230. Nontyphoidal Salmonella from Clinical and Retail Meat Sources Reveal Antimicrobial Resistance Genes for Ceftriaxone and Ciprofloxacin
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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-one-resistant. Ten ceftriaxone-resistant isolates had genetic elements that confer resistance to third generation extended-spectrum cephalosporins (ESCs) [\(\beta-lact_{\text{CMY-2}}\)-n=8 and \(\beta-lact_{\text{CTX-M-65-1}}\)-n=2]. The \(\beta-lact_{\text{CTX-M-34}}\)-positive isolates had a mutation in \(\text{gyrA}\) that confers fluoroquinolone resistance. Thirteen clinical isolates carried plasmid-mediated fluoroquinolone resistance genes (PMQR) [\(\text{qnrB19}, \text{qnrS1}, \text{qnrA1}\)]. We detected NTS in 131 (3.8%) of 3480 meat samples tested. 7 (5.3%) had DSC, while 38 (29%) and 21 (16%) of patients and meat sources that demonstrated resistance to amoxicillin-clavulanate (AMC), ceftriaxone, and decreased susceptibility to ciprofloxacin (DSC) to nine antimicrobial classes tested.

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232. 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 (OVIVA) trial determined oral antibiotics administered during the first six weeks of therapy were non-inferior to parenteral antibiotics. There was no difference in the incidence of severe adverse effects. The objective of our 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 prescription for 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 within 7 days of 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 a unplanned re-admission compared to 25 (20%) patients in the vancomycin group (p=0.29). 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 re-admission compared to 25 (20%) patients in the vancomycin group (p=0.24).

Disclosures. Ryan P. Moenster, Pharm.D., FIDSA; AbbVie (Speaker’s Bureau/Melinta (Consultant, Speaker’s Bureau))
Conclusion. Patients de-escalated to oral therapy had fewer adverse events and similar incidences of treatment failure compared to patients maintained on parenteral vancomycin. Switching to oral therapy avoids some adverse events related to parenteral access. Our results in an uncontrolled, real-world setting are consistent with the OPTIVA trial. Though limited by sample size, our data indicate switching to oral therapy in patients with an orthopedic infection improves safety outcomes without compromising effectiveness compared to continued parenteral vancomycin therapy.

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233. Osteomyelitis of the jaw: A retrospective analysis of clinical, microbiologic characteristics and antimicrobial treatment at a Tertiary Care Medical Center. Thinh Nguyen, DMD; Sudheer Suryapar, MD/ DMD; Leonor Echevarria, M.D.1;1Banner Health, Phoenix, Arizona; 2Grand Canyon Oral and Facial Surgery, Henderson, Nevada; 3Albuquerque Veterans Affairs Medical Center, Albuquerque, New Mexico

Session: P-12. Bone and Joint

Background. Osteomyelitis of the jaw is a relatively rare entity in the post antibiotic era. The aim of this study is to describe clinical characteristics, microbiological and antibiotic use (oral vs intravenous) for treatment. We review 5 years of experience at Banner University Medical Center-Phoenix (BUMC-P) of proven cases of OM jaw by clinical, pathological, radiological criteria.

Methods. Retrospective study of cases. From January 2011 to November 2015, 157 cases of osteomyelitis of the jaw, we excluded cases of radiation therapy or neoplasia to the head and neck region, a history of antiretroviral medication use. A total of 34 patients with diagnosis of osteomyelitis of the jaw were reviewed. All patients met criteria for diagnosis of osteomyelitis and underwent surgical debridement and received antibiotics that included parental, orals and combined. We reviewed clinical, microbiological, antibiotic use. A successful outcome was defined as elimination of clinical symptoms, restoration of function and if available radiographic evidence of arrest and resolution of bony necrosis.

