

C.difficile PCR+/ Toxin EIA- treat or not treat? A clinician survey

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Introduction

- *C.diff* PCR cannot differentiate between colonization and infection, thus leading to a higher false-positive diagnosis of CDI.
- In patients with *C.diff* PCR positive(+) and Toxin EIA negative(-), clinical judgment is often used regarding the decision to treat or not to treat.
- Cell culture cytotoxic assay (CCA), a more expensive and time-consuming test, is the gold standard for CDI testing.
- Aim of the study is to understand whether clinical judgment correlates with CCA results in patients with *C.diff* PCR+/EIA- results.

Methods

- Between 6/2019 and 7/2019, 83 patients who were admitted to the hospital met our inclusion criteria (*C.diff* PCR+/EIA-).
- Clinicians who cared for these patients were contacted and surveyed with a predesigned questionnaire evaluating the rationale for CDI treatment and interpretation of test results.
- Simultaneous medical records review was done to ensure consistency.
- *C.diff* PCR+/EIA- stool samples were sent to ARUP laboratories for CCA.
- The CCA results were not available for clinicians and did not impact clinical care.
- Data analysis and interpretation were done using the Chi-square test.

Results

- Total of 55 clinicians were surveyed.
- Among the 83 patients, 41(49%) were CCA (+) and 42(51%) were CCA (-).
- 48 of 83 (58%) patients received treatment for CDI.
- 25 of 48 (52%) patients who were treated were CCA positive
- 23 of 48 (48%) patients were CCA negative.
- Among the untreated patients, 16/35 (46%) were CCA+ while 19/35(54%) were CCA-.
- There was no statistically significant correlation between clinical judgment and CCA assay results (p: 0.56 on the Chi test).

Table 1. Demographics of the clinicians

Variables		Total participants (n=55)
Gender	Male	29 (52%)
	Female	26 (48%)
Age (years)	<35	35 (63%)
	35-45	7 (12%)
	45-55	9 (16%)
	55>	4 (7%)
Specialty	Internal Medicine	44 (80%)
	Surgery	5 (9%)
	Intensive care	3 (6%)
	Neurology	2 (2%)
	PMR	1 (2%)
Provider Ethnicity	African American	6 (11%)
	Asian	18 (32%)
	Caucasian	23 (42%)
	Hispanic	7 (12%)
	Other	1 (2%)
Title	Resident/Fellow	27 (49%)
	Physician Assistant/Nurse practitioner	9 (16%)
	Attending	19 (35%)

Table 2. CDI Treatment and CCA breakdown

	CCA+	CCA-	Total	p value (Chi test)
Got CDI treatment	25	23	48	0.56
Did not get CDI treatment	16	19	35	
Total	41	42		

Conclusions

Clinicians regardless of their background and training face challenges with the treatment of *C.diff* PCR+/EIA- patients. CCA assay in these cases can help further guide in the appropriate de-escalation of care as well as avoidance of missed treatment opportunities. Further prospective studies are needed to see on how such a strategy can impact patient outcomes