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Background. Diabetic foot ulcers are a frequent complication of patients with diabetes mellitus, two-thirds of these can become infected and up to 50% can develop a deep infection and osteomyelitis, which usually requires surgical management and prolonged antibiotic therapy. Microbiology is characterized by a predominance of Gram-positive (*Staphylococcus aureus* and negative coagulase), followed by enterobacteria and non-fermentors such as *P. aeruginosa*, but it is variable and factors such as the type of patient, wound characteristics, use of antibiotics, and the environment. In Chile, there are no recent data on microbiology or resistance in diabetic foot osteomyelitis, which is fundamental for the rational use of antibiotics. The objective of this study was the description of this microbiology and resistance in a teaching hospital in Santiago, Chile.

Methods. Retrospective study conducted at the DIPRECA Hospital. Residual bone cultures taken from the operating room were analyzed, from patients hospitalized for diabetic foot osteomyelitis between January 1, 2013 and December 31, 2018. Sex, age, the microorganism isolated in bone and its resistance profile were analyzed. The study is approved by the Hospital Ethics Committee.

Results. We analyzed 285 cultures of 107 patients. The mean age was 71 ± 9 years and 82% corresponded to male patients. 26% of the cultures were polymicrobial. Gram-positive cocci corresponded to 68.4% and gram-negative bacilli to 31.6%. The main microorganism were *E. faecalis* 24.2%, *S. aureus* 21.8%, *S.* coagulase negative 18.9%, *P. aeruginosa* in 6.3%, *K. pneumoniae* in 6% and *E. coli* in 3.5%. In relation to resistance, *E. faecalis* were 98.2% sensitive to ampicillin, *S. aureus* were 55.5% sensitive to cefoxitin and 100% to vancomycin, *S.* coagulase negative were 41% sensitive to oxacillin and 100% vancomycin, *P. aeruginosa* were 73% sensitive to imipenem and 66% sensitive to meropenem, *K. pneumoniae* was 87% ESBL, 100% sensitive to imipenem and 73% to meropenem and *E. coli* was 63% ESBL and 100% sensitive to carbapenems.

Conclusion. Osteomyelitis of the diabetic foot was characterized as being mainly monomicrobial, by *E. faecalis, Staphylococcus*, *P. aeruginosa*, and *K. pneumoniae*, with a high prevalence of resistance to methicillin, ESBL and to a lesser extent resistance to carbapenems.

MICROORGANISM	N	%
Staphylococcus aureus	62	21,8
Staphylococcus coagulasa negativos	54	18,9
Enterococcus faecalis	69	24,2
Enterococcus faecium	2	0,7
Enterococcus spp	2	0,7
Streptococcus agalactiae	4	1,4
Kocuria kristinae	2	0,7
Acinetobacter baumannii	7	2,5
Acinetobacter spp	1	0,4
Aeromonas hydrophila	1	0,4
Alcaligenes faecalis	1	0,4
Citrobacter braakii	1	0,4
Citrobacter koseri	1	0,4
Corynebacterium striatum	7	2,5
Corynebacterium matruchotii	2	0,7
Corynebacterium spp	1	0,4
Enterobacter cloacae	5	1,8
Escherichia coli	10	3,5
Hafnia alvei	1	0,4
Klebsiella pneumoniae	17	6,0
Klebsiella oxytoca	4	1,4
Morganella morganii	2	0,7
Proteus mirabilis	7	2,5
Providencia rettgeri	1	0,4
Pseudomonas aeruginosa	18	6,3
Pseudomonas fluorescens	2	0,7
Stenotrophomonas maltophilia	1	0,4
TOTAL	**285**	**100,0**

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1422. Evaluation of Diabetic Foot Infections and Osteomyelitis in a Veteran Population: Targets for Improved Outcomes
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Background. Diabetic foot infections (DFI) complicated with osteomyelitis are a difficult infection to treat often resulting in poor outcomes. DFIs often require amputations, including serial amputations due to inadequate initial intervention and infection progression. This study examines various diagnostic and treatment strategies aimed to improve outcomes.

Methods. This retrospective cohort study included patients greater than or equal to 18 years of age with a DFI as identified via ICD 9 and ICD 10 codes from January 2005 to December 2018. Outcomes were analyzed to measure the impact of baseline characteristics on outcomes. The severity of infection was defined by PEDIS score (perfusion, extent, depth, infection, and sensation). Descriptive statistics were used to report differences.