Results. This retrospective study involved 34 patients. Most common organisms were oropharyngeal flora 22 samples (65%); streptococcus anginosus group: 4 samples grew unusual gram negative bacteria. 10 (29%) samples grew fungal species. Antimicrobial regimen was divided in: intravenous (n=14) (41.2%), oral (n=7) (20.6%) and parenteral/parenteral combinations as follows: 13 (38.2%). The average antibiotic duration was 8.1 – 4.7 weeks. We were able to follow up 30 patients, average follow up was 32.1-44.7 weeks. The overall success rate was (n=24) 80% with healing of or oral antibiotics group (n=13).

Conclusion. This study is limited by small numbers. Surgery and cultures should guide treatment of osteomyelitis of the jaw. The use of oral antimicrobial therapy was associated to a higher likelihood of treatment failure. Although rarely linked as a cause of osteomyelitis, the authors think that the cultivation of candida spp should prompt appropriate coverage. More study is required to understand the efficacy of oral anti-microbial therapy in treating osteomyelitis of the jaw.

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234. Dalbavancin versus Outpatient Parenteral Antimicrobial Therapy with Vancomycin for Treatment of Bone and Joint Infections in a Veteran Population. Emily A. Gibson, PharmD, AAHIVP;1 Tara L. Hopkins, Pharm.D, BCIDS; BCPS;2 Manuel R. Escobar, PharmD;1 Linda Yang, Pharm.D., BCIDR, BCPS;2 Elizabeth Walter, MD, FACP;1 Jose Cadena-Zuluaga, MD;3 South Texas Veterans Health Care System, San Antonio, Texas;4South Texas Veterans Health Care System, UT Health San Antonio;5Austin College of Pharmacy, Baltimore, Maryland;6University of Texas health and science center San Antonio, Audie L. Murphy VA Medical Center, San Antonio, Texas

Session: P-12. Bone and Joint

Background. Dalbavancin is a long-acting lipoglycopeptid with broad gram-positive activity. A long half-life makes it an attractive treatment option for bone and joint infections (BJI). Previous studies have demonstrated efficacy of dalbavancin in the treatment of BJI. Based on these studies, our institution established a protocol for using dalbavancin as an alternative to IV antibiotics via PICC line.

Methods. Chart review was performed to compare outcomes of patients who were treated with dalbavancin versus vancomycin for BJI from 8/2017 – 7/2020. Patients that received two doses of dalbavancin for BJI were compared with patients who received OPAT with vancomycin during the same time period. Patients were excluded if they were bacteremic or received dalbavancin for another indication. Data was collected from the Veterans Health Administration’s Corporate Data Warehouse and retrospective chart review. No statistical analyses were performed due to the descriptive nature of this study.

Results. A total of 59 patients were included; 25 received dalbavancin and 34 received vancomycin. Relevant differences in baseline characteristics included a higher proportion of patients with osteomyelitis (88% vs 74%) and refractory infection (64% vs 44%) in the dalbavancin group. More patients in the dalbavancin group (38% vs 24%) were readmitted for the same infection within one year, required (29% vs 21%) additional surgical intervention, and had increased CRP/T on follow-up labs (32% vs 21%). Dalbavancin use likely expedited discharge in at least 5 cases where vancomycin levels were not therapeutic. No significant adverse effects due to dalbavancin were noted, aside from one patient with an increase in serum creatinine. In the vancomycin group, 8 patients changed antibiotics due to adverse effects or difficulty managing levels and 3 patients had ED visits for PICC line care.

Conclusion. Dalbavancin may be a safe PICC-sparring treatment for BJI, particularly in cases where compliance is of concern, or there are logistical or tolerability issues with vancomycin. Our findings do raise concern for worse outcomes with dalbavancin, but the small sample size, difference in baseline characteristics between groups and descriptive nature of the study preclude any conclusions from being drawn.

