Conclusion. Implementation of a PCT algorithm through ASP is a novel and efficacious addition to improving diagnostic yield, targeting appropriate therapy, and reducing length of stay. The impact on antibiotic resistance remains to be determined.

Methods. IRB approved, quasi-experiment at four hospitals with an antimicrobial stewardship program. Dates: August 1, 2015–January 31, 2016 and August 1, 2016–January 31, 2017. Included: ≥18 years, commensal flora only respiratory culture, empiric MRSA and PA antibiotic for treatment of lower respiratory infection. Excluded: MRSA or PA therapy de-escalated. Secondary outcomes: time to culture result, MRSA and PA antibiotic days of therapy, length of stay. Safety outcomes: acute kidney injury (AKI), C. difficile (CDI), subsequent multi-drug resistant organism (MDRO), in-hospital all-cause mortality.

Results. Two hundred and ten patients included, 105 per group. Median age 64 and 61 years, male sex 52% and 56% in pre- and post-group, respectively. Empiric antibiotics, pre vs. post: vancomycin 94% vs. 95%; cefepime 66% vs. 36%; piperacillin–tazobactam 10% vs. 46%. MRSA or PA antibiotics de-escalated: 39% pre and 73% post (P < 0.001). See Table 1 for variables associated with antibiotic de-escalation. Days of therapy: 7 vs. 5 days (P < 0.001). AKI 31% vs. 14% (P = 0.003). Eight subsequent MDRO in pre and one in post (P = 0.035). No differences: time to culture result, length of stay, mortality, CDI.

Conclusion. Improved microbiology communication to assist prescriber interpretation of commensal respiratory flora was associated with a reduction in the proportion of patients that received antibiotics targeting MRSA and PA.

Table 1.

| Antibiotic de-escalation | No antibiotic de-escalation | Unadjusted OR [CI] | Adjusted OR [CI] |
|--------------------------|-------------------------------|-------------------|-----------------|
| No MRSA, no PA comment   | 77 (65%)                      | 28 (30%)          | 5.0 [2.5–10.0]  | 5.7 (2.9–11.0) |
| Charlson Comorbidity     |                               |                   |                 |                 |
| Index < 3                | 42 (38%)                      | 60 (65%)          | 3.4 [1.9–6.0]   | 3.0 [1.6–5.7]   |
| APACHE II ≤15            | 45 (39%)                      | 56 (61%)          | 2.5 [1.4–4.4]   | 2.7 [1.4–5.3]   |
| Long-term care           | 14 (12%)                      | 9 (10%)           | 0.8 [0.3–2.0]   | 0.4 [0.1–1.0]   |
| >2 SIRS criteria         | 52 (44%)                      | 53 (58%)          | 1.7 [1.0–3.0]   |                 |
| Previous antibiotics     | 57 (48%)                      | 40 (44%)          | 0.8 [0.5–1.4]   |                 |
| Hospitalization >48 hours| 51 (43%)                      | 39 (42%)          | 1.0 [0.6–1.7]   |                 |

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960. Can antibiotic De-escalation Be Measured Without Chart Review? A Proposed Electronic Definition

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Session: 123. Stewardship Tools
Friday, October 6, 2017: 8:30 AM

Background. Antimicrobial stewardship programs promote de-escalation: moving from broad to narrow spectrum agents and/or stopping antibiotics as more clinical data return. A standard definition of de-escalation objectively applied to electronic data could provide a means to assess stewardship improvement opportunities.

Methods. We performed a retrospective cohort study of de-escalation events among five hospitals from the Duke Health System and the Duke Antimicrobial Stewardship Outreach Network using 2016 electronic medication administration record data. Antibiotics were ranked into four categories: narrow spectrum (e.g., cefazolin), broad spectrum, extended spectrum, and agents typically targeted for protection (e.g., meropenem). Included patients were cared for on inpatient units, had antibiotic therapy for at least 2 days, and had at least 3 days of hospitalization after starting antibiotics. De-escalation was defined as reduction in either the number of antibiotics or rank measured at two time points: day 1 of initiation of antibiotic therapy and day 5 (or day of discharge if occurring on day 3 or 4). Escalation was an increase in either number or rank of agents. Unchanged was either no change or discordant directions of change in number and rank. For all categories, the outcome was percent among qualifying admissions. Descriptive statistics were used to describe de-escalation among hospitals, unit type, and ICD-10 diagnoses.

Results. Among 39,226 included admissions, de-escalation occurred in 14,138 (36%), escalation in 5,129 (13%), and antibiotics were unchanged in 19,959 (51%) (Figure). Percent de-escalation was significantly different among hospitals (median: 37%, range 31–39%, P < .001). Infectious diagnoses with lower rates of de-escalation included intra-abdominal infection (23%), skin and soft-tissue infection (28%), and ENT/upper respiratory tract infection (19%). Intensive care units had higher rates of both de-escalation and escalation (43% and 16%) when compared with non-ICU wards (35% and 13%, P < .001).

Conclusion. We provided an objective, electronic definition of de-escalation and demonstrated variation among hospitals, units, and diagnoses. This metric may be useful for assessing stewardship opportunities.
N. Antibiotics

| Rank | Lower | Same | Higher |
|------|-------|------|--------|
|      | 1055 (1) | 1269 (2) | 146 (3) |
|      | 1218 (4) | 197/3 (50) | 5248 (6) |
|      | 110 (6) | 732 (2) | 1349 (3) |
| Note: De-escalation = green, Unchanged/yellow, Escalation=orange |

Disclosures. All authors: No reported disclosures.

