rate of recurrent cellulitis in the prophylactic period was 0.31 episode/patient-year, significantly lower than that of 0.77 episodes/patient-year in the non-prophylactic period (P = 0.004). The common underlying diseases of enrolled patients included diabetes mellitus (73, 35.4%), tinea pedis (69, 33.5%), impaired venous drainage (20, 9.7%), joint replacement of lower extremity (13, 6.3%) and edema status including congestive heart failure (19, 9.2%), chronic renal failure (15, 7.3%), and cirrhosis (8, 3.9%). In multivariate analysis of Poisson regression model, penicillin prophylaxis was associated with lower recurrence (relative risk (RR), 0.30; 95% confidence interval (CI), 0.13–0.69, P = 0.005), in contrast, impaired venous drainage (RR 2.78; CI, 1.20–6.48, P = 0.018) and tinea pedis (RR 3.04; CI, 1.17–7.90, P = 0.022) were associated with higher risk of recurrence.

Conclusion. The study was the largest cohort that demonstrated intramuscular injection of 2.4 million units benzathine penicillin with 4-week interval significantly reduced the incidence of recurrent cellulitis.

Disclosures. All authors: No reported disclosures.

267. Identification of Pathogens Directly From Diabetic Foot Infections by Shotgun Metagenomic Sequencing

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Background. Diabetic foot infections (DFIs) constitute the most common cause for diabetes-related hospitalization and lower extremity amputations. Current diagnostic techniques are flawed in some cases do not detect all potential pathogens. Metagenomics sequencing has the potential to merge rapidity and comprehensive information about causative pathogens in DFIs. The aim of this study was to evaluate the potential of metagenomics strategies for DFIs.

Methods. Thirty tissue specimens from patients with neuropathic plantar DFIs were analyzed. Specimens were processed using the Molzym Mysis five basic kit to deplete human cells. Microbial DNA was extracted using the QiaTen DNAeasy PowerSoil kit. Microbial 16s rRNA was conducted on the Illumina MiSeq instrument. Shotgun metagenomic was conducted using nanopore sequencing for seven samples. Libraries were prepared using the rapid low input PCR library preparation kit (SQK-R1010) and sequenced on a MinION using R9.4 (FLO-MIN 106) flow cells. Real-time identification of pathogens and antimicrobial resistance determinants (ARDs) were performed using EPI2ME’s WIMP and ARMA applications, respectively.

Results. Overall, the cohort characteristics included: 60% male, mean age 49 years, mean HgA1c 10.2%, and median PEDIS score 3. 16s sequencing identified reads belonging to bacteria isolated by culture, but also identified additional anaerobic pathogens in 70% of the specimens. Nanopore sequencing generated an average of 16.4 Mbp and an average read length of 1620–2700 bp. Shotgun metagenomics correctly detected the pathogens found in culture and in 16s RNA sequencing; the time to accurate classification threshold was completed in <1 hour. In two samples, several pathogens including anaerobes and fungi were identified that were not isolated by standard culture methods. The resistome included a range of 8–32 ARDs per sample. Furthermore, the resistomes were highly predictive (sensitivity 98% and specificity 88%) for antimicrobial resistance phenotypes detected by standard susceptibility testing.

Conclusion. Metagenomics-based sequencing has the potential to offer a rapid (<6 hours sample to result time) and accurate strategy for detecting and identifying pathogens and ARDs involved in DFIs.

Disclosures. All authors: No reported disclosures.

268. Seasonal and Environmental Variation of Lower Extremity Cellulitis Incidence Among Emergency Department Patients in Three Geographic Locations

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Background. Recent investigation has suggested a higher incidence of low extremity cellulitis (LEC) during the summer, but it is not clear if this phenomenon is limited only to certain climates or locations. We sought to investigate this phenomenon and further elucidate the relationship with environmental climate factors in three different geographic locations.

Methods. This was a retrospective study of all patients with at least 1 ICD-9 code recorded during an emergency department (ED) visit at Mayo Clinic in Scottsdale, AZ; Jacksonville, FL; and Rochester, MN; between January 1, 2009 and December 12, 2014. Demographics were defined using ICD-9 data. Temperature data was obtained from the National Oceanic and Atmospheric Administration website. The climates of each location were classified according to the Köppen Climate Classification System as hot desert (AZ), humid subtropical (FL) or humid continental (MN) climate types. The primary outcome was LEC (ICD-9 code 682.7) expressed as a proportion of 1000 ED visits (LEC visits/1000 EDV), to account for seasonal variation in ED usage. Univariate and multivariate regression were performed for analysis.

Results. There were 627,292 ED visits among 288,349 patients during the study period. The incidence of LEC visits/1000 EDV was significantly different across sites (9.36 in FL, 7.95 in AZ, and 7.39 in MN, P < 0.0001 for any difference). In the humid climate types (FL and MN), the peak incidences of LEC occurred in the warmest month; July in FL (11.77 LEC visits/1000 EDV) and August in MN (9.69 LEC visits/1000 EDV). In AZ, the peak incidence occurred in November, the fourth coolest month (9.44 LEC visits/1000 EDV) (Figure 1). There was a significant positive correlation between the high daily temperature and the incidence of LEC cellulitis in all three sites (Figure 2). After controlling for total daily ED visits, gender, and age, the high temperature for the day was significantly associated with occurrence of LEC cellulitis at each site (P < 0.0001).

Conclusion. The incidence of LEC presenting to the ED is associated with environmental temperature across different geographic locations and climate types, but slight variations in seasonality of infection was observed. Investigation to determine whether other environmental factors, in particular, humidity, are associated with the incidence of LEC is ongoing.

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269. Diabetic Foot Wounds: Which Patients are More Prone to Tetanus? Ferit Kuscu, MD1; Behice Kurtaran, Associated Professor2; Aslihan Ulu, Assistant professor1; Mehtap Ercan, Assistant Professor1; Sena Inal, Assistant Professor1; Suheyla Komur, Assistant Professor2; Salih Cetiner, Associated Professor1; Yeşim Tazova, Professor3 and Hasan Sahil Zeki Akus, Professor4; 1Cukurova University, Infectious Diseases, Turkey, Adana, Turkey, 2Cukurova University, Adana, Turkey, 3Infectious Diseases, Cukurova University, Adana, Turkey, 4cukurova University, Adana, Turkey

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Background. Patients who have diabetes and chronic wounds are more prone to tetanus than the other populations. The prevalence of diabetes among patients diagnosed with tetanus was 15%, nearly three times the average expected prevalence of diabetes in the United States. In this study, we aimed to evaluate the tetanus immunization status of the patients with diabetic foot wounds (DFW) and to determine the factors, which may predict to immunity against tetanus.

Methods. Patients who admitted to outpatient clinics with DFW were included between 1 January and 31 December 2016. Tetanus antibody levels were measured by a commercial Clostridium tetani 55 IgG ELISA kit. Antibody levels below 0.1 IU/ml were defined as “No reliable protection” and levels above 0.1 IU/ml were defined as “Reliable protection”. A questionnaire applied to all patients for detailed diabetes and vaccinating history about tetanus.

Results. Ninety-one patients were enrolled to the study, 66 (72.5%) of them were male and 25 (27.5%) of them were female. Mean age was 62 ± 11 years. Sixty-five (71.4%) of the patients had no reliable protection while 26 (28.6%) of them had reliable protection. Tetanus IgG titers were decreasing by the age (Figure). Univariate analysis