $436,074,445 in 2004 to $592,358,369 in 2013.

Conclusion. The rate of growth in IA-related hospitalizations in the United States between 2004 and 2013 was substantial. The plurality of cases appears to arise in the South. Despite a moderate decrease in LOS during the time period studied, there was a modest rise in the corresponding hospital charges. The aggregate US annual hospital bill for IA PD discharges is over $0.5 billion.

Disclosures. M. D. Zilberberg, Astellas Pharma Global Development, Inc.: grant investigator, research support R. Harrington, Astellas Pharma Global Development, Inc.: employee, former employee and salary J. Spalding, Astellas Pharma Global Development, Inc.: employee, salary A. P. Shorr, Astellas Pharma Global Development, Inc.: Consultant and Speaker’s Bureau, research support and speaker honorarium Cidara: consultant, consulting fee Merck: consultant, scientific advisor and Speaker’s Bureau, research support and speaker honorarium

149. β-D-Glucan Testing Is Overused in Patients Without Solid Organ/Stem Cell Transplant or Hematologic Malignancies
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Background. The β-d-glucan (BDG) assay aids in diagnosis of some invasive fungal infections (IFI) in at-risk patients. Due to an increase in the number of BDG tests ordered at Johns Hopkins Hospital in patients not at high risk for IFI, we evaluated the appropriateness of testing and conducted a survey to understand providers’ knowledge about the test.

Methods. From December 2015 to July 2016, we identified inpatients >17 years with at least one BDG test. We did not evaluate patients with solid organ/stem cell transplant or hematologic malignancies as they generally have indications for BDG testing. Using a standard data collection form, one infectious disease (ID) physician reviewed all test for appropriateness; 20% of cases were reviewed by an additional ID physician. Data were collected on demographics, comorbidities, medications, procedures, central lines, vital signs, and labs. Multivariable analyses were then constructed parsimoniously from these variables.

Results. Of 1,873 candidemia events, 59 were due to CK. In multivariable analysis, CK candidemia was predicted by hematologic malignancy (OR 8.9, 95% CI [4.1, 19.7]), stomach cancer (OR 14.6, 95% CI [2.9, 72.5]), absolute neutrophil count (OR 2.4, 95% CI [1.2, 4.8]), and the use of prophylactic azole antifungals (OR 2.2, 95% CI [1.1, 4.3]), monoclonal antibodies (OR 5.7, 95% CI [2.0, 15.8]), and penicillin β-lactamase inhibitors (OR 2.5, 95% CI [1.3, 4.6]). The C-statistic was 0.86 (95% CI [0.81, 0.91]). The crude mortality rates were 86.4% for CK candidemia and 63.6% for non-CK candidemia. Although CK was associated with higher mortality in univariable Cox regression (Figure 1, HR 1.8, 95% CI [1.3, 2.4]), this relationship was no longer significant (HR 1.2, 95% CI [0.8, 1.7]) with the addition of the following confounders: hematologic malignancy (HR 0.9, 95% CI [0.9, 1.0]), coagulopathy (HR 1.7, 95% CI [1.4, 2.2]), stomach cancer (HR 1.0, 95% CI [0.5, 1.9]), and prophylactic corticosteroids (HR 1.4, 95% CI [1.2, 1.7]) (Figure 2).

Conclusion. A similar set of patient characteristics is associated with both CK infections and increased mortality; suggesting that patients with CK candidemia are at higher risk of mortality due to underlying illness rather than organism-specific mechanisms.

Figure 1. Univariable 90-day survival analysis stratified by CK (red) versus non-CK (blue) candidemia.

150. Risk Factors and Mortality Associated with Candida krusei Bloodstream Infections
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Background. Candida krusei (CK) candidemia is associated with high mortality, but whether this is due to underlying comorbidities in affected patients or the organism itself is unknown. We analyzed factors associated with CK and mortality, respectively. Multivariable analyses were then constructed parsimoniously from these variables.

Results. Of 1,873 candidemia events, 59 were due to CK. In multivariable analysis, CK candidemia was predicted by hematologic malignancy (OR 8.9, 95% CI [4.1, 19.7]), stomach cancer (OR 14.6, 95% CI [2.9, 72.5]), absolute neutrophil count (OR 2.4, 95% CI [1.2, 4.8]), and the use of prophylactic azole antifungals (OR 2.2, 95% CI [1.1, 4.3]), monoclonal antibodies (OR 5.7, 95% CI [2.0, 15.8]), and penicillin β-lactamase inhibitors (OR 2.5, 95% CI [1.3, 4.6]). The C-statistic was 0.86 (95% CI [0.81, 0.91]). The crude mortality rates were 86.4% for CK candidemia and 63.6% for non-CK candidemia. Although CK was associated with higher mortality in univariable Cox regression (Figure 1, HR 1.8, 95% CI [1.3, 2.4]), this relationship was no longer significant (HR 1.2, 95% CI [0.8, 1.7]) with the addition of the following confounders: hematologic malignancy (HR 0.9, 95% CI [0.9, 1.0]), coagulopathy (HR 1.7, 95% CI [1.4, 2.2]), stomach cancer (HR 1.0, 95% CI [0.5, 1.9]), and prophylactic corticosteroids (HR 1.4, 95% CI [1.2, 1.7]) (Figure 2).

Conclusion. A similar set of patient characteristics is associated with both CK infections and increased mortality; suggesting that patients with CK candidemia are at higher risk of mortality due to underlying illness rather than organism-specific mechanisms.

Figure 2. Multivariable 90-day survival analysis stratified by CK (red) versus non-CK (blue) candidemia.

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