Presentation Type: Oral Presentation

Subject Category: MDR GNR

How Does Antimicrobial Resistance Increase Medical Costs in Community-Acquired Acute Pyelonephritis?
Bongyoung Kim; Taul Cheong and Jungmo Ahn

Background: The proportion of antimicrobial-resistant Enterobacteriales that are causative pathogens for community-acquired acute pyelonephritis (CA-APN) has been increasing. We examined the effect of antimicrobial resistance on medical costs in CA-APN. Methods: A single-center retrospective cohort study was conducted at a tertiary-care hospital in Korea between January 2018 to December 2019. All hospitalized patients aged ≥19 years who were diagnosed with CA-APN were recruited, and those with Enterobacteriales as a causative pathogen were included. Comparisons between CA-APN caused by extended-spectrum β-lactamase (ESBL)–producing pathogens (ESBL+ group) and those by non–ESBL–producing organisms (ESBL– group) as well as CA-APN caused by ciprofloxacin-resistant pathogens (CIP-R group) and those by ciprofloxacin-sensitive pathogens (CIP-S group) were performed. Log-linear regression was performed to determine the risk factors for medical costs. Results: In total, 241 patients were included in this study. Of these, 75 (31.1%) had an ESBL-producing pathogen and 87 (36.1%) had a ciprofloxacin-resistant pathogen. The overall medical costs were significantly higher in the ESBL+ group compared with the ESBL– group (US$3,730.18 vs US$3,119.32, P < 0.001) as well as in CIP-R group compared with CIP-S group (3,730.18 USD vs 3,119.32 USD, P < 0.005). In addition, length of stay was longer in ESBL+ group compared with ESBL–group (11 vs. 8 days, P < 0.001) as well as in CIP-R group compared with CIP-S group (11 vs. 8 days, P < 0.001). There were no significant difference in the proportion of clinical failure between ESBL+ and ESBL– groups; CIP-R and CIP-S groups. Based on the log-linear regression model, the costs associated with ESBL-producing Enterobacteriales as the causative pathogen would be, on average, 27% higher than US$1,211 higher than its counterpart (P = 0.026). By the same token, a patient who is a year older would incur US$23 higher cost (P = 0.040). Having any structural problem in urinary tract would incur US$1,231 higher cost (P = 0.015). A unit increase in Pitt score would incur US$767 USD higher cost (P < 0.001) higher, all other things constant. Conclusions: Medical costs for hospitalized patients with CA-APN are increased by the existence of ESBL-producing Enterobacteriales but not by the existence of ciprofloxacin-resistant Enterobacteriales.

Fun Fact: No

Disclosures: None

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Presentation Type: Oral Presentation

Subject Category: Medical Informatics

Automated Nationwide Benchmarking Dashboard for Antimicrobial Stewardship Programs within the Veterans’ Health Administration
Michihiko Goto; Eli Perencevich; Alexandre Marra; Bruce Alexander; Brice Beck; Danid Livorsi; Julia Friberg; Christopher Richards; DeShauna Jones and Michael Sauder

Background: The proportion of antimicrobial-resistant Enterobacterales. Medical costs for hospitalized patients with CA-APN are increased by the existence of ESBL-producing Enterobacteriales but not by the existence of ciprofloxacin-resistant Enterobacteriales.

Fun Fact: None

Disclosures: None


do1:10.1017/ash.2021.42

Figure 1.
through the dashboard (an example screenshot in Figure 1). Conclusions: Developing an automated surveillance system for antimicrobial consumption and risk-adjustment benchmarking using an electronic medical record data warehouse is feasible and can potentially provide valuable tools for ASPs, especially at hospitals with no or limited local informatics expertise. Future efforts will evaluate the effectiveness of dashboards in these settings.

Funding: No

Disclosures: None

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Presentation Type: Oral Presentation
Subject Category: MRSA/VRE
Discontinuation of Contact Precautions in Patients with Nosocomial MRSA and VRE Infections During the COVID-19 Pandemic
Marisa Hudson and Mayar Al Mohajer

Background: Gaps exist in the evidence supporting the benefits of contact precautions for the prevention of methicillin-resistant Staphylococcus aureus (MRSA) and vancomycin-resistant enterococci (VRE). The Centers for Disease Control and Prevention allow suspending contact precautions for MRSA and VRE in cases of gown shortages, as we have seen during the COVID-19 pandemic. We evaluated the impact of discontinuing isolation precautions in hospitalized patients with MRSA and VRE infection, due to gown shortage, on the rate of hospital-acquired (HA) MRSA and VRE infections. Methods: A retrospective chart review was performed on adult patients (n = 2,200) with established MRSA or VRE infection at 5 hospitals in CommonSpirit Health, Texas Division, from March 2019 to October 2020. Data including demographics, infection site, documented symptoms, and antibiotic use were stratified based on patient location (floor vs ICU). Rates of hospital-acquired MRSA and VRE infection before and after the discontinuation of isolation (implemented in March 2020) were compared. Incidence density rate was used to assess differences in the rate of MRSA and VRE infections between pre- and postintervention groups. Results: The rate of hospital-acquired (HA) MRSA infection per 10,000 patient days before the intervention (March 19–February 20) was 12.19, compared to 10.64 after the intervention (March 20–July 20) (P = .038). The rates of HA MRSA bacteremia were 1.13 and 0.93 for the pre- and postintervention groups, respectively (P = .074). The rates of HA VRE per 10,000 patient days were 3.53 and 4.44 for the pre- and postintervention groups, respectively (P = .274). The hand hygiene rates were 0.93 before the intervention and 0.97 after the intervention (P = .028). Conclusions: Discontinuing isolation from MRSA and VRE in the hospital setting did not lead to a statistically significant increase in hospital-acquired MRSA or VRE infections. In fact, rates of hospital-acquired MRSA decreased, likely secondary to improvements in hand hygiene during this period. These results support the implementation of policies for discontinuing contact isolation for hospitalized patients with documented MRSA or VRE infection, particularly during shortages of gowns.

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