Conclusion. Elizabethkingia spp. can result in respiratory, bloodstream, and sinus infections especially in patients with active malignancy and tracheostomy. Amongst tested antimicrobials, trimethoprim-sulfamethoxazole showed the most favorable susceptibility profile (Figure 1).

653. Direct Identification of Microorganisms in Positive Blood Cultures by the BioFire® FilmArray® Blood Culture Identification Panel Leads to Faster Optimal Antibiotic Therapy: A Before–After Study

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Background. Rapid pathogen identification from positive blood cultures may help optimize empiric antibiotic therapy quickly by reducing unnecessary broad spectrum antibiotic use and may improve patient outcomes. The BioFire® FilmArray® Blood Culture Identification Panel 1 (BF-FA-BCIP) identifies 24 pathogens directly from positive blood cultures without subculture. 3 resistance genes are included. We aimed to compare the time to optimal antibiotic therapy between BF-FA-BCIP and conventional identification.

Methods. We included 800 patients with comparable baseline characteristics. Main outcomes of interest were time to effective therapy, length of hospital stay, and in-hospital and 30-day mortality. Outcomes were assessed using cause-specific Cox Proportional Hazard models and logistic regressions.

Results. We performed a single-center retrospective case-control before-after study of 386 cases (November 2018 to October 2019) with BF-FA-BCIP compared to 414 controls (August 2017 to July 2018) with conventional identification. The primary study endpoint was the time from blood sampling to implementation of optimal antimicrobial therapy. Secondary endpoints were time to effective therapy, length of hospital stay, and in-hospital and 30-day mortality. Outcomes were assessed using cause-specific Cox Proportional Hazard models and logistic regressions.

Conclusion. There was no significant difference between the QFT-Plus and T-SPOT.TB in the diagnosis of ATB. QFT-Plus might be prone to indeterminate results and influenced by the immunosuppressive status. The results need to be verified by a prospective cohort study with large sample.

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and 44.3 hours by the conventional method. Patients with BF-FA-BCIP received the optimal therapy after a median of 25.5 hours (95% CI 21.0 - 31.2) as compared to 45.7 hours (95% CI 37.7 - 51.2) in the control group (Figure 1). We found no effect of the identification method on secondary outcomes.

Kaplan-Meier curve representing the probability of implementing the optimal therapy at any given time according to the identification method (Standard vs. BF-FA-BCIP).

Results. BC from 103 pts grew 114 bacterial sp: E (n=54; 16 ESBL, 1 KPC-producer), S. aureus (n=29, 22 MRSA), Enterococcus (n=21, 16 VRE), P. aeruginosa and others (n=10), 12 ESBL-E produced CTX-M 14/15. T2R sensitivity and specificity was 78% and 99%, respectively, compared to sequencing of resistance markers. Sensitivity was excellent for vanA/B, KPC (100% each), and CTX-M14/15 (92%); specificity was 58% for mecA/C. T2R detected resistance determinants in 3-7h. Median time to appropriate Ab was 16.3h, which was significantly longer for VRE (25.6h) and ESBL- or KPC-E (50.9h) BSIs than for T2R marker-negative bacteria (6.7h; p=0.04). Pts with VRE or ESBL/KPC-E BSIs were less likely to receive appropriate empiric Ab (18% and 30%, respectively) than pts with T2R marker-negative BSIs (63%; p=0.02; Fig.1). Median times to achieve ≥80% appropriate Ab therapy of marker-negative, VRE and CTX-M/KPC-E BSIs were 15.8h (after Gram stain), 43.9h (after MALDI) and 63.5h (after BF-FA-BCIP), respectively.

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Conclusion. There was a significant delay in appropriate Ab therapy of BSIs, especially in pts infected with VRE and ESBL/KPC-E. T2R rapidly and accurately detected BSIs caused by VRE and ESBL/KPC-E, and has the potential to significantly shorten time to appropriate Ab.

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655. Patterns of Interferon-Gamma Release Assay (IGRA) Testing for Tuberculosis in Patients Less Than 2 Years Old

Background. The American Academy of Pediatrics recommends use of Interferon-Gamma Release Assays (IGRAS) to diagnose tuberculosis (TB) infection in patients ≥2 years old. However, IGRA are not currently recommended in younger patients due to limited data and concerns of invalid/indeterminate test results, which occur if there is a positive or negative control failure. We sought to characterize the patterns of IGRA use in clinical practice and results of IGRAs in patients < 2 years old.

Methods. We conducted a retrospective cohort study of children < 2 years old at two large health systems in the Boston area who had IGRA and/or tuberculin skin test (TST) performed from October 1, 2015 - January 31, 2021. We reviewed medical records to determine IGRA test type, IGRA result (positive, negative, invalid/indeterminate) and location of testing (outpatient primary care, outpatient subspecialty, inpatient). We summarized test interpretability, location, and changes in proportion of IGRAs over time.

Results. We identified 330 IGRA (268 T-SPOT.TB, 62 QuantiFERON GOLD) and 2029 TST results among 1872 patients who were < 2 years old (range: 11 days – 1.9 years). Monthly proportion of IGRAs among all TB tests ordered increased from 2015 to 2021 (Figure 1) (Pearson correlation coefficient 0.85, P < 0.001). Among IGRA results, 314 (95%) were negative, 3 (1%) were positive, and 13 (4%) were invalid/indeterminate (1 T-SPOT.TB, 2 QuantiFERON GOLD). Of 324 IGRA tests for which testing location was known, 233 (72%) and 91 (28%) were ordered in outpatient and inpatient settings, respectively. Of tests in outpatient settings, 132 (57%) were ordered in primary care offices, 53 (23%) were ordered in subspecialty offices, and 48 (21%) were obtained in outpatient labs of unidentified clinics.

Tuberculosis infection tests and proportion IGRA.