antibiotics during the first admission, and the duration of first hospitalization were not associated with significant differences in duration of carriage. **Conclusion:** This study is the largest cohort of C. difficile carriers with longitudinal follow up of their colonization status. It highlights the extended duration of carrier status especially in older patients and identifies predictors of prolonged carriage. Further studies are needed to understand the underlying relationship with the predictors identified in this study.

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**Clinical Characteristics and Cycle Thresholds Among Discordant and True Positive Test Results for Clostridiodes difficile**

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**Background:** The diagnosis of Clostridioides difficile infection (CDI) is challenging. Despite guideline-directed, multistep testing algorithms and diagnostic stewardship, the treatment of C. difficile colonization persists. The testing algorithm at our system utilizes an initial real-time PCR test (PCR) for Toxin B gene, which if positive, reflexes to an enzyme immunoassay (EIA) for detecting Toxins A and B. Discordant results (PCR +/EIA -) are suggestive of colonization, but the majority of patients with discordant results are treated for CDI. Correlation of C. difficile EIA B polymerase chain reaction (PCR) cycle thresholds (Ct) with the presence of free EIA and disease severity has been observed, but the ability to use Ct in the decision to treat patients with discordant results is unclear. Our study assesses if Ct values and other clinical characteristics favor treatment in select patients with discordant **Methods:** A retrospective chart review was performed of adult patients (≥ 18-year-old) with positive C. difficile PCR results that were admitted to our health system between June 01 and August 31, 2023. C. difficile PCR and Ct results were obtained by Cepheid GeneXpert and Toxin A and B EIA results were obtained by Meridian Bioscience Immunocard. Patients with discordant (PCR+/EIA) and true positive (PCR+/EIA+) results were compared. We assessed demographics, past medical history, clinical characteristics, severity of illness, PCR Ct values, treatment, and clinical outcomes including: 30-day all-cause mortality and re-admission, and 60-day CDI repeat testing and treatment. Results Of the 122 patients identified, 89 patients had discordant results and 43 had true positive **Results:** Severity of illness and other clinical and laboratory characteristics were similar between both groups. Mean Ct values were significantly lower for true positive results compared to discordant results, 24.28 vs 29.27, respectively (p26 (p=.08). Of the patients with discordant results, 73 completed treatment for CDI and no difference in clinical outcomes was observed compared to patients with discordant results that were not treated. Conclusion Ct values were lower among patients with true positive results compared to patients with discordant **Conclusion:** There were no statistically significant different rates of severe or fulminant CDI among patients with discordant results and Ct values < 26, although this finding may be limited by sample size and Ct may be helpful in deciding which discordant patients to treat.

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**Table 1. Demographic and clinical characteristics of study population**

| | PCR+/EIA- (n=89) | PCR+/EIA+ (n=43) | |
|---|---|---|---|
| Age (mean) | 65.2 | 70.5 | |
| Male gender | 44 (49.4) | 23 (51.0) | |
| Laxative use within 48 hours of testing | 12(13.5) | 6 (14.0) | |
| Antibiotics within 14 days of testing* | 51 (57.3) | 39 (90.7) | p<.05 |
| PPI use within 14 days of testing* | 36 (40.4) | 28 (65.1) | p<.05 |
| History of PCR+ test | 23 (25.8) | 14 (32.6) | |
| History of colon surgery | 3 (3.4) | 0 (0) | |
| Alcohol use disorder | 22 (24.7) | 5 (11.6) | |
| End stage renal disease | 6 (6.7) | 3 (7.0) | |
| Cirrhosis | 11 (12.4) | 3 (7.0) | |
| Inflammatory bowel disease | 7 (7.9) | 4 (9.3) | |
| Immunosuppression | 12 (13.5) | 3 (7.0) | |
| Cycle threshold (mean)* | 29.27 | 24.28 | p<.05 |

| Characteristics | PCR+/EIA- (n=89) | PCR+/EIA+ (n=43) |
|---|---|---|
| ≥3 Bowel movements (BM) in 24hrs | 52 (58.4) | 29 (67.4) |
| <3 BM in 24hrs | 21 (23.6) | 9 (20.9) |
| Unable to confirm BM frequency | 16 (18.0) | 5 (11.6) |
| Fever | 12 (13.5) | 10 (23.3) |
| Hypotension | 17 (19.1) | 10 (23.3) |
| CT abdomen obtained | 65 (73.0) | 25 (58.1) |
| CT consistent with CDI | 21 (23.6) | 13 (30.2) |
| Vasopressor requirement | 6 (6.7) | 3 (7.0) |
| Stool panel obtained | 42 (47.2) | 16 (37.2) |
| Stool panel positive | 8 | 1 |
| White blood cell count (mean) | 11.86 | 13.98 |
| Albumin (mean) | 3.30 | 2.99 |
| Serum creatinine (mean) | 1.37 | 1.43 |

**Table 2. Severity of illness by Ct values among discordant patients**

| PCR+/EIA- | Ct ≤ 26 (n=27) | Ct > 26 (n=61) |
|---|---|---|
| Non severe CDI | 12 (44.4) | 39 (63.9) |
| Severe CDI[a] | 8 (29.6) | 12 (19.7) |
| Fulminant CDI[b] | 7 (25.9) | 10 (16.4) |
| Severe or fulminant CDI | 15 (55.6) | 22 (36.1) |

a) Severe: WBC >15, AKI >1.5 baseline or >.3 difference (excluding ESRD)
b) Fulminant: Severe as above with hypotension or shock, ileus, or megacolon.

**Table 3. Outcomes**

| Outcomes & treatment | PCR+/EIA- (n=89) | PCR+/EIA+ (n=43) |
|---|---|---|
| Completed treatment for CDI | 65 (73.0) | 41 (95.3)[a] |
| 30-day mortality | 9 (10.1) | 3 (7.0) |
| 60-day readmission | 28 (31.5) | 14 (32.6) |
| Treatment within 60 days | 12 (13.5) | 6 (14.0) |

a) Both patients not initially treated were later treated within 60 days

| | Treated PCR+/EIA- (n=65) | Untreated PCR+/EIA- (n=24) |
|---|---|---|
| Average Ct | 29.13 | 29.63 |
| 30-day mortality | 9 (13.8) | 0 (0) |
| 60-day readmission | 19 (29.2) | 7 (29.2) |
| Tested PCR+/EIA + within 60 days | 1 (1.5) | 1 (4.2) |
| Treatment within 60 days | 9 (13.8) | 3 (12.5) |