Results. One hundred and thirty patients were included, 72% with osteomyelitis. The median PEDIS score was 3 (interquartile range 2–3). Magnetic resonance imaging was used to evaluate 38% of the population. Osteomyelitis patients who had an MRI performed were noted to have a higher rate of appropriate treatment and cure (56%) when compared with a similar group of patients who did not receive an MRI (25%) ($P = 0.005$). Comparing prolonged (> 4 weeks) therapy to short therapy, there was a significantly higher proportion of cures noted (62.71% vs. 36.62%, $P < 0.0001$). Failure was associated with less than 4 weeks of therapy (66.7%, $P = 0.03$) and presence of residual inflammation/infection after amputation (58.3%, $P < 0.0001$). Route of antibiotic had no impact on failure rates. However, patients with an initial drug-bug mismatch were more likely to fail. Sixty-six percent of patients with decreased ankle brachial index failed ($P = 0.02$).

Conclusion. Diabetic foot infections have serious consequences. Over a third of patients required further amputation or additional antibiotic therapy. Risk of failure was associated with short durations of therapy, poor perfusion, and residual inflammation after amputation. However, a higher rate of cures was noted with use of an MRI and prolonged therapy in patients. Stewardship initiatives may wish to focus on ensuring prolonged treatment courses and appropriate surgical intervention rather than on route of antibiotic therapy as there was no difference in failure rates.

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1423. Antibiotic Utilization and Outcomes in Patients with Sacral Osteomyelitis and Decubitus Ulcers
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Background. Osteomyelitis is a common complication of advanced stage pressure ulcers and known to be associated with increased mortality, length of stay (LOS), and treatment costs. However, limited data and lack of guidelines regarding appropriate diagnosis and treatment result in variability in management. We sought to investigate whether microbiology data are associated with reduced antibiotic utilization in patients with osteomyelitis secondary to decubitus ulcers.

Methods. This retrospective cohort study included hospitalized patients from 2007 to 2015 with an advanced stage (IV or unstageable) sacral decubitus ulcer and clinical concern for osteomyelitis. The exposure group was those who underwent tissue culture (superficial swab, deep bedside or surgical tissue, or bone biopsy). The primary outcome was antibiotic days of therapy (DOT). Additional secondary outcomes including clinical characteristics at presentation, LOS, readmission rates, and antibiotic-related complications were evaluated using Fisher's exact or Wilcoxon-Mann–Whitney test for continuous variables.

Results. A total of 220 cases of advanced-stage decubitus ulcer with clinical concern for osteomyelitis were identified. Data abstracted from 40 cases show that tissue cultures were obtained in 22 (55%). Bacterial growth was identified from 100% of samples sent for culture. Antibiotic use prior to admission was the most significant predictor of failure to obtain tissue cultures ($P = 0.0002$). MRI was performed in 15% of abstracted cases, with radiographic evidence of osteomyelitis noted in 100%. Bone biopsy was performed in 4 cases; bone pathology was not sent in any of these instances. Median antibiotic DOT was 84 days in both groups.

Conclusion. In cases of sacral osteomyelitis secondary to decubitus ulcers, antibiotic use prior to admission was inversely related to the likelihood of obtaining a tissue culture. When tissue cultures were obtained, they were uniformly positive; however, in our preliminary analysis of 40 cases, this did not appear to influence antibiotic utilization as determined by DOT. Bone biopsy was rarely performed, and when done, was not sent for pathology despite this being recognized as the gold standard in the diagnosis of osteomyelitis.

Table 1: Key findings

	Total cases (n=40)	Exposure group (n=22)	Control group (n=18)	P value
Age (years), median	41	41	40.2	0.90
Male sex	30 (75%)	17 (77%)	13 (72%)	0.73
Antibiotics prior to admission	16 (42%)	3 (14%)	13 (76.5%)	**0.0002**
MRI pelvis performed	6 (15%)	1 (4.5%)	5 (28%)	0.07
MRI with osteomyelitis	6 (15%)	1 (4.5%)	5 (28%)	0.07
ID consultation	32 (80%)	17 (77%)	15 (83%)	0.71
LOS (days), median	10	10	9	0.57
Antibiotic DOT (days), median	84	84	84	0.90

Disclosures. **All authors:** No reported disclosures.