pyrazinamide), representing a higher percentage than in previous reports and potentially reflecting its presence in unpasteurized dairy products in the California-Baja region. Local epidemiological trends in endemic MTB complex species should be considered when evaluating and managing MTB complex OAI. Bone biopsy produced the highest culture yield in this study. Given the rarity of this disease, multicenter collaborative studies are needed to improve our understanding of the presentation and management of pediatric MTB complex OAI.

Disclosures. Vanessa Raabe, MD, MSc, Pfizer (Scientific Research Study Investigator, Other Financial or Material Support, Editorial support)Sanofi (Scientific Research Study Investigator).

1151. Clinical Characteristics of Persistent Staph Aureus Bacteremia in Children

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Session: P-64. Pediatric Bacterial Studies (natural history and therapeutic)

Background. Persistent Staphylococcus aureus bacteremia (pSAB) is a poorly defined entity, but associated with significant morbidity and mortality in children. We aim to better describe the epidemiological features of this clinical entity.

Methods. We performed a retrospective case series analysis of pediatric patients with pSAB at a single center children’s hospital using electronic medical data from 2016 – 2020. Bacterial persistence was defined as culture growth > 72 hours after first blood culture.

Results. Twenty-two patients with pSAB were included in the analysis. Sources of persistent infection were endovascular infection (n=11, 50%), osteoarticular infection (n=6, 27%), isolated central line associated blood stream (n=4, 18%), isolated skin and soft tissue infection (n=2, 9%), and no known primary infectious site (n=2, 9%). Methicillin resistance occurred in 41% (n=9) of cases of pSAB. Total duration of therapy varied, with a median of 4 weeks from negative cultures (range of 2 – 8 weeks). Total days of positive cultures in pSAB were not significantly associated with methicillin susceptibility of the bacterial isolate, use of double gram-positive coverage, nor presence of a central venous catheter. Use of double gram-positive coverage occurred in 50% of cases with a mean duration of therapy of 11 days, most frequently in cases of septic thrombophlebitis (Table 1). Rifampin and gentamicin were the most commonly used agents.

Table 1. Clinical Characteristics of Children Treated with Double Gram-Positive Coverage

| Age | Primary Agent | Secondary Agent | Source of Infection | Days of Positive Cultures | Duration of Double Coverage (Days) | Central Venous Access Present | Hospital Outcomes |
|-----|--------------|-----------------|--------------------|--------------------------|-----------------------------------|-------------------------------|-----------------|
| 6-weeks | Oxacillin | Vancomycin, Rifampin | Septic thrombophlebitis | 8 | 10 | Yes | NCU |
| 2-weeks | Vancomycin | Gentamicin | Septic thrombophlebitis | 5 | 4 | Yes | NCU |
| 2 years | Vancomycin, Gentamicin | Chloramphenicol, Enterococcus | Septic thrombophlebitis | 6 | 12 | No | NCU |
| 2 years | Oxacillin, Ceftriaxone | Chloramphenicol, Enterococcus | Anterior mediastinal abscess | 5 | 10 | No | General Pediatric |
| 5 years | Vancomycin | Erythromycin, S. aureus | Septic thrombophlebitis | 7 | 15 | No | NCU |
| 10 months | Vancomycin | Erythromycin, S. Aureus | Septic thrombophlebitis | 6 | 12 | No | NCU |
| 11 months | Vancomycin | Erythromycin | Septic thrombophlebitis | 5 | 3 | Yes | General Pediatric |
| 2 months | Vancomycin | Gentamicin | Septic thrombophlebitis | 5 | 10 | No | NCU |
| 10 years | Oxacillin | Gentamicin | Endocarditis | 5 | 5 | No | NCU |
| 2 years | Vancomycin | Gentamicin | Endocarditis | 5 | 10 | No | NCU |
| 2 years | Vancomycin | Clarithromycin | Endocarditis | 5 | 10 | Yes | NCU |

Conclusion. Children presenting with persistent S. aureus bacteremia present with a heterogenous group of underlying conditions and epidemiological features. While pediatric recommendations for double gram-positive coverage for synergy have not been established, their use for pSAB is common, especially in endovascular infections where culture persistence is often an expected outcome. Further research should examine risk factors for pSAB and define optimal treatment modalities and duration.

