Table 1: Cryptococcal presentation and infectious disease testing by patient risk groups

| Risk Group | Total (n) | Positive (n) | Non-Positive (n) | Odds Ratio (95% CI) |
|------------|-----------|--------------|------------------|---------------------|
| HIV-infected patients | 172 (37.9) | 17 (31.5) | 155 (33.5) | 0.78 (0.33 - 1.83) |
| Solid organ transplant recipients | 30 (6.6) | 3 (5.8) | 27 (5.7) | 1.42 (0.29 - 7.2) |
| Non-HIV/non-transplant patients | 520 (114.8) | 136 (25.7) | 384 (81.1) | 0.55 (0.37 - 0.84) |

Table 2: Results of diagnostic testing for cryptococcal meningitis in three patient groups

| Risk Group | Total (n) | Positive (n) | Non-Positive (n) | Odds Ratio (95% CI) |
|------------|-----------|--------------|------------------|---------------------|
| Abnormal CSF protein, and/or cortex (%) | 11/15 (72.6) | 6/7 (85.7) | 5/8 (62.5) | 0.53 (0.07 - 3.61) |
| Positive India ink (%) | 12/16 (75) | 3/6 (50) | 9/10 (90) | 0.42 (0.04 - 5.19) |
| Positive CNS cultures (%) | 13/17 (70.9) | 7/7 (100) | 6/10 (60) | 0.47 (0.05 - 4.77) |
| Positive serum Ag (%) | 11/14 (78.6) | 5/5 (100) | 6/9 (66.7) | 0.40 (0.04 - 4.41) |
| Positive CSF AsG f culture is also positive (%) | 12/12 (100) | 3/4 (75) | 9/8 (112.5) | 0.43 (0.05 - 3.6) |

Figure 1: Percent positive test results by patient group for cryptococcal meningitis

Disclosures. All authors: No reported disclosures.

1706. Use of Management Bundles as a Checklist for Candidemia: Impact of Compliance on Clinical Outcomes in a Multicenter Study in Japan

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Background. We previously developed management bundles for candidemia and beneficial effects on clinical outcomes were shown in compliant patients (IAC 2015). However, there is a risk for bias because some elements cannot be achieved in patients who have an early death.

Methods. Patients with candidemia who were treated at six medical centers between 2015 and 2017 were prospectively evaluated. Bundle elements consisted of removal of central venous catheters within 24 hours, initial appropriate selection and subsequent fatal outcome. More than 90% of patients with SFTS had leukopenia and about one-third of those need the admission of intensive care unit (ICU) during the hospital course. So, there has been growing concern about the complications such as invasive pulmonary aspergillosis (IPA) in critical SFTS patients. We thus investigate the incidence and clinical characteristics of IPA in patients with SFTS.

Results. All patients who were confirmed as SFTS in a tertiary care hospital, Seoul, South Korea, between January 2013 and October 2018 were enrolled. The modified AspICu algorithm was used to identify cases of putative invasive pulmonary aspergillosis (PIPA) and discriminate these invasive diseases from colonization.

Conclusion. More than half of patients with SFTS in ICU were complicated by IPA during early hospital course. Cautious scrutiny for IPA in patients with SFTS followed by early appropriate antifungal therapy for IPA is needed.

Table 1. Demographic and clinical characteristics of SFTS patients

| Variable | Total (n) | PIPA (n) | Non-PIPA (n) | p-value |
|----------|-----------|----------|-------------|---------|
| Age, years, mean ± SD | 61 (29.1) | 36 (22.9) | 25 (36.2) | 0.589 |
| Male | 27 (60.6) | 15 (56) | 12 (48) | 1.000 |
| Chronic kidney disease | 0 (0.0) | 0 (0.0) | 0 (0.0) | 0.834 |
| Liver cirrhosis | 1 (2.2) | 1 (2.2) | 0 (0.0) | 1.000 |
| Diabetes | 11 (24.4) | 6 (13.5) | 5 (20.0) | 0.190 |
| Lung disease | 6 (13.5) | 3 (6.5) | 3 (12.0) | 0.083 |
| Antigenemia | 3 (6.5) | 1 (2.0) | 2 (8.0) | 0.497 |
| Solid tumor | 2 (4.0) | 1 (2.0) | 1 (4.0) | 1.000 |
| Hematologic malignancy | 0 (0.0) | 0 (0.0) | 0 (0.0) | 0.000 |
| Transplantation | 0 (0.0) | 0 (0.0) | 0 (0.0) | 0.000 |
| Human immunodeficiency virus | 0 (0.0) | 0 (0.0) | 0 (0.0) | 0.000 |
| Intravenous drug use | 0 (0.0) | 0 (0.0) | 0 (0.0) | 0.000 |
| Symptoms and signs at initial presentation | 0 (0.0) | 0 (0.0) | 0 (0.0) | 0.000 |

28-day mortality (4.7% vs. 19.7%, odds ratio 0.19, 95% confidence interval 0.05–0.63). However, compliance did not affect clinical success (92.2% vs. 82.0%, odds ratio 2.13, 95% CI 0.77–5.86). Non-Candida albicans, disseminated candidiasis, and total parenteral nutrition were independent factors for poor clinical success. Severe severity and total parenteral nutrition were independent factors for 28-day mortality.

