

Background

- Dentists are the third highest prescribers of antibiotics in outpatient settings in the US with reported suboptimal prescribing rates between 30 and 85%.
- The 2019 American Dental Association guidelines provide guidance for antibiotic use based on the presence of dental pain and/or swelling and whether definitive conservative dental treatment (DCDT) is immediately available.

Objectives

Primary Objective: to assess the appropriateness of systemic antibiotic use in our institution's dental clinics

Secondary Objectives: to describe antibiotic choice, duration of therapy, and use of non-first line antibiotics

Methods

Setting: The MetroHealth System (MHS) in Cleveland, Ohio

- Three dental clinics in Greater Cleveland area

Design: Quality improvement project

- Retrospective cohort

Time frame: January 1st, 2021 – December 31st, 2021

Patients

Inclusion Criteria: Age 18 years or older and was prescribed at least one antibiotic from dental visits

- Randomly selected 120 patients (10 patients per month)

Exclusion Criteria: Immunocompromised patients

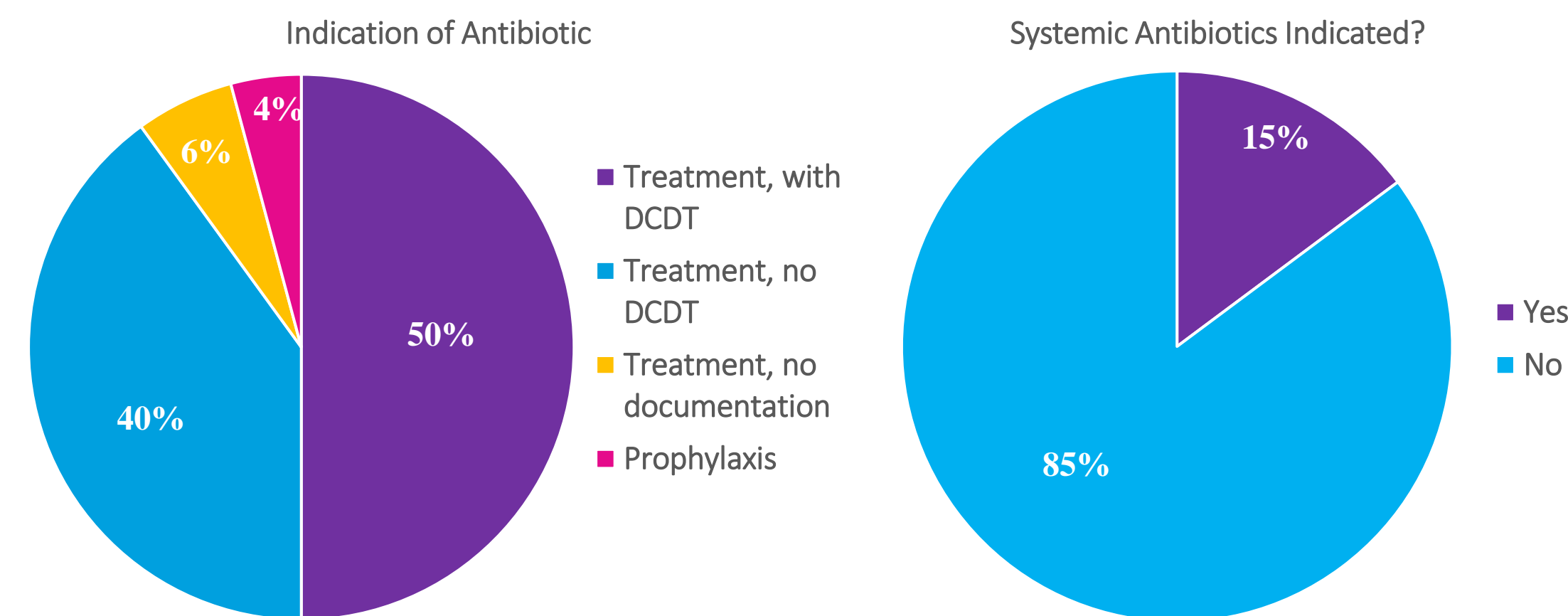
Results

- In 2021, a total of 14,831 patients were seen in MHS dental clinics. At least one anti-infective agent was prescribed in 2,413 patients (16.3 %)
- Patients (n=120)
 - Mean age (range): 49 (20-87)
 - Sex (female): 65

Results (Continued)

Primary outcomes

- Indication of antibiotic**



Secondary outcomes

- Antibiotic choices**

Antibiotic	n (%)
Amoxicillin	95 (78.5)
Clindamycin	11 (9.1)
Amoxicillin/clavulanic acid	8 (6.6)
Penicillin	3 (2.5)
Azithromycin	2 (1.7)
Metronidazole	1 (0.8)
Ciprofloxacin	1 (0.8)

