Methods. RT-PCR test positivity rate and turnaround time were determined among 89 specimens tested at CDC from 54 outbreak patients with suspected pittasa. RT-PCR testing was performed on nucleic acid extracted from clinical specimens using oligonucleotides targeting the C. psittaci locus tag CPSTF_RS01985. Clinical information was collected by patient interview and medical record review.

Results. Positivity rates among the most common specimen types were 4.4% (2/46) for nasopharyngeal (NP) swab, 36.4% (8/22) for sputum, and 80.0% (4/5) for stool. Of 21 (24%) specimens with available data, the average time from patient symptom onset to specimen collection was 6 days (range 1–11 days). C. psittaci was detected in 14/13 (108%) specimens from 13 of 54 outbreak patients that had radiographically-confirmed pneumonia, and 7 were RT-PCR-positive from a lower respiratory specimen only. Paired sputum and NP swab specimens were tested for 6 patients; C. psittaci was detected in all sputum but only 1 NP swab. The positive NP swab was from a patient preparing intensive care unit admission and intubation. All results were reported within 1 business day of specimen receipt in the lab.

Conclusion. These data suggest that lower respiratory specimens are more sensitive than NP swabs for RT-PCR detection of C. psittaci; stool might be a suitable alternative. Widespread implementation of RT-PCR testing using appropriate specimen types could improve psittacosis detection and inform timely public health interventions.

2175. Rapid Detection of Carbapenemase Producing Organisms Directly from Blood Cultures Positive for Gram-negative Bacilli

Saturday, October 5, 2019: 12:15 PM

Background. The rapid detection of carbapenemase-producing organisms (CPO, e.g., from blood cultures (BC)) positive for gram-negative bacilli (GNB) may accelerate the appropriate treatment of at-risk patients. Our objective was to evaluate the performance of two commercial assays in the rapid detection of CPOs directly from BC positive for GNB.

Methods. BC positive for GNB, taken from patients within the California Health Zone over a 3 month period, were tested for the presence of CPOs with βCARBA and NG-Test® CARRA 5. A subset of sterile BC samples was seeded with multi-drug-resistant (MDR) GNB. BC were incubated using the ActAlert® system. Positive BC from clinical and seeded samples were tested directly with βCARBA and CARRA 5 from BC pellets processed for direct testing using an amonnium chloride lysis and wash method. Sensitivity, specificity, negative predictive value (NPV) and positive predictive value (PPV) were calculated with % confidence intervals for binomial proportions.

Results. 65 samples were tested (30 clinical, 35 seeded). Seeded samples included 1 GES, 4 IMP, 6 KPC, 1 co-producing KPC and NDM, 9 OXA, 4 VIM, 5 NDM, and 5 non-CPO carbapenem-resistant organisms. βCARBA had a sensitivity, specificity, NPV and PPV of 100% (88.4% - 100%), 65.7% (47.8–80.9%), 100%, and 71.4% (61.3–79.8%), respectively; CARRA 5 had a sensitivity, specificity, NPV and PPV of 90.0% (73.3%–100%), 92.1% (90.8%–97.2%), 100% (90.0%–100%), and 99.99% (99.7%–100%), and When excluding GES, which is known not to be detected by CARRA 5, sensitivity and NPV increased to 93.1% (77.2%–99.2%) and 93.1% (78.0%–98.1%), respectively. False negatives for βCARBA occurred with 1 VIM-1 and 1 IMP-14.

Conclusion. This study demonstrated that direct testing of CPOs directly from positive BC can be accurately achieved. βCARBA had excellent sensitivity but suffered from poor specificity. CARRA 5 had good sensitivity and specificity but is unable to detect certain CPOs. Testing positive BC directly using βCARBA and/or CARRA 5 may be useful in rapidly detecting CPOs. Results of direct testing from the CARRA5 assay would quickly identify patients amenable to treatment with aminobactam combination compounds.

Disclosures. All authors: No reported disclosures.

2176. A New Rapid Test for Detection of The Cefazolin Inoculum Effect (CIE) in Methicillin Susceptible Staphylococcus Aureus (MSSA)

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Background. Rapid diagnostic testing for the management of bloodstream infections has become paramount to improving patient outcomes. The primary objective of this study was to assess the differences between 2 FDA approved instruments.

Methods. Retrospective study from August 2018 to April 2019 at the University of Maryland Medical Center. One positive blood culture from each patient was tested using the Verigene® blood culture Gram-positive (BC-GP) or Gram-negative (BC-GN) panels based on the Gram stain and then analyzed using the ePlex® Blood Culture Identification (BCID) Gram-positive (BC-GP) or Gram-negative (BCID-GN) research-use only panels and compared with culture results.

Results. The study consisted of 140 positive blood culture bottles. 14 bottles were excluded for a total of 55 GN and 71 GP bottles. Of the 55 GN bottles, 3 had 2 GN rods for a total of 58 GN rods. BCID-GN missed 1 P. aeruginosa, 2 S. maltophilia, and 1 E. coli for a 93% (53/57) positive agreement. The BCID-GN does not detect A. junii and therefore it was excluded. BC-GN did not identify 1 K. pneumoniae with a 99% (47/48) positive agreement. BC-GN does not include the detection of S. maltophilia (4), Serratia (4), Morganella (1), and B. fragilis (1)and these were excluded in the BC-GN analysis. CMTX was the only resistant marker detected and both panels identified it correctly. 5 samples using the BCID-GN and 4 using the BC-GP from Pan Gram-Positive; 3 grew GP organisms, the other 2 only grew E. coli. Of the 71 GP bottles, 3 had 2 GP bacteria totaling 74 GPs. BCID-GP missed 1 S. aureus, 1 invalid, and called an E. faecalis that was not identified by the reference method for a 99% (72/73) positive agreement. BC-GP does not detect Micrococcus (6) or E. pellucida (1) and missed 1 S. mitis for a 96% (66/67) positive agreement. 18 samples were positive for mecA detected by both panels. 4 samples were vanA/B positive, 1 by BC-GP was sensitive to vancomycin and not detected by BC-GP. BCID-GP detected 1 sample as Pan Gram-negative although a GNR was not detected.

Conclusion. Both the Verigene® and ePlex® GP and GN panels have a high percent positive agreement. Laboratories should take into consideration the epidemiology of their bloodstream infections when deciding on panels for the rapid detection of bloodstream infections.

Disclosures. All authors: No reported disclosures.