Conclusion. With prospective use of bundles as a checklist in patients with candidemia, compliance of bundles has been a beneficial effect on clinical outcomes. This result was supported by AMED (IP18fsd 10045).

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1707. Invasive Pulmonary Aspergillosis in Patients with Severe Fever with Thrombocytopenia Syndrome

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Background. Severe fever with thrombocytopenia syndrome (SFTS) is an emerging tick-borne disease often accompanied by immune catastrophic course and subsequent fatal outcome. More than 90% of patients with SFTS had leukopenia and about one-third of those need the admission of intensive care unit (ICU) during the hospital course. There is growing concern about the complications such as invasive pulmonary aspergillosis (IPA) in critical SFTS patients. We thus investigate the incidence and clinical characteristics of IPA in patients with SFTS.

Methods. All patients who were confirmed as SFTS in a tertiary care hospital, Seoul, South Korea, between January 2013 and October 2018 were enrolled. The modified AspICu algorithm was used to identify cases of putative invasive pulmonary aspergillosis (PIPA) and discriminate these invasive diseases from colonization.

Results. Of the 45 PCR-confirmed SFTS patients, 16 (36%) received ICU care. Of these 16 patients, 9 (56%) developed PIPA during hospitalization. The median duration from admission to the first evidence of IPA was 8 days (range, 2–11 days). None of the PIPA cases met the revised EORTC/MSG criterion. Septic shock and corticosteroid administration preceded more frequently in PIPA group than non-PIPA group (100% vs. 19%, P < 0.0001 and 67% vs. 14%, P = 0.003, respectively). Patients complicated by PIPA showed significantly higher mortality than non-PIPA patients (44% vs. 8%, P = 0.014 by log-rank test). Mortality was lower in patients with PIPA who received antifungal treatment (17% [1/6]) than in those with PIPA who did not (100% [3/3]) (log-rank test, P = 0.002).

Conclusion. More than half of patients with SFTS in ICU were complicated by IPA during early hospital course. Cautious scrutiny for IPA in patients with SFTS followed by early appropriate antifungal therapy for IPA is needed.
Background: Coccidioidomycosis (CM) is caused by inhalation of spores of the soil-dwelling Coccidioides spp. fungus; infection can lead to severe respiratory or disseminated disease. In California, reported cases increased 222% since 2014 (2,316 cases) peaking in 2017 with 7,466 cases (rate 18.1/100,000 population), the highest annual reported cases on record. We reviewed the California hospital CM data to describe trends, demographics, comorbidities, and risk factors for in-hospital death.

Methods: Using 2000–2017 California administrative hospital discharge data, we identified hospitalizations with ≥1 CM-associated International Classification of Diseases, Ninth or Tenth revision code. We calculated incidence rates per 100,000 population, assessed trends by negative binomial regression, and compared patient characteristics for potential risk factors for in-hospital death by calculating age-adjusted odds ratios (aOR) using bivariate logistic regression (significance, P < 0.05).

Results: From 2000 to 2017, 25,372 patients were hospitalized with a CM discharge code in California, and hospitalization rates increased significantly from 2.3 to 5.8/100,000 population (P < 0.01) (Figure 1). Most patients were male (69%), >40 years old (69%), white (40%) or Hispanic (38%), and residents of the higher incidence CM regions in California (52%). Most (83%) were not immunocompromised; only 3% had a human immunodeficiency virus (HIV) diagnosis. A total of 1,851 (8%) patients died in-hospital with more deaths among those with disseminated CM (15%), particularly meningitis (17%), than with pulmonary disease (7%). Frequency of death increased with increasing age (0–19 years [2%], 20–39 years [5%], 40–59 years [7%], 60+ years [13%]). Odds of in-hospital death was highest among patients with HIV (aOR 6.4, 95% CI 5.3–7.7) or chronic kidney disease (aOR 2.6, 95% CI 2.3–2.8) (Figure 2).

Conclusion: CM-associated hospitalization rates have increased in California in the last 18 years, peaking in 2017, with 1 in 12 patients dying in-hospital. Risk factors for death include disseminated CM, older age, HIV infection, and chronic kidney disease. Clinicians should be aware of these risks in caring for patients hospitalized with CM.