(T2C) results in a few hours, but concomitant cultures are also needed. We compared results from the T2C with β-D-glucan (BDG), blood cultures (BCx) and the Candida Sepsis Score (CSS) 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 CSS 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 patients 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 concomitant Candida spp. (26%). Six of these 8 patients were on antifungal therapy when T2C was sent. Seventeen patients had a 24hBDG, with positive (41%). Overall mean CSS in 27 ICU patients with +T2C was 2.2 ± 0.8, and 40% of adult non-neutropenic ICU patients had a CSS 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 1 to 4 weeks. 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-D-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 removal.

Disclosures. All authors: No reported disclosures.

251. Implementation of the Sõna 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 complements fixation (CF), immunodiffusion (ID), and complement fixation (EIA). 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 outs and long TAT, Valley fever presents a diagnostic challenge to physicians and laboratories. IMMY developed the sõna Coccidioides Antibody Lateral Flow Assay (LFA), a rapid and simple diagnostic assay that detects Coccidioides antibodies in patient serum within 30 minutes.

Methods. We tested the sõna 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 sõna Coccidioides Antibody LFA as a screening test, the cost of send-outs reduced by 84%, and the cost mens and compared cost-analysis and TAT to a send out reference lab's ID and CF assays.

Conclusion. Compared with Send out Immunodiffusion and Complement Fixation Testing, the cost of send outs and long TAT, Valley fever presents a diagnostic challenge to physicians and laboratories. IMMY developed the sõna Coccidioides Antibody Lateral Flow Assay (LFA), a rapid and simple diagnostic assay that detects Coccidioides antibodies in patient serum within 30 minutes.

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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Session: 40. Fungal Diagnostics

Thursday, October 3, 2019: 12:15 PM

Background. Pneumocystis jirovecii is a medically important fungal pathogen responsible for opportunistic infections in immunocompromised hosts with high morbidity and mortality. Compared with standard microscopy based assays, home-brew nucleic acid amplification tests (NAAT) have emerged as sensitive tests 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 kit with automated extraction using the NucliSENS easyMAG system after sample pre-treatment with either FastPrep mechanical grinding or vortex-based bead beating. We then determined the mouse hepatitis virus SPC (Luminex) spike-in amount, and optimized the PCR conditions on the ABI 7500 PCR system. A new Pneumocystis mtSSU run control was generated by cloning and transforming mtSSU gene into a genetically engineered E. coli strain, and quantified with a home-brew qualitative 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 Ct of mtSSU run control, the limit of detection of the new assay was 80 copies/mL. No cross-reactivity was found with 9 respiratory viruses, 8 bacteria or 11 fungi. The assay has high reproducibility for three-day detection of the same sample aliquots for mtSSU (CT: 30.0–30.3; CV: 0.5–1.6) and SPC (CT: 32.1–32.2; CV: 0.8–2.4).

Conclusion. We developed a novel MultiCode real-time PCR assay for detection of P. jirovecii in BALF and sputum, which demonstrated high analytical sensitivity, specificity and reproducibility and warrants further clinical validation.

Disclosures. All authors: No reported disclosures.