Disclosures. All Authors: No reported disclosures

235. Outcomes Associated with Extended Oral Antibiotic Prophylaxis After 2-Stage Exchange Surgery to Prevent Recurrent Prosthetic Joint Infection. Martin L. Schweizer, PhD;1 Poozauri Sekar, MD;2 Bruce Beck, MA;3 Bruce Alexander, PharmD;2 Kelly Richardson, MA, PHD;2 Daniel Suh, MS MPH;2 Hiroyuki Suzuki, MD;2 Aaron J. Tande, MD;2 Mireia Puig-Asensio, MD, PHD;2 Kimberly Dukes, PhD;2 Julia Wallhof, MPH;2 Andrew Pugely, MD, MBA;4 Christopher Richards, MA;1 Stacey Hockett Sherlock, MA;1 RAJESHWARI NAIR, PHD, MBA, MPH;5 University of Iowa Carver College of Medicine, Iowa City, Iowa;6 University of Iowa, Iowa City, Iowa;7 Iowa City VA Health Care System, Iowa City, Iowa; 8University of Iowa Hospitals and Clinics, Iowa City, Iowa; 9Mayo Clinic, Rochester, MN; 10University of Iowa Hospitals & Clinics, Iowa City, IA; 11Iowa City VA, Iowa City, Iowa; 12University of Iowa Hospital and Clinics, Iowa City, Iowa; 13VA Iowa City Health Care System and University of Iowa, Iowa City, Iowa; 14The University of Iowa Carver College of Medicine, Iowa City, Iowa

Session: P-12. Bone and Joint

Background. 2-stage exchange (2SE) surgery is often used to treat chronic prosthetic joint infections (PJI). IDSA guidelines do not recommend oral antibiotic suppression after 2SE. However, a recent randomized trial suggested that oral antibiotics for 3 months after arthroplasty reimplantation may prevent recurrent PJI. Objective: To compare rates of treatment failure (i.e., recurrent PJI) and adverse reactions (ARs) among patients who received < 1 month of antibiotics directly after reimplantation to those who received > 3 months of antibiotics following reimplantation (extended antibiotics).

Methods. This retrospective cohort study included patients with hip, knee, or shoulder PJI who underwent 2SE at 83 VA hospitals between the years 2005-2017. PJI was defined using administrative codes and microbiology data. Patients were followed for 5 years to assess treatment failure (TF) and ARs. TF was defined as recurrent PJI, debridement, or reoperation. ARs included Clostridoides difficile infections (CDI), or antibiotic associated diarrhea (AAD) during or 72 hours after antibiotics. Chi-square tests were used to compare outcomes. Cumulative incidence function curves were created to compare TF rates between those who did and did not receive extended antibiotic treatment, incorporating the competing risks of TF and death.

Results. Of the 433 patients, most (97%) received < 1 month of oral antibiotics and 3% received extended antibiotics. The 15 patients who received extended antibiotics had similar rates of TF and ARs compared with patients who received < 1 month of oral antibiotics (Table). However, there was a trend toward higher rates of CDI (6.7% vs. 3.8%) and AAD (13.3% vs. 9.6%) among those who received extended antibiotics. There was no difference in TF comparing extended antibiotics with < 1 month of anti-biotics, accounting for death (Figure).

Table: Treatment Failure and Adverse Reactions Among Those Who Did and Did Not Receive Extended Antibiotics

| Treatment Failure | 1 Month Oral Antibiotics (n=418) | 3+ Months Oral Antibiotics (n=15) | p-value |
|-------------------|-----------------------------|-------------------------------|--------|
| Recurrence | 56 (13.4%) | 3 (20%) | 0.46 |
| Late Debridement | 47 (11.2%) | 3 (20%) | 0.30 |
| Recurrent PJI | 46 (11.0%) | 2 (13.3%) | 0.78 |

Anti-Deceases

C difficile Infection | 16 (16.8%) | 1 (6.7%) | 0.58 |
Antibiotic Associated Diarrhea | 40 (9.6%) | 2 (13.3%) | 0.63 |

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