included allergies (N = 6), GI toxicity (N = 5), increased liver function tests (N = 2), leukopenia (N = 2), acute kidney injury (N = 1), exacerbated epilepsy (possibly due to low phenytoin; N = 1), and vasculitis (N = 1). Patient age, sex, and Charlson comorbidity index did not predict rifampin intolerance. In 5/80 (6%) patients who never received rifampin, reasons included liver disease, drug interactions, and rifampin resistance. Overall, 27% (22/80) could not be adequately treated with rifampin.

Conclusion. In this study cohort of PJI patients, contraindications to rifampin initiation were infrequent, but discontinuation due to intolerance, allergy, or toxicity occurred in nearly a quarter of patients. Drug-drug interactions can preclude its use, or may cause important medication switches in critical areas such as anti-convulsation, epilepsy treatment, and HIV care. Research into the anti-staphylococcal efficacy and safety of alternative rifamycins (such as rifabutin and rifapentine) in patients with staphylococcal hardware infections is warranted.

Disclosures. All authors: No reported disclosures.

396. Aminoglycoside Acute Kidney Injury (AKI) Following the Implantation of Tobramycin Loaded Polymethylmethacrylate (PMMA) Cement and Calcium Sulfate (CaSO₄) Beads for the Treatment of Periprosthetic Joint Infection (PJI); Logan Vasil, PharmD; Raymond Chinn, MD; and Joshua Minuto, MD; Sharp Memorial Hospital, San Diego, California; Sharp Rees-Stealy Medical Group, Sharp Memorial Hospital, San Diego, California

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Background. Antibiotic loaded bone cement (ALBC) in PMMA, generally with tobramycin and vancomycin (TV) is commonly used for the treatment of PJI. CaSO₄-loaded beads with TV is biodegradable and can be used alone or in combination with PMMA. Identification of AKI following documentation of sustained supra-therapeutic tobramycin levels in a patient with chronic PJI treated with ALBC (both PMMA + CaSO₄) prompted the development of guidelines to mitigate risk of AKI in patients treated with ALBC. Although AKI may be enhanced with vancomycin, case reports with TV in PMMA implicate tobramycin. We provide data in a cohort of patients treated with PJI using PMMA or PMMA + CaSO₄.

Methods. Data were obtained to describe clinical findings. As part of a quality improvement initiative, tobramycin and serum creatinine levels were obtained in eight subsequent patients who received PMMA or PMMA + CaSO₄ and clinical guidelines were developed to standardize aminoglycoside dosing and monitoring. Vancomycin levels were not routinely monitored.

Results. Figure 1 describes the clinical course of the index patient. Table I lists doses, serum creatinine and tobramycin levels the cohort of PJI patients. All patients treated with PMMA + CaSO₄ had tobramycin levels from 3.5 to 8.7 µg/mL on a post-operative day (POD) 1 compared with < 2 µg/mL in patients treated with PMMA alone. All patients’ levels peaked on POD 1.

Conclusion. Patients treated with CaSO₄ had higher levels in the early postoperative period compared with patients treated with PMMA. In all patients, serum levels appeared similar after 48 to 72 hours. Our experience suggests the use of CaSO₄ + PMMA may have important clinical consequences in patients with decreased clearance and/or those at risk for early postoperative renal impairment. Guidelines developed mitigated this potential complication since we have not identified AKI in subsequent patients undergoing treatment of PJI with ALBC. Features of guidelines included: (1) identification of high-risk patients; (2) a flowchart to guide dosing recommendations based on low/high risk; (3) routine monitoring of levels on POD 1 with a goal of tobramycin ≤ 2 as a surrogate for toxicity. Pharmacy approved dosing must be incorporated into guidelines of care for patients undergoing arthroplasty where ALBC is used.

Disclosures. All authors: No reported disclosures.

