1579. Reduction of Antimicrobial Resistance among Gram-Negative Pathogens after Antimicrobial Stewardship in Three Tertiary Egyptian Hospitals

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Methods. The study was conducted over three years in three tertiary-care hospitals in Egypt during 2014–2016. It included 578 GNR isolates from intra-abdominal infections (IAI), urinary tract infections (UTI), and respiratory tract infections (RTI). Identification of isolates was done by VITEK-2, and confirmed by MALDI-TOF at a central laboratory. A part of the study focused on Antimicrobial Resistance Trends (SMART). Susceptibility testing and molecular studies of resistance were conducted in the hospital laboratories. Starting from 2015, an antimicrobial stewardship (AMS) program was implemented in the 3 hospitals for fluoroquinolone restriction in empiric therapy, and early de-escalation of antimicrobial therapy.

Results. In Phase 1 (before AMS), 578 isolates of Gram-negative bacilli (GNB) were studied. Enterobacteriaceae comprised 66% of the total isolates. K. pneumoniae and E. coli were the most common (29.8% and 29.4%), followed by Acinetobacter baumannii (21.1%) and P. aeruginosa (9.9%). K. pneumoniae and E. coli were the predominant organisms in IAI (30.5% and 30.1% respectively) and UTI (38.9% and 48.6% respectively), while Acinetobacter baumannii was the most prevalent in RTI (40.2%). ESBL producers were phenotypically detected in 53% of K. pneumoniae, 68% of E. coli and 64% of Proteus mirabilis. Amikacin, imipenem, ertapenem and piperacillin/tazobactam were the highest resistance (60.7%, 38%, 49.3% and 46.5% respectively).

In Phase 2 (after AMS), 492 Gram-negative bacilli (GNB) were studied, showing similar distribution except for marked reduction in Acinetobacter baumannii (5.3% in IAI, 11.4% in RTI and 1% in UTI). ESBL continued to be high. Susceptibility to carbapenems increased to 70.9% for E. coli and 77.7% for all Enterobacteriaceae. PCR showed predominance of OXA-48-like (more than 50%) and NDM (more than 40%), with low percentages of IMP-1 and KPC-2.

Conclusion. Our results show high ESBL and carbapenemases rates compared with the region that call for an urgent national AMS program and strict implementation of infection control measures.

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1580. Impact of an Antimicrobial Stewardship Initiative Focused on Staphylococcus aureus Bacteremia

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Background. Antimicrobial stewardship is essential for the management of S. aureus bacteremia, which is associated with increased mortality and morbidity. We implemented a standardized form after review with the ASP medical director. The primary outcome was all-cause 30-day mortality and secondary outcomes were total guideline adherence (TGA) and appropriateness of therapy.

Methods. In the NIDC group, 9/62 (15%) had an AST input that provided recommendations on antibiotic management. When these cases were combined with those with IDN mortality was significantly improved compared with those without either IDC or AST input (11% vs. 23%, P = 0.04). Multivariable analysis revealed bacteremia clearance within 3 days and absence of IDT input or IDC were predictors of survival while age > 60 and ICU stay were predictors of mortality (P < 0.005).

Conclusion. Similar to prior studies, IDC was associated with increased adherence to standard management practices. Our study suggests that a pharmacy-driven AST can be an adjunct to IDC in improving outcomes of SAB.

Disclosures. All authors: No reported disclosures.

1582. The Value of Antimicrobial Stewardship Team (AST) in Conjunction with Infectious Diseases Consult in Reducing the 30-day Mortality of Patients with Staphylococcus aureus Bacteremia in a Single Academic Medical Center

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Methods. A retrospective, observational study of all SAB cases in adults ≥18 years old at a 1541-bed academic medical center from January 1 to December 31, 2015 was performed. Those meeting inclusion criteria underwent chart review for demographics, co-morbidities, presence of IDC or antimicrobial stewardship team (AST) input, management including follow-up blood culture, echocardiography, antibiotic choice and duration, and outcomes including relapse and 30-day mortality.

Results. 326 patients met inclusion criteria and 178 (54.4%) had SAB. Patient characteristics were balanced in IDC and no IDC (NIDC) groups including age, sex, co-morbidities, methicillin-resistant SAB rates except for more immunosuppressed hosts, and joint infections, and endocarditis (P < 0.05) in the IDC group. SOC including pericardial effusion, echocardiography, appropriate antibiotic choice and treatment duration were achieved more frequently in the IDC group (P < 0.05). Relapse rates were similar in IDC and NIDC groups (3% vs. 5%, P = 0.44, respectively). Lower 30-day mortality was observed with IDC but did not reach statistical significance (11% vs. 16%, P = 0.07). Patients with malignancy who had IDC had lower 30-day mortality compared with their counterpart in the NIDC group (6% vs. 35%, P = 0.01).

In the NIDC group, 9/62 (15%) had an AST input that provided recommendations on antibiotic management. When these cases were combined with those with IDC mortality was significantly improved compared with those without either IDC or AST input (11% vs. 23%, P = 0.04). Multivariable analysis revealed bacteremia clearance within 3 days and absence of IDT input or IDC were predictors of survival while age > 60 and ICU stay were predictors of mortality (P < 0.005).

Conclusion. Similar to prior studies, IDC was associated with increased adherence to standard management practices. Our study suggests that a pharmacy-driven AST can be an adjunct to IDC in improving outcomes of SAB.

Disclosures. All authors: No reported disclosures.

Conclusion. The Antimicrobial Stewardship initiative significantly improved adherence to evidence-based guidelines for S. aureus bacteremia management. Though no impact on all-cause mortality was observed, a significant effect was noted when TGA was achieved.

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