Session: P-11. Basic and Translational Science

Background. Pennsylvania participates in the National Antimicrobial Resistance Monitoring System (NARMS), which includes monitoring of Nontyphoidal Salmonella (NTS), a leading cause of bacterial foodborne illnesses in the United States.

Methods. Clinical NTS isolates submitted to the Pennsylvania Department of Health (2015-18) were tested for susceptibility to 15 antimicrobial agents and analyzed by whole-genome sequencing (WGS). Concurrently, we conducted a prospective microbiological survey of NTS in retail meat products (chicken breasts, ground turkey, and pork chops) with susceptibility testing and WGS.

Results. Of a sample of 426 clinical Salmonella isolates from humans analyzed for antimicrobial susceptibility, 65 (15.3%) had decreased susceptibility to ciprofloxacin (DSC). Ampicillin resistance was observed in 39 (9.2%) and 15 (3.5%) were ceftriaxone-resistant. Ten ceftriaxone-resistant isolates had genetic elements that confer resistance to third generation extended-spectrum cephalosporins (ESC) [blaCTX-M-15, n=8 and blaCTX-M-65, n=2]. The blaCTX-M-65-positive isolates had a mutation in gyrA that confers fluoroquinolone resistance. Thirteen clinical isolates carried plasmid meditated fluoroquinolone resistance genes (PMQR) [qnrS1, qnrB4, qnrA1]. We detected NTS in 131 (3.8%) of 3480 meat samples tested. 7 (5.3%) had DSC, while 38 (29%) and 21 (16%) were resistant to ampicillin and ceftriaxone, respectively. Four S. Infantis isolates had DSC and a blaCTX-M-65 gene plus a mutation in gyrA. Thirteen meat isolates had the blaCTX-M-65 gene. One additional blaCTX-M-65-positive S. Infantis without gyrA from ground turkey (SRR2351119) differed from four clinical isolates by ≤10 single-nucleotide polymorphisms. Percent of isolates from meat and patients that demonstrated resistance to amoxicillin-clavulanate (AMC), ceftriaxone, and decreased susceptibility to ciprofloxacin (DSC) to nine antimicrobial classes tested.

Disclosures. Ryan P. Moenster, Pharm.D., FIDSA. AbbVie (Speaker’s Bureau); Melinta (Consultant, Speaker’s Bureau)

323. Safety and Effectiveness of Intravenous to Oral De-escalation Compared to Continued Vancomycin Therapy in Orthopedic Infections

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Session: P-12. Bone and Joint

Background. The Oral versus Intravenous Antibiotics for Bone and Joint Infection (OVIV A) trial determined oral antibiotics administered during the first seven days of therapy were non-inferior to parenteral antibiotics. There was no difference in the incidence of serious adverse effects. The objective of this study was to evaluate the safety and effectiveness of de-escalating to oral therapy compared to continuing parenteral vancomycin therapy in patients with orthopedic infections in a real-world setting.

Methods. We conducted a single-center, retrospective cohort study of patients discharged between April 1, 2018 and April 1, 2020 with an orthopedic infection, a pre-index period of at least four weeks of parenteral vancomycin, and documented follow-up. The primary outcome was incidence of adverse events defined as provider documentation of the outcome occurring during therapy. The secondary outcome was incidence of 6-month treatment failure defined as repeat surgical intervention or therapy escalation.

Results. One hundred fifty-seven patients were included. Twenty-nine (18.5%) patients were de-escalated to oral therapy. Three (10%) patients in the oral therapy group had an unplanned readmission compared to 25 (20%) patients in the vancomycin group (p=0.24). Of the 35 patients with an adverse event in the vancomycin group, eight were due to parenteral access-related complications. Treatment failure occurred in three (10%) patients in the oral therapy group compared to 27 (21%) patients in the vancomycin group (p=0.29). Three (10%) patients in the oral therapy group had an unplanned readmission compared to 25 (20%) patients in the vancomycin group (p=0.24).

Baseline Characteristics, Unplanned Readmission Rates, and Incidence of Adverse Events and 6-Month Treatment Failure

| Characteristic or Outcome | Oral De-escalation (n=29) | Continued IV Vancomycin (n=128) | P-value |
|---------------------------|--------------------------|---------------------------------|---------|
| Indication                |                          |                                 |         |
| Prosthetic Joint Infection, n (%) | 6 (21) | 55 (43) | 0.05 |
| Native Joint Infection, n (%) | 7 (24) | 7 (5) | 0.003 |
| Osteomyelitis, n (%)       | 11 (38) | 35 (27) | 0.26 |
| Venereal Osteomyelitis, n (%) | 4 (14) | 29 (22) | 0.27 |
| Total Duration of Therapy, days, median (IQR) | 42 (40-56) | 42 (45-58) | 0.37 |
| Complicated Therapy, n (%) | 29 (100) | 118 (93) | 0.12 |
| Concomitant Antimicrobial, n (%) | 16 (55) | 63 (49) | 0.56 |
| Antibiotic Allergies Present, n (%) | 3 (10) | 40 (31) | 0.02 |
| Unplanned Rehospitalizations, n (%) | 3 (10) | 25 (20) | 0.24 |
| Adverse Reaction, n (%) | 0 (0) | 11 (8.6) |         |
| Treatment Failure, n (%) | 3 (10) | 17 (13.3) |         |
| Allergic Reaction, n (%) | 3 (10) | 30 (24) | 0.058 |
| Dermatologic Reaction, n (%) | 3 (10) | 5 (3.9) |         |
| Worsening Renal Function, n (%) | 0 (0) | 11 (8.6) |         |
| Parenteral Access-Related Complications, n (%) | 8 (28) | 9 (7) |         |
| Treatment Failure, n (%) | 3 (10) | 27 (21) | 0.29 |

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