Table 3: Antibiotic Resistance (% Resistant)

| Lactose Fermenting (n=150) | Non-Lactose Fermenting (n=150) | p value |
|---------------------------|-------------------------------|--------|
| **ABX**                   |                               |        |
| Ampicillin                | 53%                           | 43%    | 0.161 |
| Amp-Sulbactam             | 25%                           | 20%    | 0.441 |
| Piperacillin-Tazobactam   | 2%                            | 3%     | 0.992 |
| Cefazolin                 | 18%                           | 9%     | 0.078 |
| Ceftriaxone               | 13%                           | 4%     | 0.056 |
| Cefepime                  | 8%                            | 1%     | 0.033 |
| Carbenapen                | 0                             | 0      | N/A   |
| Gentamicin                | 11%                           | 15%    | 0.222 |
| TMP-SMX                   | 31%                           | 25%    | 0.135 |
| Cipro                     | 27%                           | 30%    | 0.082 |
| ESBL Positive             | 12                             | 2      | 0.049 |

2017. Colistin Susceptibility Testing Using the MicroScan® Colistin Well

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Session: 234. Diagnostics – Bacterial Identification and Resistance

Non-Lactose Fermenting E. coli are more likely to be isolated from patients in the community, have no difference in predilection for nor site of infection, and are less likely to be resistant to later generation Cephalosporins.

Disclosures. All authors: No reported disclosures.

2018. Performance of TEM-PCR vs. Culture for Bacterial Identification in Pediatric Musculoskeletal Infections

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Session: 234. Diagnostics – Bacterial Identification and Resistance

Background. Musculoskeletal infections (MSI) in children require prompt diagnosis and treatment due to risk of local tissue damage and metastatic bacterial spread. Staphylococcus aureus is the leading cause of MSI and readily grows in culture; however, receipt of antibiotics prior to culture and the frequency of fastidious organisms in young children (e.g., Klebsiella spp.) often leads to negative cultures and broad treatment regimens. Thus, there is a need for improved rapid diagnostics in children with MSI. In this study, we compared the detection of MSI pathogens by culture and by target-enriched multiplex PCR (TEM-PCR®) in children with MSI.

Methods. Synovial fluid and bone samples were collected from patients with MSI (n = 25, 0.5–18 years). Bacterial cultures and antibiotic susceptibility testing (AST) were performed by Vanderbilt University Medical Center clinical laboratory. Additionally, samples were evaluated by TEM-PCR for detection of S. aureus [including methicillin and clindamycin resistance genes and the Panton–Valentine leukocidin (PVL) locus], E. coli, Haemophilus influenzae, Streptococcus pyogenes, and Streptococcus pneumoniae.

Results. TEM-PCR detected a pathogen in 20/25 subjects (80%), compared with 17/25 (68%) by culture. S. aureus was identified in 18 subjects, one of which was identified by TEM-PCR and not by culture. TEM-PCR also identified 2 subjects with K. kingae infection; neither was identified by culture. TEM-PCR detection of methicillin resistance (MIC > 2) or clindamycin resistance was 100% concordant with AST in the clinical laboratory. Genes encoding PVL were identified in 8/18 (44%) S. aureus samples. No bacterial co-detections were identified, and no other pathogens were identified by TEM-PCR or culture. Finally, there were no subjects with positive bacterial cultures and negative TEM-PCR results.

Conclusion. Rapid diagnostic assays, such as TEM-PCR, may be useful adjuncts to conventional culture-based testing for children with MSI. Advantages include rapid identification of pathogen and early detection of antibiotic resistance genes. In a single multiplex assay, TEM-PCR provided reliable identification of MSI pathogens, with the potential for informing antibiotic selection early in the disease course.

All authors: No reported disclosures.

2019. Molecular characterization and antimicrobial susceptibility of extended-spectrum b-lactamases (ESBL) producing enterobacteriaceae (ESBLE) causing urinary tract infections (UTI): Results from the Study for Monitoring Antimicrobial Resistance Trends (SMART), 2010–2015, South Africa

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Session: 234. Diagnostics – Bacterial Identification and Resistance

Background. To better inform infection control and antibiotic stewardship programs, we investigated antimicrobial susceptibility trends and assessed the molecular characteristics of ESBLE, particularly of Escherichia coli (EC) and Klebsiella pneumoniae (KP) isolates, from patients with UTI treated at 6 local healthcare centers.

Methods. Consecutive isolates from 147 patients were sent to a central laboratory for species identification and drug susceptibility tests (Fig), Cochran-Armitage test was used to examine trends in susceptibility. EUCAST version 7.1 Minimum inhibitory concentration (MIC) interpretive criteria were used to identify susceptible isolates.

Results. All isolates were ESBL-producers based on phenotypic tests. EC and KP were the most frequent organisms identified comprising 138/147 (94%); there was no significant association between organism and LOS (Fig). We did not find any blaTEM genes, however, blaSHV (30%), KPC (0%), NDM (0%) genes, which were encountered in CAI as frequently as they were in HA were present in 5/6 (83%) EC and KP isolates susceptible to carbapenems. 9/10 (90%) isolates susceptible to carbapenems were also susceptible to quinolones.

Conclusion. Quinolones should be avoided as empirical therapy for UTI with ESBL; TZP is not an ideal substitute that can protect carbapenems in South Africa.