and (3) *C. difficile* negative. **Results:** A diagnosis of *C. difficile* adds significantly (>$3,000) to unadjusted hospital cost compared to a negative result. Propensity-adjusted analyses demonstrated that *C. difficile* colonization was associated with significantly increased (median, $5,000) hospital cost whereas any positive or true diagnoses of *C. difficile* were not associated with increased cost. Colonized patients also had significantly higher lengths of stay (1 day) and cost per length of stay ($218 per day). **Conclusions:** This is the first *C. difficile* cost analysis to utilize PCR CT data to differentiate colonization. Surprisingly, patients with a high CT had disproportionately higher hospital costs compared to matched *C. difficile*–negative patients, which was not seen among patients with a low CT or with any positive result. We hypothesize that this unexpected finding may be due to misdiagnosis and mistreatment of diarrhea not caused by *C. difficile* or unadjusted factors associated with high cost and non–*C. difficile* diarrhea. In addition, the discrepantly high cost attributed to *C. difficile* diagnosis cited in the literature ($3,000–11,000 per hospitalized case) could be explained by the common use of administrative data to identify *C. difficile* cases and controls as opposed to our study, which directly linked cost data to *C. difficile*–positive and –negative test results.

Funding: None
Disclosures: None
Doi:10.1017/ice.2020.908

Presentation Type:
Poster Presentation

Meta-analysis of Outcomes Using Ceftolozane-Tazobactam and Ceftazidime-Avibactam for Multidrug-Resistant Organism Infections

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Background: Ceftolozane-tazobactam (C/T) and ceftazidime-avibactam (C/A) are new β-lactam/β-lactamase combination antibiotics that were approved by the FDA in 2014 and 2015, respectively, to treat complicated intra-abdominal and urinary tract infections. They are commonly used to treat multidrug-resistant *Pseudomonas aeruginosa* (MDRPA) and carbapenem-resistant *Enterobacteriaceae* (CRE) infections at any site. Both medications are also often used as salvage therapy when empiric therapy has failed or when the infectious organism tests resistant to all other available antibiotics. The purpose of this review is to present the clinical experience and reported clinical success rates of C/T and C/A. **Methods:** PubMed, EMBASE, and Google Scholar were searched from January 1, 2013, through October 1, 2019, for publications detailing clinical experience with C/T and C/A in patients with CRE and MDRPA infections. Included study designs were extended cases series and clinical observational studies. Information on infection type, bacterial agent, salvage therapy uses, clinical success, and resistance development during treatment were abstracted. Meta-regression analysis was used to determine the pooled effectiveness of C/T and C/A among included studies. **Results:** The literature search returned 1,645 publications. After exclusion criteria were applied, 16 publications representing 769 patients were retained. The study population was mostly male (pooled average, 62%). The major comorbidities represented in the pooled population were solid organ transplantation (20.0%), kidney disease (19.5%), cardiovascular disease (15.3%), and diabetes (15.3%). Pneumonia was the predominant infection type (41.4%) and MDRPA was the pathogen most frequently evaluated (57.7%). The pooled clinical success rate was 70.2% (95% CI, 64.5%–75.3%). Also, 10 studies explicitly evaluated C/A or C/T as salvage therapy. The pooled clinical success rate for salvage therapy studies was 75.2% (95% CI, 69.7%–80.0%). Development of resistance to C/T or C/A during or after treatment was reported for 2.0% of the population. **Conclusion:** Overall, these medications have a high clinical success rate in patients with severe and complicated infections and limited treatment options. Pooled clinical success rates were high (70.2%) and the medications were particularly effective as salvage therapy. Resistance rates were low, although this could have been biased by the small percentage of studies that reported on this outcome. More longitudinal studies comparing the effectiveness of C/T and C/A against other antibiotic regimens are needed.

Funding: None
Disclosures: None
Doi:10.1017/ice.2020.909

Presentation Type:
Poster Presentation

Methicillin-Resistant *Staphylococcus aureus* Prevalence Among Healthcare Workers in Contact Tracings in a Dutch Hospital

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Background: In The Netherlands, the national guidelines on Methicillin-Resistant *Staphylococcus aureus* (MRSA) prevention and control advocate screening of healthcare workers (HCWs) after unprotected exposure to MRSA carriers. Although this strategy is largely successful, contact tracing of staff is a time-consuming and costly component. We evaluated our contact tracing policy for HCWs over the years 2010–2018. **Methods:** A retrospective, observational study was performed in a Dutch teaching hospital. All HCWs who had unprotected contact with an MRSA carrier were included in contact tracing. When there had been a long period of unprotected admission prior to an MRSA finding, or when the index case was an HCW, the entire (nursing) team was tested. All samples of HCWs who were tested for MRSA carriage as part of contact tracing from 2010 until 2018 were included. A pooled nose, throat, and perineum swab was collected using the eSwab medium (Copan) and inoculated on chromID MRSA agar plates (bioMérieux) after enrichment in a broth. Molecular typing was performed using multiple-locus variable number of tandem repeat analysis (MLVA). **Results:** In total, we included 8,849 samples (range, 677–1,448 samples per year) from 287 contact tracings (range, 26–55 contact tracings per year). Overall, 32 HCWs were colonized with MRSA (0.36%; 95% CI, 0.26%–0.51%). None of them developed a clinical infection. Moreover, 8 HCWs (0.10%; 95% CI, 0.05%–0.19%) were colonized with the same MLVA type as the index case and were detected in 6 of 287 contact tracings (2%). In 4 of 8 of these cases, a positive HCW was the index for undertaking contact tracing. In 3 of 8 cases, it was clear that the HCW who was identified in the contact tracing was the source of the outbreak and was the cause of invasive MRSA infections in patients. Notably, a different MLVA type as the index case was found in 24 HCWs (0.27%; 95% CI, 0.18%–0.40%) of whom 7 of 24 HCWs (29.2%) were intermittent carriers. **Conclusions:** This study revealed a sustained low MRSA prevalence among