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BACKGROUND

- Podiatrists independently manage diabetic foot ulcers (DFU), including diagnosing and treating diabetic foot infections (DFIs).
- DFU is highly prevalent (up to 8% among diabetics); 40 - 60% of DFUs complicate with DFI.
- The prevalence and appropriateness of antibiotics prescribed for DFU with or without infection has not been previously described in detail.

METHODS

- Retrospective chart review of all consecutive patients > 18 years of age with DFUs, who had at least one visit to the UPMC Mercy Wound Clinic (Pittsburgh, PA) in 2020
- Antibiotics counted when prescribed by a podiatrist at any time or by any provider during a hospitalization for DFU (with or without DFI).
- Severity and appropriateness criteria were adapted from guidelines.

Stratification of Severity of Diabetic Foot Infection

Mild infection OR no infection	PEDIS 0-1 AND No diagnosis of OM AND No hospitalization for infection AND No bacteremia
Moderate infection	PEDIS 2-3 AND No diagnosis of OM
Severe infection	PEDIS 4 OR Diagnosis of OM
Diagnosis of Osteomyelitis (OM)	One or more visits with an OM diagnostic code OR Documentation of osteomyelitis in one or more visits OR Imaging demonstrating OM (plain radiograph, CT scan or MRI) OR Positive bone culture OR Positive histopathology for OM

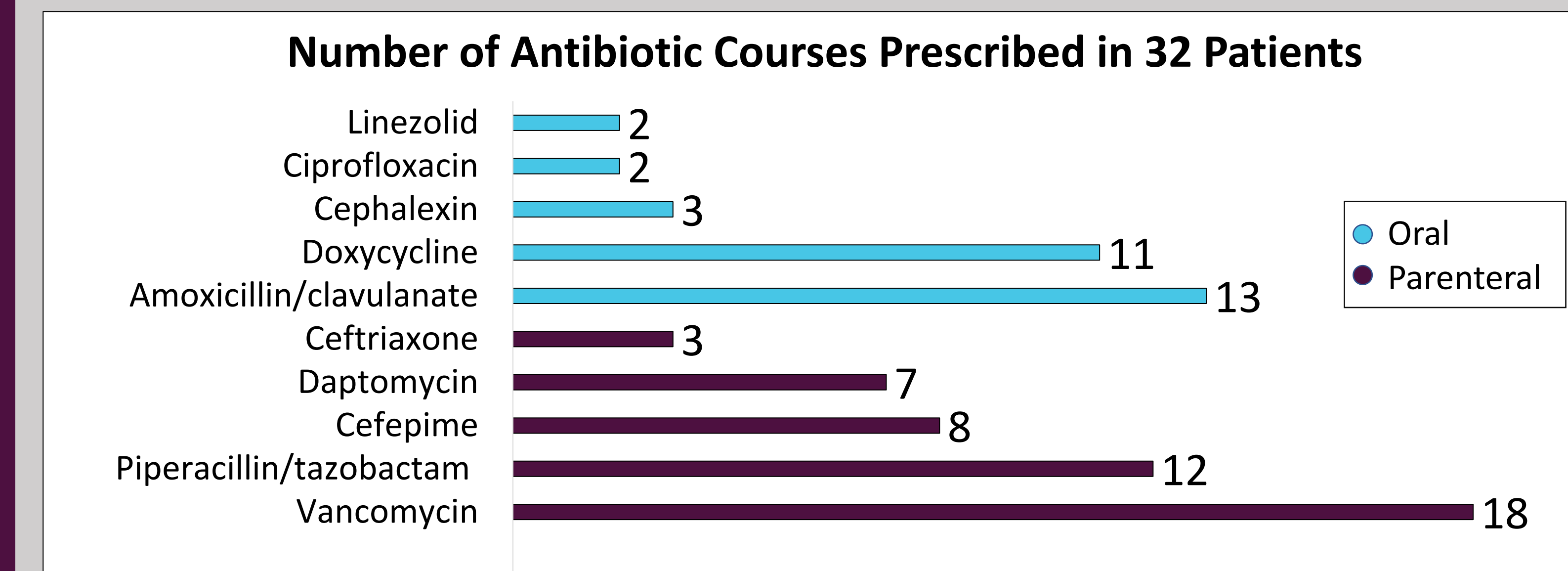
PEDIS, Perfusion, Extent, Depth, Infection and Sensation score; OM, Osteomyelitis

