(T2C) results in a few hours, but concomitant cultures are also needed. We compared results from the T2C with β-1,3-glucan (BDG), blood cultures (BCx) and the Candida Sepsis Score (CSSc) in diagnosis and management of candidemia.

Methods. This retrospective observational study included patients from July 2017 to December 2018 who had a T2C as well as BCx. Positive (+) and negative (−) results of BCx and BDG within 24 hours (24h) of T2C were recorded, with clinical data to determine CSSc at the time of T2C (recent surgery, severe sepsis, parenteral nutrition, multifocal candida colonization).

Results. There were 648 T2Cs done over the study period. Only the first +T2C for patient with multiple T2Cs on admission was included. There were 41 patients with +T2, in which 31 had a 24hBCx. Two patients were of pediatric age. There were 7 neutropenic, 1 post-transplant, and 27 intensive care (ICU) patients. Reasons for ordering T2C included sepsis and persistent fever. In 18 (44%) patients, antifungals were given prior to the T2C. Eight among 31 24hBCx were positive for concordant Candida spp. (26%). Six of these 8 patients were on antifungal therapy when T2C was sent. Seventeen patients had a 24hBDG, with 7 positive (41%). Overall mean CSSc in 27 ICU patients with +T2 was 2.2 ± 0.8, and 40% of adult non-neutropenic ICU patients had a CSSc of 3 or above. A central line was present in 26 patients, and was removed in 16 after +T2. In 213 patients with −T2C who had 24hBCx, only 1 BCx was positive, from a PICC line in a 2-year-old patient. Seven of the 41 patients with +T2C were treated for deep-seated candidiasis with 6 weeks antifungal therapy or longer; others received treatment for 1 week. Thirteen patients died while on antifungal therapy.

Conclusion. T2Candida was used for diagnosis and management of candidemia in patients who had concomitant blood culture positive in 26%, β-1,3-glucan positive in 41%, and ICU Candida sepsis score 3 or above in 40% patients. It did not miss candidemia in adults compared with blood culture within 24 hours. Positive T2Candida helped expedite source control e.g line g. ligation.

Disclosures. All authors: No reported disclosures.

251. Implementation of the Sōna Coccidioides Antibody Lateral Flow Assay in the Clinical Laboratory Proves to Reduce Cost and Decrease Turnaround Time When Compared with Send out Immunodiffusion and Complement Fixation Testing

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Session: 40. Fungal Diagnostics
Thursday, October 3, 2019: 12:15 PM

Background. Coccidioidomycosis (Valley fever) is an airborne, invasive fungal infection endemic to Arizona, California, Mexico, and Central and South America. The dominant method of diagnosis is serology, which includes complement fixation (CF), immunodiffusion (ID), and enzyme immunoassay (ELIA). These serological assays require highly trained personnel and are time consuming, with turnaround times (TAT) that range anywhere from 5 days to 2 weeks. Due to costs of send out and long TAT, Valley fever presents a diagnostic challenge to physicians and laboratories. Immunodiagnostics developed the sōna Coccidioides Antibody Lateral Flow Assay (LFA), a rapid and simple diagnostic assay that detects anti-Coccidioides antibodies in patient serum in 30 minutes.

Methods. We tested the sōna Coccidioides antibody LFA using 315 patient specimens and compared cost-analysis and TAT to a send-out reference lab ID and CF assays.

Results. In this study, we found that after implementing the sōna Coccidioides Antibody LFA test, the cost of send-outs reduced by 84% and the cost of all testing reduced by 68%. The TAT for sending out testing averaged 5–10 days, whereas the sōna Coccidioides Antibody LFA averaged a total TAT of <24 hours.

Conclusion. The sōna Coccidioides Antibody LFA offers a rapid, simple, and inexpensive method for accurately detecting antibodies against Coccidioides spp. in patient serum.

Disclosures. All authors: No reported disclosures.

252. Development and Evaluation of a Novel MultiCodE Real-Time PCR Assay for the Detection of Pneumocystis jirovecii in Bronchoalveolar Lavage Fluid and Induced Sputum

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Background. Pneumocystis jirovecii is a medically important fungal pathogen responsible for opportunistic infections in immunocompromised hosts with high mortality and morbidity. Compared with standard microscopy based assays, home-brew nucleic acid amplification tests (NAAT) have emerged as sensitive tools for the diagnosis of P. jirovecii pneumonia, but their sensitivities vary depending upon selected genetic targets. Recent studies suggest that the mitochondrial small subunit (mtSSU) is a better NAAT target given its higher copy number and stable expression in the disease process. We aimed to develop and evaluate a mtSSU-targeted MultiCodE real-time PCR assay that incorporates a sample processing control (SPC) and enables detection of P. jirovecii in bronchoalveolar lavage fluid (BALF) and induced sputum.