Disclosures. All Authors: No reported disclosures

1152. Microbiology of Pediatric Neck Infections Based on Age and Anatomical Location

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Session: P-64. Pediatric Bacterial Studies (natural history and therapeutic)

Background. Studies of pediatric neck infections demonstrate an increase in methicillin resistant Staphylococcus aureus (MRSA), and predominance of Staphylococcus aureus (S. aureus) in infants, and commonly polymicrobial infections. Thus, some providers treat acute neck infections with empiric broad spectrum antibiotics, often with two drugs. Our institution often uses clindamycin plus ampicillin-sulbactam as empiric therapy for hospitalized children with acute neck infection. We aimed to identify the microbiology of acute neck abscesses at our institution to determine if stratifying by age and abscess location would allow for single agent therapy.

Table 1. Causative organism based on anatomical location of neck infection.

| ORGANISM | MEDIAL | LATERAL | BOTH | TOTAL |
|----------|--------|---------|-------|-------|
| Staphylococcus aureus | 11 | 31 | 2 | 44 |
| Group A | 16 | 6 | 0 | 22 |
| Streptococcus anginosus | 16 | 2 | 1 | 19 |
| Fusobacterium | 6 | 1 | 0 | 7 |
| Prevotella | 7 | 0 | 0 | 7 |
| Haemophilus influenzae | 4 | 1 | 0 | 5 |
| Viridans Streptococcus | 4 | 0 | 0 | 4 |
| Peptostreptococcus | 3 | 0 | 0 | 3 |
| Eikenella | 3 | 0 | 0 | 3 |
| Group C | 1 | 0 | 0 | 1 |
| Streptococcus | 0 | 1 | 0 | 1 |
| Streptococcus pneumoniae | 1 | 0 | 0 | 1 |

Methods. Diagnosis codes identified patients hospitalized with acute neck infections. Cases with underlying malignancy, cervicofacial malformations, or lymphatic malformations were excluded. Patients with surgical cultures were categorized into two groups based on anatomical location of infection: medial (retropharyngeal, parapharyngeal, and peritonsillar), lateral (other locations), or both. Within each group, causative pathogen(s) were explored and further categorized by age (infants: < 1 year old; non-infants: ≥ 1 year old).

Results. 412 patients were hospitalized for acute neck infection of which 132 had surgical cultures. 110 had growth of one or more pathogens (20 infants, 90 non-infants). 53 infections were located medially, 54 laterally, and 3 had both locations involved. S. aureus was most commonly identified, with lateral infections accounting for the majority (Table 1). 40/44 S. aureus isolates were susceptible to clindamycin. Among medial infections, Streptococcus Anginosus and Group A Streptococcus were most common followed by S. aureus (Table 1). 17/20 (85%) positive cultures in infants grew S. aureus with 8/17 (47%) MRSA. No polymicrobial infections were identified in infants. Among non-infants, 0/39 lateral infections had polymicrobial growth but 23/50 (46%) of medial infections did.

Conclusion. Local epidemiology based on anatomical location and patient age suggests a single agent (clindamycin for lateral and penicillin with beta-lactamase inhibitor for medial) may be reasonable for non-infants with uncomplicated neck infections. For infants, coverage of MRSA, regardless of anatomical location, is advisable.

Disclosures. All Authors: No reported disclosures

1153. ESBL Producing E. coli Urinary Tract Infections in Children: Is Carbapenem Always Necessary?

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Session: P-64. Pediatric Bacterial Studies (natural history and therapeutic)

Background. Urinary tract infections (UTI) are common in children with a prevalence of 5% in infants. UTI are the main reason for beginning antibiotic therapy in children's hospitals and E. coli is approximate 80% of urinary pathogens.
Extended-spectrum beta-lactamases (ESBL) producing E. coli are a common concern in daily practice. Carbapenems, especially ertapenem are the choice for the treatment in some hospitals, but aminoglycosides or trimethoprim and sulfa-methoxazole are options for carbapenem saver. The aim of this study was comparing the clinical outputs in ESBL producing E. coli ITU in children treated with ertapenem or amikacin.

**Methods.** We designed a quasi-experimental study. In 2018 the antimicrobial stewardship program begins the use of amikacin for non-septic UTI for ESBL producing E. coli. Before this recommendation the use of ertapenem was common. We use WHONET 5.6 to identify ESBL producing E. coli UTI between 2016 and 2020. We analyzed the information using R 4.0.3.

**Results.** We analyzed 162 clinical records. 89 in ertapenem group, 45 in amikacin group, 23 in other treatments (TMP-SMX, meropenem) and 5 patients that received empirical treatment (Cefazolin) with clinical improvement and ambulatory management. The initial clinical and paraclinical variables was similar between two groups, only meropenem was more frequent in amikacin group as empiric treatment (table 1). Amikacin group received for media 7.4 days of antibiotic therapy (IQR 7-7.5) and ertapenem 8.2 days (IQR 7-10) (p value 0.049). The mortality, PICU requirement, mechanical ventilation and inotropic requirement was similar an both groups (Table 2). In amikacin group the median length of stay was 7.2 days (IQR 4-9) and in ertapenem group was 9 days (IQR 6-10). No significant adverse effects were documented in any group.

