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305. Enterobacteriaceae Native Joint Septic Arthritis
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Background. Native joint septic arthritis (NJSA) is commonly caused by Gram-positive organisms. Gram-negative NJSA is uncommon, and discussion is usually limited to gonococcal arthritis despite NJSA due to enterobacteriaceae being more prevalent. We aimed to describe the clinical features, treatment, and outcomes of enterobacteriaceae NJSA (ENJSA).

Methods. Cases were obtained from a previously described retrospective cohort of adult NJSA admitted to Middlemore Hospital, Auckland, and New Zealand between January 1, 2009 and December 31, 2014. ENJSA episodes were compared with non-Enterobacteriaceae NJSA (NENJSA).

Results. From 543 NJSA episodes identified, ENJSA were the most frequent Gram-negative group (7%, 36/543) followed by HACEK (25/543), nonfermenters (10/543), Pasteurella (9/543), and Neisseria (5/543). The median age of ENJSA cases was 50 years and 72% were male. Immune compromise was more prevalent in ENJSA (19%, 7/36) than NENJSA (8%, 42/507), P = 0.0341. The most common causative organism for ENJSA was E. coli (10/36), followed by Enterobacter cloacae (8/36) and Klebsiella pneumoniae (6/36). Polymicrobial infection was more common in ENJSA (64%, 23/36) than NENJSA (20%, 99/507), P = 0.0001. All ENJSA cases were mono-articular, and 72% (26/36) affected large joints. Small joint infection was less common in ENJSA (28%, 10/36) than NENJSA (47%, 240/507), P = 0.0002. Carbapenems and ciprofloxacin were the most commonly utilised antimicrobials for ENJSA. Clinical outcomes were worse for ENJSA, with higher rates of treatment failure (53%, 19/36) than NENJSA (15%, 76/507), P = 0.0001 (although this association did not persist on multivariate analysis of the whole cohort) and longer mean length of stay (23.2 vs. 12.8 days P = 0.0001).

Conclusion. Enterobacteriaceae are an important and poorly described cause of NJSA, associated with immune compromise, large joint infection, polymicrobial infection, treatment failure, and increased hospital length of stay. The optimal management strategy to improve ENJSA outcomes is unknown, but may include more aggressive surgical and longer medical therapy. Further studies of ENJSA are warranted.

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306. Safety and Tolerability of Tedizolid as Oral Treatment for Bone and Joint Infections
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Background. Bone and joint infections (BJI) are common infections managed by infectious diseases specialists. There are increasing data that oral therapy is equivalent to intravenous therapy and is typically preferred by patients. However, there are limited safe oral options to treat some causative pathogens. Tedizolid is an oxazolidinone with broad Gram-positive coverage that in animal studies lacks the hematologic and neurologic toxicity of linezolid.

Methods. We are conducting an open-label single-center trial of oral tedizolid for the treatment of BJIs. The primary outcome of this study is patient safety. Patients are eligible if they have a BJI caused by documented or suspected Gram-positive pathogen and require at least 4 weeks of therapy (up to 12 weeks). Enrolled patients undergo weekly monitoring for neurologic and visual, side effects and weekly hematologic and comprehensive chemistry panel lab monitoring. Patients with peripheral neuropathy and cytopenias are excluded from participation.

Results. To date, we have enrolled 19 subjects (17 (89%) male) with BJIs (11 (58%) hardware associated infection, 5 (26%) osteomyelitis without prosthesis, 3 (16%) prosthetic joint infection). Significant comorbidities include six (32%) with diabetes and one (5%) with systemic lupus. Seventeen (74%) patients have completed therapy, two (11%) remain on therapy, one (5%) withdrew from the study, and two (11%) were lost to follow-up. Mean (median) duration of treatment has been 9.7 (11) weeks with a range of 4–12 weeks. Significant drug-related adverse events occurred in two patients (11%), both with non-life-threatening maculopapular rashes, one of whom required treatment discontinuation. To date, there have been 10/14 (71%) treatment successes. Failures have been associated with previously undetected retained hardware (n = 1), sequestrum requiring surgery (n = 1), and failure to achieve cure after the designated treatment course (n = 2). There have been no cases of cytopenias, peripheral or optic neuropathy.

Conclusion. Tedizolid appears to be a well-tolerated oral antibiotic for the treatment of bone and joint infections for 4 weeks or greater. Clinical failure rates appear roughly similar to that of other oral options. Further study of tedizolid for BJIs is warranted.

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