use for SSTI is common. We determined the prevalence of SSTI and associated inappropriate antimicrobial use among inpatients in Sri Lanka.

Methods. A point-prevalence study of antimicrobial use was conducted using one-day cross-sectional surveys at five public hospitals in Southern Province, Sri Lanka from Jun-August 2017. Inpatients’ medical records were reviewed for clinical data including antimicrobials prescribed. Inappropriate antimicrobial use was identified as (1) antimicrobial use discordant with guidelines by the Sri Lanka College of Microbiologists (SLCM), and (2) redundant combinations of antimicrobials.

Results. Of 1,709 surveyed patients, 935 (54.7%) received antimicrobials, of whom 797 (83.3%) had a specified or inferred indication for antimicrobial use. Among patients with an indication for antimicrobial use, SSTI was the second leading indication (181 patients, 23.2%) after lower respiratory tract infection (194, 24.9%). One-third (62, 34.2%) of patients with SSTI had a history of diabetes. Commonly used antimicrobials for SSTI included amoxicillin and clavulanic acid (40.2%), extended-spectrum penicillins (24.8%), and metronidazole (22.1%), inappropriate antimicrobial use was observed in 53.0% of SSTI patients, with redundant antibiotic therapy in 35.9% and antimicrobials discordant with SLCM guidelines in 32.6%.

Conclusion. SSTI was a common reason for antimicrobial use among inpatients in Sri Lanka, with more than half of patients receiving potentially inappropriate antimicrobial therapy. We identified targets for future antimicrobial stewardship efforts.

Table 1: In Vitro Susceptibility Profile of Gram-Negative Rod Pathogens Isolated from Wound Cultures Among Breast Cancer Patients Who Developed Skin and Soft Tissue Infection following Breast Reconstructive Surgery, Moffitt Cancer Center, Tampa, 2016-2018. n=33

| Antibiotic | Susceptible, n (%) | Intermediate, n (%) | Resistant, n (%) |
|------------|--------------------|---------------------|-----------------|
| Amoxicillin| 1 (14%)            | 6 (86%)             | 0 (0%)          |
| Cefazolin  | 4 (57%)            | 3 (43%)             | 0 (0%)          |
| Cefotaxim  | 0 (0%)             | 0 (0%)              | 0 (0%)          |
| Cefepine   | 0 (0%)             | 0 (0%)              | 0 (0%)          |
| Ciprofloxacin| 0 (0%)         | 0 (0%)              | 0 (0%)          |
| Metronidazole | 0 (0%)         | 0 (0%)              | 0 (0%)          |
| Vancomycin | 0 (0%)             | 0 (0%)              | 0 (0%)          |

Disclosures. All authors: No reported disclosures.

437. Gram-Negative Rod Skin and Soft-tissue infections following Breast Tissue Expander Surgery in Breast Cancer Patients
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Background. Breast cancer patients who undergo tissue expander surgery (TES) are at an increased risk of developing gram-negative rod (GNR) skin and soft-tissue infection (SSI) and its complications including prolonged antibiotic therapy, antibiotic side effects, and implant removal. Current perioperative antimicrobials focus mostly on gram-positive organisms, but the presence of a foreign body increases the risk of GNR SSI. We describe here the most common GNR bacteria and their susceptibility patterns that cause SSI after TES among breast cancer patients.

Methods. We conducted a retrospective cohort study at Moffitt Cancer Center, Tampa, FL from January 2016, to January 2018, on all breast cancer patients who developed GNR SSIs following TES. We reviewed records after approval from the Institutional Review Board. The data collected included patient’s age, pathogens from wound culture, antibiotic susceptibilities, the perioperative and definitive antibiotic therapy. We reported on the use of DAL in a variety of oncology patients at a major cancer center. Clinical success was often achieved in ABSSSI with a single dose. Outside of its FDA-approved indication for the treatment of acute bacterial skin and skin structure infections (ABSSSI), there is a growing interest in the utilization of DAL for other indications, including catheter-related bloodstream infection (CRBSI). The long-acting formulation potentially facilitates patient discharge or admission deferral without the need for daily outpatient parenteral antimicrobial therapy (OPAT). However, there is limited experience reporting DAL utilization in an oncology population. The objective of this study was to report our experience with DAL in an oncology patient population at a National Cancer Institute (NCI) Designated Cancer Center.

Results. We identified 76 unique subjects, with 77 unique infectious episodes, receiving 78 DAL doses. The majority of the subjects were male (57%), the median age was 61 years old, 55% had a solid tumor type and most were treated for ABSSSI (86%). Doses were administered inpatient 76% of the time and most patients received 1500 mg (91%). The most common pathogen isolated was Staphylococcus aureus (19%). Patients frequently received additional methicillin-resistant Staphylococcus aureus active oral antibiotics (39%). Clinical success was reported in 78% of infections. Potential DAL-related AKI was identified in 4 subjects (5%).

Conclusion. We reported on the use of DAL in a variety of oncology patients at a major cancer center.
dose and nephrotoxicity was infrequently encountered. Limitations include the frequent use of additional, potentially active antimicrobials and difficulty in assessment of clinical success and AKI in patients after discharge.

Disclosures. All authors: No reported disclosures.

439. Iclaprim Use for Acute Bacterial Skin and Skin Structure Infection (ABSSSI) is Not Associated with Hyperkalemia: Phase 3 REVIVE Studies

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Background. Iclaprim is an investigational, sodium channel blocker (SCB) that inhibits potassium channels in the distal portion of the renal tubule, thereby impairing renal potassium excretion. Trimethoprim has been associated with a greater risk of hyperkalemia compared with other antibiotics (P = 0.00019, longer duration of IV (10.0 vs. 4.3 days, P = 0.0001) and higher rates of Gram-negative bacilli infections (P = 0.0001) available, a microorganism not associated with hyperkalemia.