Table 1. Patient’s characteristics in both groups.

|               | ertapenem (89) | amikacin (45) | p-value |
|---------------|----------------|---------------|---------|
| Age months: median (IQR) | 49.08 (10 - 53) | 39.2 (9 - 53) | 0.41    |
| Sex           |                |               |         |
| Male          | 20 (22.5%)     | 9 (20%)       | 0.82    |
| Female        | 69 (77.5%)     | 36 (80%)      |         |
| Type of infection |              |               |         |
| Asymptomatic bacteriuria | 4(4.5%)        | 2(2.2%)       | 0.96    |
| Cystitis      | 8(9%)          | 4(8.8%)       |         |
| Pyelonephritis | 76(85.3%)      | 39(86.6%)     |         |
| Urinary sepsis | 1(1.1%)        | 1(2.2%)       |         |
| Urinary septic shock | 0             | 0             |         |
| Empiric treatment |            |               | 0.0006  |
| Cefazolin     | 74(83.4%)      | 28(62.2%)     |         |
| Cefuroxime    | 2(2.2%)        | 3(6.6%)       |         |
| Meropenem     | 1(1.1%)        | 8(17.7%)      |         |
| Amikacin      | 3(3.3%)        | 3(6.6%)       |         |
| Ertapenem     | 6 (6.7%)       | 0             |         |
| Ceftazidime   | 0              | 1(2.2%)       |         |
| Other         | 3(3.3%)        | 2(4.4%)       |         |
| Duration empiric treatment days. Median (IQR) | 3 (2-3)        | 3 (2-3)      | 0.41    |
| Prematurity    |                |               |         |
| Yes           | 9 (10.1%)      | 5 (11.1%)     | 1       |
| No            | 71 (79.8%)     | 37 (82.2%)    |         |
| Missing       | 9 (10.1%)      | 3 (6.7%)      |         |
| Functional or anatomical disorder of urinary tract |                |               | 0.38    |
| Yes           | 23 (25.8%)     | 8 (17.8%)     |         |
| No            | 65 (73%)       | 37 (82.2%)    |         |
| Neurological disease |           |               | 0.49    |
| Yes           | 8 (9%)         | 2 (4.4%)      |         |
| No            | 81 (91%)       | 43 (93.5%)    |         |
| First UTI     |                |               |         |
| Yes           | 50 (56.2%)     | 26 (57.8%)    | 1       |
| No            | 39 (43.8%)     | 19 (42.2%)    |         |
| Service       |                |               | 0.53    |
| PICU          | 3(3.3%)        | 1(2.2%)       |         |
| General hospitalization | 0           | 0             |         |
| Emergency room | 86 (96.6%)     | 43 (95.5%)    |         |

**Conclusion.** The use of amikacin in ESBL producing E. coli ITU in children have similar clinical outputs that ertapenem. The use of amikacin could decrease the hospitalization time.

**Disclosures.** Ivan Felipe Gutiérrez Tobar, n/a. Pfizer and MSD (Advisor or Review Panel member, Research Grant or Support, Speaker’s Bureau, Has received support from Pfizer and MSD for participation in congresses and has received conference payments from Pfizer/Pfizer and MSD Speaker’s Bureau, Other Financial or Material Support, Has received support from Pfizer for participation in congresses)

1154. Safety and Efficacy of Ceftolozane/Tazobactam Plus Metronidazole Versus Meropenem in Pediatric Participants With Complicated Intra-abdominal Infection: A Phase 2, Randomized Clinical Trial

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**Session:** P-64. Pediatric Bacterial Studies (natural history and therapeutic)

**Background.** Ceftolozane/tazobactam (C/T), a cephalosporin-β-lactamase inhibitor combination, is approved for treatment of complicated urinary tract infections, complicated intra-abdominal infections (cIAI), and nosocomial pneumonia in adults. Safety and efficacy of C/T in pediatric participants with cIAI was assessed.

**Methods.** This phase 2 study (NCT03217136) compared C/T + metronidazole (MTZ) with meropenem (MEM) for treatment of cIAI. Age- and weight-adjusted dosing is summarized in Table 1. The primary objective was to evaluate the safety and tolerability of C/T + MTZ compared with MEM. A key secondary endpoint was clinical cure at end of treatment (EOT) and test of cure (TOC).