961. The Role of Negative Methylcillin-Resistant Staphylococcus aureus Nasal Surveillance Swabs in Predicting the Need for Empiric Vancomycin Therapy

Thursday, 9:30 AM - 11:30 AM

Aims. Staphylococcus aureus (S. aureus) bacteremia (BSI) is a cause of significant morbidity and mortality. Treatment duration for S. aureus BSI has been shown to be significantly influenced by bacterial characteristics and risk of catheter related bloodstream infection (CR-BSI). We hypothesized that negative nasal surveillance swabs obtained at the time of admission could identify patients at low risk for subsequent vancomycin therapy.

Methods. We conducted a retrospective cohort study at six academic medical centers and eight community hospitals in the US and Spain. Patients with S. aureus BSI at 16 sites in the US and Spain were randomized to ABT (N = 255) or SOC (N = 254). There were 116 patients with SAB (23%) and 385 (76%) with CoNSB (Figure 1). Overall success rate in the ABT group was 82.0% vs. 81.5% in the SOC group, difference 0.5%, 95% CI –2.5% to 6.1%. SAEs were reported in 32.9% of ABT vs. 28.3% of SOC patients (OR 1.9, 95% CI 0.9 to 1.9). Among evaluable patients without complicated BSIs, mean duration of therapy was 4.4 days in the ABT group vs. 6.4 days in the SOC group (difference –2.0 days, 95% CI –3.3 to –0.7, P = 0.003). Among patients with uncomplicated ABT, treatment durations were similar (15.3 days in ABT vs. 16.3 days in SOC, difference –1 day, 95% CI –3.89 to 1.91, P = 0.497), whereas for uncomplicated CoNSB, duration was shorter in the ABT group (5.3 days in ABT vs. 8.4 days in SOC, difference –3 days, 95% CI –4.87 to –1.34, P < 0.001).

Conclusion. The use of a treatment algorithm for staphylococcal BSI was associated with significant reductions in duration of antibiotic therapy in patients without complicated BSIs, with significant differences in overall success and SAEs.

Figure 1. Schematic of Study Design

Disclosures. V. Fowler Jr., NIH: Investigator, Contract HHSN272200900025C

984. Induced Hypothermia in Patients with Septic Shock and Ventilator-demanding Respiratory Failure

Friday, 9:30 AM - 11:30 AM

Aims. Induced hypothermia in patients with septic shock and ventilator-demanding Respiratory Failure has become a controversial treatment. The objective of this study was to evaluate the clinical impact of induced hypothermia in patients with septic shock and ventilator-demanding Respiratory Failure.

Methods. A retrospective cohort study was conducted at a tertiary care medical center in Baltimore from December 2013 to June 2015. MRSA nasal swabs were obtained at the time of admission and weekly thereafter for all ICU patients. The negative predictive value (NPV), defined as the ability of a negative MRSA nasal screening test to correctly predict no subsequent MRSA infection during the hospital stay, was calculated, accounting for the 3-day turnaround time of MRSA nasal surveillance swabs. Days of vancomycin therapy started or continued after 3 days from the first negative MRSA nasal swab were determined by chart review. A matched case-control study was performed to identify risk factors for patients with negative MRSA surveillance cultures who subsequently developed MRSA infections.

Results. Of 11,441 MRSA nasal swab negative patients, the proportion of subsequent incident MRSA infections was 0.2%. Negative MRSA surveillance swabs had an NPV of 99.4% (95CI 99.1–99.6%). Among 4,091 MRSA-negative patients receiving vancomycin, vancomycin was started or continued after 3 days since the first MRSA-negative nasal swab in 1,434 patients (35%), translating to 7,377 potentially avoidable vancomycin days. The matched case-control analysis did not identify risk factors associated with subsequent MRSA infection.

Conclusion. At our institution with robust infection control practices and low nosocomial MRSA transmission rates, patients with negative MRSA nasal swabs have a very low likelihood of subsequent MRSA infection during hospitalizations. MRSA nasal swabs can provide useful information when determining whether to initiate or stop empiric vancomycin.

Disclosures. All authors: No reported disclosures.

Disclosures. All authors: No reported disclosures.

893. Doing the Same with Less: A Randomized, Multinational, Open-Label, Adjudicator-Blinded Trial of an Algorithm vs. Standard of Care to Determine Treatment Duration for Staphylococcal Bacteremia

Thursday, 9:30 AM - 11:30 AM

Aims. Treatment duration for staphylococcal BSI at 16 sites in the US and Spain were randomized to ABT (N = 255) or SOC (N = 254). There were 116 patients with SAB (23%) and 385 (76%) with CoNSB (Figure 1). Overall success rate in the ABT group was 82.0% vs. 81.5% in the SOC group, difference 0.5%, 95% CI –2.5% to 6.1%. SAEs were reported in 32.9% of ABT vs. 28.3% of SOC patients (OR 1.9, 95% CI 0.9 to 1.9). Among evaluable patients without complicated BSIs, mean duration of therapy was 4.4 days in the ABT group vs. 6.4 days in the SOC group (difference –2.0 days, 95% CI –3.3 to –0.7, P = 0.003). Among patients with uncomplicated ABT, treatment durations were similar (15.3 days in ABT vs. 16.3 days in SOC, difference –1 day, 95% CI –3.89 to 1.91, P = 0.497), whereas for uncomplicated CoNSB, duration was shorter in the ABT group (5.3 days in ABT vs. 8.4 days in SOC, difference –3 days, 95% CI –4.87 to –1.34, P < 0.001).

Conclusion. The use of a treatment algorithm for staphylococcal BSI was associated with significant reductions in duration of antibiotic therapy in patients without complicated BSIs, with significant differences in overall success and SAEs. Figure 1. Schematic of Study Design

Disclosures. V. Fowler Jr., NIH: Investigator, Contract HHSN272200900025C

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