457. Electronic and Microbiological Detection, Investigation, and Surveillance for Potential Hospital- Acquired Device Associated Infections at ERCP.

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Session: 56. HA1: Outbreaks
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Background. Duodenoscopy, done 700,000 times annually, is potentially life saving in biliary and pancreatic disease. ERCP is prone to device associated infections due to a complex elevator mechanism and slim margin of safety in scope reprocessing with a high microbial burden. Nosocomial infections are difficult to detect without a marker organism or antibiotic phenotype. A cluster of ESBL infections was detected by electronic surveillance in 2014 in a large 865 bed facility.

Methods. Utilizing electronic surveillance, a line listing of ESBLs from the prior year was made, and antibiotic phenotypes examined. After chart review, one phenotype Pattern A clustered with ERCP. Scopes were quarantined and cultured; isolates were sent on cold chain to reference laboratory for sequence typing and genetic sequencing. Two AERs were purchased; double scope AER reprocessing with peracetic acid was performed for five days after reprocessing was implemented 10/2015 using CDC guidance of March 2014.

Results. We identified 52 blood cultures positive for CRO-R E. coli during the study period. Twenty-eight met the case definition and 11 were controls. Thirty of the 39 isolates belonged to MLST-131. Eleven of these isolates were from patients exposed to the same duodenoscope within 90 days prior to bacteremia. CTX-M 15 was found in 10 of the exposed cases. The odds ratio of bacteremia with E. coli MLST-131 if exposed to this duodenoscope was 4.6 but was not statistically significant (95% CI 0.5–4.2). Half were from patients with a history of recent ERCP.

Conclusion. The implicated duodenoscope was removed from use despite inability to confirm clonality. The study was underpowered to demonstrate significance because our cases involved highly prevalent strains of CRO-R E. coli. While genotyping can be a useful tool, detection of Mc is difficult because of high-level multidrug resistance in outbreds due to common pathogens high level of suspicion should dictate intervention.

Disclosures. All authors: No reported disclosures.

458. Rapid Detection of Invasive Mycobacterium chimaera Infection by Using a Novel Plasma-Based Next-Generation Sequencing Assay.

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Background. Mycobacterium chimaera (Mc), a member of the M. Aviumcomplex (MAC), can cause disease months or years after exposure. Mc infection clusters have been linked to contaminated heater-cooler devices (HCDs) used worldwide for temperature control during cardiac surgery. Manifestations of Mc are nonspecific and many can be associated with contamination. Cluster detection and surveillance is challenging and many patients have the infection without symptoms.

Methods. We identified all blood cultures positive for CRO-R E. coli collected January 2014–June 2015. A case was defined as the first CRO-R E. coli positive blood culture from a unique patient who had undergone ERCP within 90 days prior. Controls were CRO-R E. coli blood cultures from unique patients who did not undergo ERCP or did so after bacteremia. Duodenoscopes used for ERCP were abstracted from the medical record. We evaluated clonal relationships by MLST and single-nucleotide polymorphism (SNP) analysis. Resistance gene and mobilization vector analysis provided further strain resolution.

Results. We identified 52 blood cultures positive for CRO-R E. coli during the study period. Twenty-eight met the case definition and 11 were controls. Thirty of the 39 isolates belonged to MLST-131. Eleven of these isolates were from patients exposed to the same duodenoscope within 90 days prior to bacteremia. CTX-M 15 was found in 10 of the exposed cases. The odds ratio of bacteremia with E. coli MLST-131 if exposed to this duodenoscope was 4.6 but was not statistically significant (95% CI 0.5–4.2). Half were from patients with a history of recent ERCP.

Conclusion. The implicated duodenoscope was removed from use despite inability to confirm clonality. The study was underpowered to demonstrate significance because our cases involved highly prevalent strains of CRO-R E. coli. While genotyping can be a useful tool, detection of Mc is difficult due to high-level multidrug resistance in outbreds due to common pathogens high level of suspicion should dictate intervention.

Disclosures. All authors: No reported disclosures.

459. An Outbreak of Pseudomonas aeruginosa Infection in Coronary Artery Bypass Graft Patients Related to Endoscopic Vein Harvesting Equipment.

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Background. Pseudomonas aeruginosa are a common cause of nosocomial bloodstream infections in patients who had undergone ERCP in the Spring of 2014. Our Infection Control Unit (IC) was alerted to a suspicious number of CRO-R P. aeruginosa blood cultures from unique patients who did not undergo ERCP or did so after bacteremia. Duodenoscopes used for ERCP were abstracted from the medical record. We evaluated clonal relationships by MLST and single-nucleotide polymorphism (SNP) analysis. Resistance gene and mobilization vector analysis provided further strain resolution.

Results. We identified 52 blood cultures positive for CRO-R P. aeruginosa during the study period. Twenty-eight met the case definition and 11 were controls. Thirty of the 39 isolates belonged to MLST-131. Eleven of these isolates were from patients exposed to the same duodenoscope within 90 days prior to bacteremia. CTX-M 15 was found in 10 of the exposed cases. The odds ratio of bacteremia with P. aeruginosa MLST-131 if exposed to this duodenoscope was 4.6 but was not statistically significant (95% CI 0.5–4.2). Half were from patients with a history of recent ERCP.

Conclusion. The implicated duodenoscope was removed from use despite inability to confirm clonality. The study was underpowered to demonstrate significance because our cases involved highly prevalent strains of CRO-R P. aeruginosa. While genotyping can be a useful tool, detection of Mc is difficult due to high-level multidrug resistance in outbreds due to common pathogens high level of suspicion should dictate intervention.

Disclosures. All authors: No reported disclosures.

460. The Burden of Acinetobacter baumannii in the Intensive Care Unit of a Teaching Hospital in Kuwait Over a 3-Year Period.

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Background. Acinetobacter baumannii is often endemic in several ICUs worldwide. Once it is established, it is difficult to eradicate. This study was undertaken to...