Methods. A post-hoc safety analysis was conducted on pooled results of two Phase 3, double-blind, randomized (1:1), active-controlled trials (REVIVE-1/-2) in patients with ABSSSI. These trials compared iclaprim 80 mg fixed doses with vancomycin 15 mg/kg; both administered intravenously every 12 hours for 5–14 days. Hyperkalemia was defined as serum potassium (K) ≥ 5.5 mmol/L, if normal at baseline, while on study drug. Hyperkalemia was compared between treatment groups and stratified subgroup comparisons were performed.

Results. Demographics and baseline disease characteristics were similar between the pooled iclaprim and vancomycin groups (table). Hyperkalemia occurred during treatment in 1.5% (9/592) and 2.5% (15/599) of patients treated with iclaprim and vancomycin, respectively. Of the patients with hyperkalemia, one patient in each treatment group had moderate to severe renal impairment (creatinine clearance [CrCl] 15–59 mL/minute). Among patients with moderate to severe renal impairment on any 

n = 15

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n = 5

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Background. Actinomyces spp. are associated with numerous clinical diseases in humans; however, there are few case reports of necrotizing soft-tissue infections (NSTIs) involving these organisms. Their role in NSTIs has not been well described. At our medical center, we noted an increase in Actinomyces spp. isolated from the tissue specimens of patients with NSTIs, prompting further evaluation.

Methods. Microbiological cultures were utilized to identify patients with clinical cultures growing Actinomyces spp. from January 2008 to December 2018. Adult patients admitted to the R Adams Cowley Shock Trauma Center with a diagnosis of NSTI were included for analysis.

Results. Nine patients were identified meeting inclusion criteria, the first in February 2018–none prior. Organisms isolated from culture included Actinomyces turicensis (n = 3), Actinomyces europeus (n = 1), and five organisms identified only as Actinomyces species. 89% of patients had additional co-pathogens identified in their tissue cultures. Eight patients had NSTIs of the lower extremity (n = 5) and/or the genitourinary area (n = 6), and one had chronic decubitus ulcers. Comorbidities included diabetes mellitus (77%), chronic kidney disease (33%). 44% patients were in septic shock at presentation. Surgical debridement was performed in all patients. Eight patients were discharged on amoxicillin, with a mean treatment duration of 75 days (range 31–90). One patient was treated with ampicillin–sulbactam. Readmission rate at 90 days was 37%; only one was related to the index infection. One death occurred during the index hospitalization, secondary to NSTI. No patients experienced adverse drug reactions during therapy.

Conclusion. We describe one of the largest case series to date of Actinomyces spp. associated with NSTI. The startling appearance of Actinomyces spp. at our institution directly followed the implementation of matrix-assisted laser desorption/ionization time-of-flight mass spectrometry in January 2018. Actinomyces may play as co-pathogens contributing to the severity of NSTIs, augmenting the virulence of other organisms. As more advanced technology is used in laboratories to identify these organisms, further study is needed to determine pathogenicity and appropriate treatment.

Disclosures. All authors: No reported disclosures.

441. Factors Associated with a Change of Antimicrobial Therapy in Patients with Cellulitis Who Started with Aminocillin-Clevulinate (A/C) Monotherapy

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Background. Cellulitis is a frequent cause of admission of adult patients to medical wards and A/C monotherapy is commonly used as the initial regimen. Studies evaluating the factors associated with the change of this regimen are lacking.

Methods. Data were extracted from a prospective and observational study of 406 adult patients with cellulitis admitted to several Spanish hospitals. Comorbidities, microbiological, clinical, lab, diagnostic, and treatment data were analyzed and compared according to the continuation/change of A/C. Multiple logistic regression modeling was performed to determine the variables independently associated with A/C switching.

Results. Overall 259 (42.7%) patients started A/C monotherapy, 56 (21.6%) of which were switched to other antimicrobials (P = 0.0001). The variables independently associated with A/C switch in the multivariate analysis were longer duration of IV (4.3 vs. 2.3 days, P = 0.0001), and overall exposure to the microorganism identified (P < 0.0001) and needed more frequently surgical debridement. One death occurred during the index hospitalization, secondary to NSTI. No patients experienced adverse drug reactions during therapy.

Conclusion. We describe one of the largest case series to date of Actinomyces spp. associated with NSTI. The startling appearance of Actinomyces spp. at our institution directly followed the implementation of matrix-assisted laser desorption/ionization time-of-flight mass spectrometry in January 2018. Actinomyces may play as co-pathogens contributing to the severity of NSTIs, augmenting the virulence of other organisms. As more advanced technology is used in laboratories to identify these organisms, further study is needed to determine pathogenicity and appropriate treatment.

Disclosures. All authors: No reported disclosures.

440. Necrotizing Soft-Tissue Infections Involving Actinomyces Species

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Background. Actinomyces spp. are associated with numerous clinical diseases in humans; however, there are few case reports of necrotizing soft-tissue infections (NSTIs) involving these organisms. Their role in NSTIs has not been well described. At our medical center, we noted an increase in Actinomyces spp. isolated from the tissue specimens of patients with NSTIs, prompting further evaluation.

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Conclusion. We describe one of the largest case series to date of Actinomyces spp. associated with NSTI. The startling appearance of Actinomyces spp. at our institution directly followed the implementation of matrix-assisted laser desorption/ionization time-of-flight mass spectrometry in January 2018. Actinomyces may play as co-pathogens contributing to the severity of NSTIs, augmenting the virulence of other organisms. As more advanced technology is used in laboratories to identify these organisms, further study is needed to determine pathogenicity and appropriate treatment.

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