* One patient was on two antibiotics

- Duration of therapy**

- Mean duration of therapy (range): 7.3 (5-10)
- 13/115 patients had a duration of therapy > 7 days

- 30-day patient outcomes**

	n (%)
Any ADR ^a reported	4 (3.3)
Additional antibiotic course	10 (8.3)
Additional dental clinic visit	15 (12.5)
For follow up dental procedure	14 (11.7)
Emergency department visit	2 (1.7)
Hospital admission	1 (0.8)

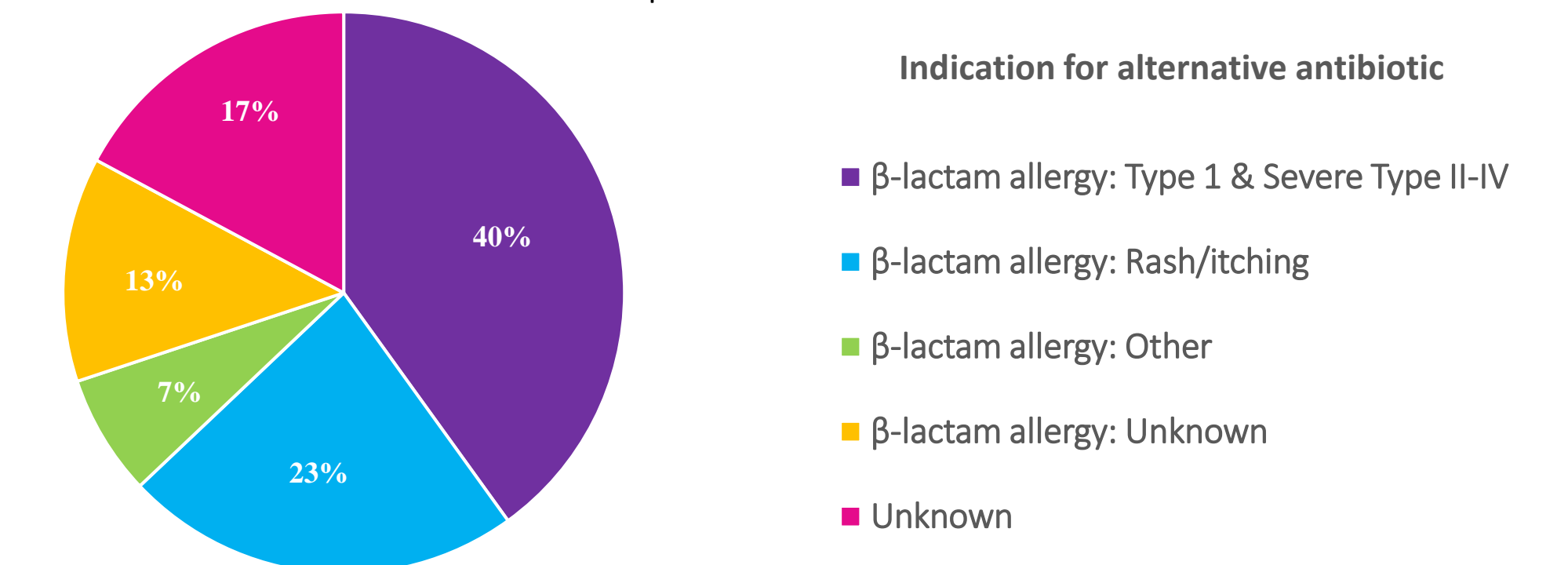
^aADR: adverse drug reaction

Results (Continued)

- Use of non-first line antibiotics**
- Of 2,788 antibiotic prescriptions, 402 of them were non-first line antibiotics (14.4%)

Antibiotic	n (%)
Clindamycin	347 (86.3)
Azithromycin	24 (6.0)
Metronidazole	21 (5.2)
Doxycycline	3 (0.7)
Trimethoprim/ Sulfamethoxazole	3 (0.7)
Ciprofloxacin	2 (0.5)
Minocycline	1 (0.2)
Cephalexin	1 (0.2)

- Based on documented allergy reactions, 36% of patients (120/333) could have received either amoxicillin or cephalexin



Conclusions

- The majority of antibiotics from our dental clinics were for treatment and commonly not indicated.
- Duration of therapy was inconsistent and longer than recommended
- 17.2% of non-first line antibiotics were prescribed in patients without documented beta- lactam allergy.

Future Directions

- Development of a dot phrase/ smart text to improve documentation
- Implementation of clinical pathway
- Emphasize avoiding alternative antibiotic use without documented beta-lactam allergy and clarifying allergy

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