Methods. Firstly, we compared manual DNA extraction using Zymo Quick DNA strain, and quantified with a home-brew quantitative TaqMan PCR. Lastly, the performance characteristics of the MultiCodE PCR assay were determined.

Results. Mechanical grinding of BALF or sputum before the easyMAG based extraction was better than the other extraction protocols as evidenced by lower Ct of mtSSU or SPC. Diluted SPC added to samples before DNA extraction made its Ct within 31–34. With 31 24hBCx were positive for concordant Candida spp. (26%). Six of these 8 patients were on antifungal therapy when T2C was sent. Seventeen patients had a 24hBDG, with 7 positive (41%). Overall mean CSSc in 27 ICU patients with +T2 was 2.2 ± 0.8, and 40% of adult non-neutropenic ICU patients had a CSSc of 3 or above. A central line was present in 26 patients, and was removed in 16 after +T2. In 213 patients with −T2C who had 24hBCx, only 1 BCx was positive, from a PICC line in a 2-year-old patient. Seven of the 41 patients with +T2C were treated for deep-seated candidiasis with 6 weeks antifungal therapy or longer; others received treatment for 1 week. Thirteen patients died while on antifungal therapy.

Conclusion. T2Candida was used for diagnosis and management of candidemia in patients who had concomitant blood culture positive in 26%, β-1,3-glucan positive in 41%, and ICU Candida sepsis score 3 or above in 40% patients. It did not miss candidemia in adults compared with blood culture within 24 hours. Positive T2Candida helped expedite source control e.g line g. ligation.

Disclosures. All authors: No reported disclosures.

253. Evaluation of a Cryptococcal Antigen Lateral Flow Assay and the Burden of Cryptococcal Disease: A Cohort Study at Grady Memorial Hospital in Atlanta, Georgia

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Background. While Cryptococcus neoformans is a major cause of morbidity and mortality among HIV-infected persons worldwide, there is scarce recent data on disease prevalence in the United States, including in Southeastern states, where HIV rates are high. We sought to determine the prevalence of cryptococcal disease and compare the performance of a cryptococcal antigen (CrAg) lateral flow assay (LFA) vs. latex agglutination (LA) test.

Methods. All patients from Grady Memorial Hospital in Atlanta, Georgia who had a serum or cerebrospinal fluid (CSF) sample sent for CrAg LA testing as part of routine management from November 2017 to July 2018 were included. The LFA was performed on all samples by research staff; results were not available to clinicians. Rates of disease and agreement between the LA test and LFA were calculated.

Results. Among 467 patients, 570 LA tests were performed; 417 on serum and 153 on CSF (87 patients with multiple tests performed). Mean age was 44 years, and most were male (n = 322, 69%). Most patients had HIV (n = 371, 79%); median CD4 count was 73 cells/mm3 and 77% were not receiving ART. Among HIV-infected individuals, testing was performed equally in the inpatient and outpatient setting. Cryptococcal testing was done in 53 persons without apparent risk factors. Thirty-three (7%) patients had a positive serum or CSF test. Five (1%) patients had both a positive serum and CSF LA test and LFA. While the overall agreement between the LA test and LFA was substantial to high for CSF (κ = 0.71) and serum (κ = 0.93), respectively, there were important discrepancies. Four patients with a negative serum LA test had a positive serum LFA. Five patients had false-positive CSF LA tests, determined by negative CSF LFA testing. India ink, and CSF and fungal cultures. All were treated with amphotericin and flucytosine with one patient experiencing a severe anaphylactic reaction to amphotericin.

Conclusion. We found a moderately high rate of cryptococcal disease and important discrepancies between the LA test and LFA. The LFA appeared to be more sensitive for cryptococcosis and more specific for meningitis. Clinical implications of these findings include earlier detection and treatment of cryptococcosis, and averting unnecessary treatment of meningitis with costly medications associated with high rates of adverse events.