Patients with *Clostridioides difficile* Infection Following Dental Antibiotic Prescriptions

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Background

- Dentists prescribe few broad-spectrum antibiotics but are the primary prescriber of clindamycin in the U.S.
- Data is scarce on the association of dental antibiotic prescribing and *Clostridioides difficile* infection (CDI).
- Here we present results from a longitudinal cohort of patients with a CDI positive diagnostic test within 30 days after receiving an antibiotic prescribed by a dentist.
- The ADA / AHA guidelines state that dental patients should receive prophylactic antibiotic only when there is a preexisting cardiac condition, and the patient is undergoing a procedure involving gingival manipulation or mucosal incision.

Methods

- A cohort of patients with antibiotic prescriptions within 7 days of a dental visit were identified from 2015-2018 through the VA Corporate Data Warehouse.
- From this cohort, patients with positive *C. difficile* test 30 days after a dental antibiotic were included.
- Chart reviews obtained information about the dental visit, antibiotic prescribed, and CDI diagnosis.
- Descriptive statistics were used to describe characteristics of those with CDI following a dental antibiotic.

Results

- 212,763 Veterans received an antibiotic from a dentist between 2015-2018.
- Of them, 87 (0.0004%) patients had a positive CDI test within 30 days of receiving an antibiotic prescribed by a dentist.
- Over half (57%) of these patients had surgical dental visits
- 46% had an oral infection documented
- 34% of the patients that received clindamycin from the dentist had a documented penicillin allergy.
- The average number of days between the dental visit and CDI diagnosis was 18.9.

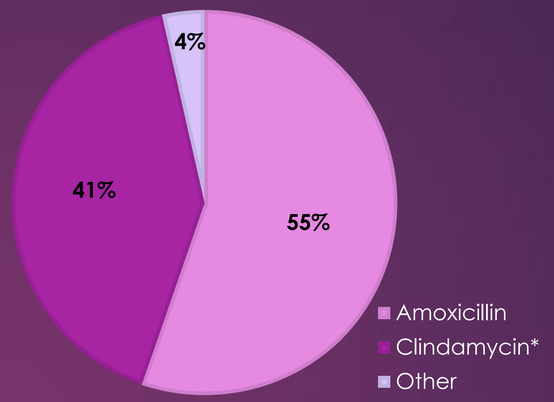
Discussion

- CDI was a rare occurrence following dental antibiotics; 59% had a preexisting gastrointestinal condition.
- Most patients prescribed antibiotics did not meet ADA/AHA guidelines for antibiotic prophylaxis prior to dental visits.
- Clindamycin was more frequently prescribed in this cohort than published literature on antibiotic prescribing by dentists (7-11%).
- More research should be done to determine the patient profile most at risk for CDI following a dental antibiotic prescription.

Table 1: Demographics of Patients with CDI after an Antibiotic Prescribed by a Dental Antibiotic (N=87)

Variable Name	N (%)
Age (mean, SD)	59.9(13.9)
Male	75 (86)
Number of Tooth Extractions	
0	52 (60)
1	14 (16)
2	7 (8)
3	3 (3)
4+	10 (13)
Number of Dental Implants	
0	78 (89)
1	1 (1)
2	4 (5)
3+	4 (5)
GI Conditions	
None	36 (41)
GERD	31 (36)
Diverticulitis	8 (9)
Other	12 (14)

Figure 1: Distribution of Antibiotics Prescribed by VA Dentists.



*65.7% of the patients that received clindamycin from had a documented penicillin allergy.

Figure 2: Antibiotic prescribed for CDI Treatment

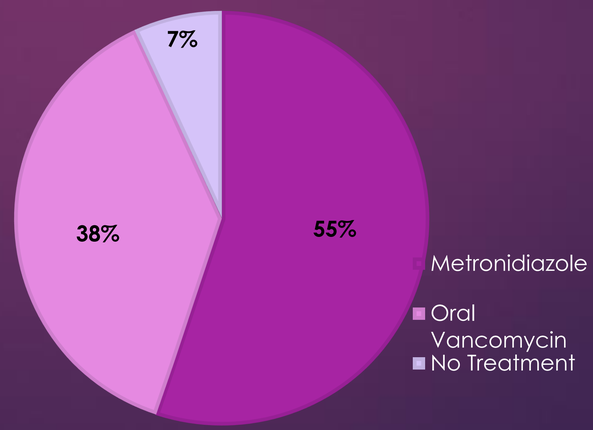


Figure 3. Reason for Antibiotic Prescription.

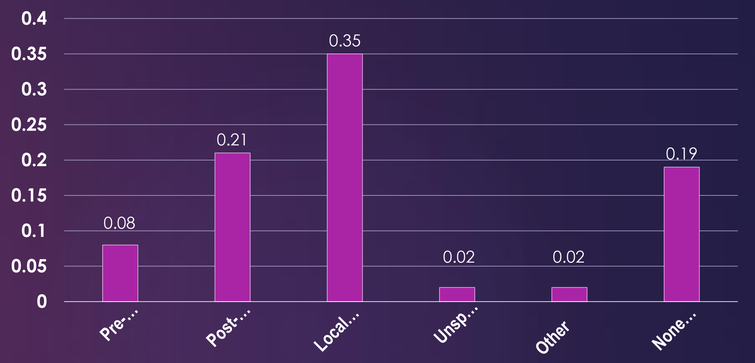


Table 2: Percentage of Antibiotics Prescribed Outside of ADA/AHA Guidelines

Appropriateness of Antibiotics Prescribed for Infection Prophylaxis (N=47). According to the ADA, antibiotics are indicated if the patient has a cardiac condition and undergo a procedure involving gingival manipulation or mucosal incision. Patients with oral infections were excluded from this table.

	Cardiac Condition Present (N=12)	Cardiac Condition Absent (N=35)
Gingival Manipulation Present (N=43)	11 (23.4%)	32 (68.1%)
Gingival Manipulation Absent (N=4)	1 (2.1%)	3 (6.4%)

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