Criteria for Appropriateness of Antibiotic Use in Diabetic Foot Ulcers

Mild infection OR no infection	Courses should not exceed 7 days Treatment should be with oral antibiotics* * Exception: known resistant organism OR allergy precluding oral alternatives
Moderate infection	Courses should not exceed 14 days
Severe infection	Courses should not exceed 42 days If resection is curative, treatment should not exceed 7 days
All levels of severity	If a blood or bone culture is positive, the antibiotics should include coverage for the organisms that have grown (Wound cultures were not considered)

RESULTS

- Of 73 patients seen in podiatry clinic for DFU, 32 (42%) were prescribed antibiotics



Patient and treatment characteristics among patients who were prescribed antibiotics

	Total (N=32)	No to mild (N=5)	Moderate (N=2)	Severe (N=25)	
Age*	59.7 (12.4)	66.4 (16.6)	50.5 (0.7)	59.2 (11.7)	
Sex: male†	25 (86.2%)	3 (75.0%)	2 (100.0%)	20 (87.0%)	
HbA1c*	9.11 (2.6)	8.07 (2.2)	7.50 (N/A)	9.36 (2.67)	
CKD 3-4†	16 (51.6%)	4 (80.0%)	1 (50.0%)	11 (45.8%)	
ESRD†	3 (9.7%)	0	1 (50.0%)	2 (8.3%)	
PEDIS*	2.03 (1.2)	1.00 (0.0)	3.00 (0.0)	2.16 (1.2)	
Osteomyelitis†	24 (75.0%)	0	0	24 (96.0%)	
Any	35.8 (38.2)	12.6 (4.6)	40.5 (3.5)	40.1 (41.8)	
LOT	Oral	17.7 (33.2)	10.4 (6.8)	0	20.6 (37.1)
	IV	19.9 (25.3)	2.4 (3.4)	40.5 (3.5)	21.8 (26.8)
DOT	Any	43.4 (48.0)	14.20 (3.4)	40.50 (3.5)	49.48 (52.5)
	Oral	20.0 (41.0)	10.4 (6.8)	0	23.5 (45.8)
	IV	23.4 (29.0)	3.8 (6.1)	40.5 (3.5)	26.0 (31.2)
ID consult	23 (76.7%)	1 (20.0%)	2 (100.0%)	20 (83.3%)	
Inappropriate treatment	19 (59.4%)	5 (100.0%)	2 (100.0%)	12 (48.0%)	

*Mean (SD); †Number (Percent of total)

DOT, Days of Therapy; LOT, Length of Therapy; CKD, chronic kidney disease; ESRD, End-stage renal disease; PEDIS, Perfusion, Extent, Depth, Infection and Sensation score; IV, intravenous; ID, Infectious Diseases

- 2/2 patients with moderate infection had "inappropriate" courses; however, both had complicated *Staphylococcus aureus* bacteremia.
- All 12 inappropriate courses in severe infections were due to courses > 42 days.

KEY FINDING

- All patients with mild diabetic foot infection received inappropriate treatment, with a mean length of treatment of 12.6 ± 4.6 days.

DISCUSSION

- IWGDF criteria for severity of DFU are difficult to apply retrospectively, as documentation is often lacking. Therefore, we developed our own criteria. We could not distinguish mild from no infection.
- The recommended duration of antibiotics for DFI per international guidelines is 7-14 days and possibly <7 for mild, based on expert opinion. Six RCTs in non-diabetic skin and soft tissue infection have shown that durations of 5 days were equivalent to 10.
- Therefore, our LOT of 12.6 ± 4.6 days in mild infection is likely excessive.

CONCLUSIONS

- Our findings suggest a potential target for antimicrobial stewardship in the podiatry clinic: unnecessarily long courses in patients with mild diabetic foot infection.
- RCTs to inform the duration of treatment in mild diabetic foot infection are needed.

REFERENCES

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