the duration of treatment and reduce ADEs. **Methods:** At NorthShore University HealthSystem, a 4-hospital, 832-bed system, we identified patients who were started on empiric antibiotics during a hospital admission between May 2, 2016, and June 30, 2018. Within 24 hours of antibiotic initiation, an infectious disease (ID) physician reviewed each patient chart. If the patient was unlikely to have a symptomatic bacterial infection, the ID physician left a note in the electronic medical record (EMR) recommending antibiotic cessation. Two physician reviewers retrospectively reviewed whether the treatment team accepted these recommendations and assessed potential ADEs for 30 days after the recommendation through inpatient and outpatient notes in the EMR. These ADEs were defined using previously published criteria. If the 2 reviewers disagreed on the presence of an ADE, an ID physician acted as the tie breaker. We compared the number of antibiotic days and the number of ADEs between cases in which the recommendations were followed and cases in which they were not. **Results:** We reviewed 168 cases: 78 (46.43%) followed recommendations and 90 (53.57%) did not. There were no significant differences in baseline patient characteristics between the 2 groups. There was a significant difference in total ADEs between the 2 groups: in 6 cases (7.69%) the recommendations were followed, and 21 (23.33%) they were not followed ($P = .011$). There was also a significant difference in antibiotic days between cases in which recommendations were followed (1.40 days) versus those in which they were not followed (1.99 days) ($p < 0.001$). **Conclusions:** Antibiotic-associated adverse events can cause harm to patients and increase healthcare costs, particularly when used for patients who are unlikely to have a bacterial infection. An antibiotic stewardship program to identify patients in an EMR who are unlikely to benefit from antibiotic use can decrease the length of total antibiotic usage and help prevent adverse events.

Presentation Type:
Poster Presentation
Subject Category: Antibiotic Stewardship
Successful Treatment of Invasive MRSA Infections in Children Using Area Under the Vancomycin Concentration-Time Curve Divided by the Minimum Inhibitory Concentration (AUC/MIC) to Measure Vancomycin Exposure

Leslie Chiang; Alice Pong; John Bradley; Paige Anderson and William Murray

Background: Vancomycin is the treatment of choice for invasive methicillin-resistant *Staphylococcus aureus* (MRSA) infections. Previous guidelines issued by the Infectious Diseases Society of America (IDSA) recommended targeting vancomycin serum trough concentrations of 15–20 mg/L; however, troughs <15 mg/L are also associated with increased odds of renal toxicity. To minimize toxicity, recently updated ASHP/IDSA/PIDS vancomycin dosing guidelines recommend the use of an area under the vancomycin concentration-time curve divided by the minimum inhibitory concentration (AUC/MIC) pharmacodynamic index to measure vancomycin exposure, with an AUC/MIC ratio >400 correlating with clinical efficacy. However, data on vancomycin therapeutic drug monitoring (TDM) in children are limited. Our institutional practice since January 2009 has been to use AUC/MIC, rather than serum trough concentrations, to guide vancomycin dosing. In this study, we describe clinical outcomes in vancomycin-treated children with invasive MRSA infections using this dosing method. **Methods:** We performed a retrospective chart review of children hospitalized with invasive MRSA infections between 2006 and 2019 at Rady Children's Hospital in San Diego, California. Clinical, microbiologic, and pharmacologic data including the site of MRSA infection, clinical failure or cure, occurrence of acute kidney injury (AKI),
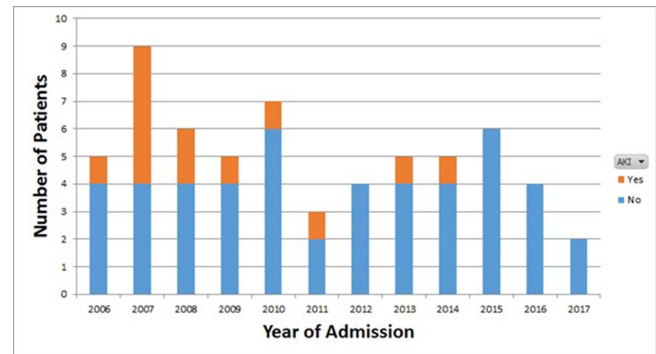

Figure 1.

vancomycin MIC, vancomycin AUC, and serum trough concentrations were collected. **Results:** In total, 61 invasive MRSA cases were reviewed: 20 were admitted January 2016 through December 2008, and 41 were admitted January 2009 through June 2019 (Figure 1). Most patients did not have medical comorbidities. The most common types of infections were primary bacteremia (34%) and osteomyelitis (32%). Of 61 children, 50 (82%) had positive clinical outcomes regardless of vancomycin dosing method. Of 20 patients, 8 (40%) admitted prior to January 2009 developed AKI, compared with 5 (12%) of 41 patients admitted after January 2009. **Conclusions:** In our retrospective review, most patients had clinically successful outcomes regardless of which dosing strategy was used. We found higher rates of renal toxicity in patients who were admitted prior to 2009, with TDM based on measuring peak and trough concentrations, compared with those using AUC/MIC for TDM. Our findings suggest that AUC/MIC TDM for invasive MRSA infections may be associated with lower rates of renal toxicity.

Presentation Type:
Poster Presentation
Subject Category: Antibiotic Stewardship
Diagnostic Stewardship in Lower Respiratory Tract Infections Using Procalcitonin

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Background: A team of infectious diseases physicians, infectious diseases pharmacists, clinical laboratorians, and researchers collaborated to assess the management of lower respiratory tract infections (LRTIs). In 1 sample from our institution, 96.1% of pneumonia cases were prescribed antibiotics, compared to 85.0% in a comparison group. A collaborative effort led to the development of a protocol for procalcitonin (PCT)-guided antibiotic prescribing that was approved by several hospital committees, including the Antimicrobial Stewardship Committee and the Healthcare Pharmacy & Therapeutics Committee in December 2020. The aim of this analysis was to develop baseline information on PCT ordering and antibiotic prescribing patterns in LRTIs. **Methods:** We evaluated all adult inpatients (March–September 2019 and 2020) with a primary diagnosis of LRTI who received at least 1 antibiotic. Two cohorts were established to observe any potential differences in the 2 most recent years prior to adoption of the PCT protocol. Data (eg, demographics, specific diagnosis, length of stay, antimicrobial therapy and duration, PCT labs, etc) were obtained from