1758. Impact of Accelerate Pheno® Rapid Blood Culture Detection System on Laboratory and Clinical Outcomes in Bacteremic Patients

Adoption of CIDTs has allowed for rapid identification of Shiga toxin or Shiga toxin genes, transmitted commonly through food, including Shiga toxin-producing Escherichia coli (STEC). STEC causes a spectrum of disease from mild to life-threatening, and the rapid identification of STEC is critical for public health surveillance. In November 2015, the FoodNet rapid STEC detection algorithm was approved for implementation in CDC’s STEC laboratory network.

Methods. We examined STEC cases reported to FoodNet during 2012–2017 with a positive immunomassay (IA) or polymerase chain reaction (PCR) test performed at a clinical laboratory, followed by positive or negative test at a state public health laboratory. Three test type combinations were assessed (IA/IA, PCR/PCR, and IA/PCR) by state, symptoms, test discordance, and culture (cx) result.

Results. During 2012–2017, 8,289 (76% of all STEC reported) specimens were tested by IA or PCR at both a clinical and a public health laboratory, 58% by IA/PCR, 27% by IA, and 25% by PCR. Results for STEC positive specimens had more than one test at each laboratory. Among these, 8,132 (98%) were also tested by cx. Among the IA/PCR test results, 20% were discordant and 75% of these were cx-negative. Even more of IA/IA (27%) and PCR/PCR (24%) results were discordant, and 75% of these were cx-negative. A median of 0.30% of test results were discordant (range by state, 13%–44%). Persons with discordant test results were less likely to have diarrhea (91% vs. 97%) and bloody diarrhea (33% vs. 57%). During 2012–2017, discordant results increased for IA/PCR (14% to 22%), IA/IA (17% to 34%), and PCR/PCR (6% to 25%). Most (85%) specimens with discordant results were cx-negative and 8% did not have a cx.

Conclusion. Almost a quarter of results were discordant, with marked variation by state, and most of these infections could not be confirmed by culture at the public health laboratory. Discordant results can pose problems for patient management. Including or excluding patients with discordant results also affects our ability to measure trends. Sensitivity and specificity of test types, test targets, and specimen transport must be considered when interpreting test results.

Disclosures. All authors: No reported disclosures.

1760. Interferon Gamma Release Assay for Diagnosis of Lyme disease

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Session: 211. Diagnostics Making a Difference

Saturday, October 6, 2018: 10:30 AM

Background. The sensitivity of current antibody detection assays against Borrelia burgdorferi sensu lato in the early stage of Lyme disease is very low, even in patients who commonly have febrile viral illnesses, manifestations of early Lyme disease can be misdiagnosed. We previously demonstrated that IFNy secretion could be detected in whole blood collected from Lyme disease patients at first clinical presentation following overnight incubation of the blood with peptides derived from B. burgdorferi superantigens. In the present study, we further evaluated the utility of IFNy release for the laboratory diagnosis of Lyme disease in children with varying stages of the illness.

Methods. Children ages 2-18 years with no prior history of Lyme disease and who presented to a pediatric Lyme clinic with an EM lesion were enrolled. At the time of enrollment, patients were asked to provide a blood sample in addition to their laboratory evaluation. The blood sample was aliquoted and stored at -80°C. IFNy release was measured using the ELISA assay over the course of a 2-week period. The data was collected over a 2-year period at the very early stages of Lyme disease in patients with nonspecific febrile illness in the absence of erythema migrans.

Disclosures. R. Dattwyler, Qiagen: Collaborator, Research support. P. Arnaboldi, Qiagen: Collaborator, research materials.

1761. Effect of Carbapenem-Resistant Enterobacteriaceae (CRE) Surveillance Case Definition Change on CRE Epidemiology—Selected US Sites, 2015–2016

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Disclosures. Centers for Disease Control and Prevention, Atlanta, Georgia; Colorado Department of Public Health and Environmental, Denver, Colorado; California Emerging Infections Program, Oakland, California; Division of Foodborne, Waterborne, and Environmental Diseases, CDC, Atlanta, Georgia and National Center for Emerging Zoonotic Infectious Diseases, Division of Foodborne, Waterborne, and Environmental Diseases, Centers for Disease Control and Prevention, Atlanta, Georgia

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Background. FoodNet conducts active laboratory-based surveillance for 9 pathogens transmitted commonly through food, including Shiga toxin-producing E. coli (STEC). Adoption of CIDTs has allowed for rapid identification of Shiga toxin or Shiga toxin genes, but incorporating multiple test results with differing sensitivity and specificity complicates treatment decisions and public health surveillance. Between 2007 and 2017, FoodNet reported increases in the use of CIDTs and decreases in rates of confirmation by culture.

Methods. We examined STEC cases reported to FoodNet during 2012–2017 with a positive immunomassay (IA) or polymerase chain reaction (PCR) test performed at a clinical laboratory, followed by positive or negative test at a state public health laboratory. Three test type combinations were assessed (IA/IA, PCR/PCR, and IA/PCR) by state, symptoms, test discordance, and culture (cx) result.

Results. During 2012–2017, 8,289 (76% of all STEC reported) specimens were tested by IA or PCR at both a clinical and a public health laboratory, 58% by IA/PCR, 27% by IA, and 25% by PCR. Results for STEC positive specimens had more than one test at each laboratory. Among these, 8,132 (98%) were also tested by cx. Among the IA/PCR test results, 20% were discordant and 75% of these were cx-negative. Even more of IA/IA (27%) and PCR/PCR (24%) results were discordant, and 75% of these were cx-negative. A median of 0.30% of test results were discordant (range by state, 13%–44%). Persons with discordant test results were less likely to have diarrhea (91% vs. 97%) and bloody diarrhea (33% vs. 57%). During 2012–2017, discordant results increased for IA/PCR (14% to 22%), IA/IA (17% to 34%), and PCR/PCR (6% to 25%). Most (85%) specimens with discordant results were cx-negative and 8% did not have a cx.

Conclusion. Almost a quarter of results were discordant, with marked variation by state, and most of these infections could not be confirmed by culture at the public health laboratory. Discordant results can pose problems for patient management. Including or excluding patients with discordant results also affects our ability to measure trends. Sensitivity and specificity of test types, test targets, and specimen transport must be considered when interpreting test results.

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Oral Abstracts • OFID 2018.5 (Suppl 1) • S61