398. Description of a Large Pediatric Lyme Arthritis Cohort in an Endemic Region
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Background. Lyme arthritis commonly presents as an acute inflammatory monarticular arthritis, frequently challenging to distinguish from septic arthritis. While management for Lyme arthritis focuses on antibiotic therapy, septic arthritis requires operative debridement plus antibiotic therapy. Delay in Lyme serology results may complicate decisions on surgical intervention in Lyme endemic areas. During the transition period of western Pennsylvania to a Lyme endemic region many children ultimately diagnosed with Lyme arthritis were managed by operative intervention due to diagnostic ambiguity. The impact of an operative intervention on outcomes of pediatric Lyme arthritis is unknown.

Methods. We conducted a retrospective chart review from 2008 to 2018 of patients admitted to UPMC Children’s Hospital of Pittsburgh and diagnosed with Lyme arthritis. We recorded the clinical presentation, laboratory data, details of hospitalization and follow-up, costs and outcome after therapy to compare the impact of antibiotic therapy alone (non-operative group) vs. antibiotics plus operative debridement (operative group).

Results. We identified 164 patients admitted for management of arthritis with the eventual diagnosis of Lyme arthritis. Fifty-two patients underwent operative debridement in addition to antibiotic therapy. Operative debridement plus antibiotics was associated with increased duration of admission, increased the cost of hospitalization, and increased PICC line placement compared with antibiotics alone. In patients for whom follow-up information was available, resolution of symptoms was documented in 62 of 66 patients in the non-operative group and 46 of 47 patients in the operative group with a median duration to symptom resolution of 17 and 23 days, respectively.

Conclusion. Operative debridement for pediatric patients with Lyme arthritis was associated with increased cost and duration of hospitalization, and a greater number of procedures, while being similarly efficacious to non-operative management with antibiotic therapy alone.

Disclosures. All authors: No reported disclosures.

397. Operative Intervention in Pediatric Lyme Arthritis Increases Healthcare Resource Utilization Without Improved Outcomes
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Disclosures. All authors: No reported disclosures.
400. Comparison of Tolerance and Microbiological Efficacy of Cefepime and Piperacillin/Tazobactam in Combination with Vancomycin as Empirical Antimicrobial Therapy of Prosthetic Joint Infection: A Propensity-Matched Cohort Study

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Background. The use of piperacillin/tazobactam with vancomycin as empirical antimicrobial therapy (EAT) for prosthetic joint infection (PJI) has been associated with an increased risk of acute kidney injury (AKI), leading to propose cefepime as an alternative since 2017 in our reference center. The present study compared microbiological efficacy and tolerance of these two EAT strategies.

Methods. All adult patients with PJI empirically treated by vancomycin–cefepime (n = 89) were enrolled in a prospective observational study, and matched with vancomycin–piperacillin/tazobactam-treated historical controls (n = 89) according to a propensity score including age, baseline renal function and concomitant use of other nephrotoxics. The two groups were compared using Kaplan–Meier curve analysis and non-parametric tests (Fisher exact test and Mann–Whitney U-test) regarding: (i) the propriety of the two empirical regimens (i.e., at least one of the two molecules active against the identified organism(s) based on in vitro susceptibility testing; and (ii) the incidence of empirical therapy-related adverse events (AE), classified according to the Common terminology criteria for AE (CTCAE).

Results. Among the 146 (82.0%) documented infections, the EAT was considered as efficacious in 77 (98.7%) and 65 (98.9%) of the piperacillin–tazobactam and cefepim-treated patients, respectively (P = 1.000). The rate of AE, and in particular AKI, was significantly higher in the vancomycin–piperacillin/tazobactam (n = 27 [30.3%] and 23 [25.8%]) compared with the vancomycin–cefepim (n = 13 [14.6%] and 6 [6.7%]) group (P = 0.019 and <0.001, respectively; figure), leading to a premature EAT discontinuation in 20 (22.5%) and 5 (5.6%) patients (P = 0.002). Of note, no significant differences were observed between the two groups regarding sex (91 males; 51.1%, median age 68-year-old; IQR, 59.3–75), main comorbidities including baseline renal function and proportion of patients receiving other nephrotoxics, and vancomycin plasmatic overload.

Conclusion. The empirical use of vancomycin-cefepim in PJI was as efficient as vancomycin–piperacillin/tazobactam, and was associated with a significantly lower incidence of AKI.

Disclosures. All authors: No reported disclosures.