Presentation Type:
Poster Presentation - Poster Presentation
Subject Category: C. difficile
Clinician Interpretation and Management of Discordant PCR+/Toxin- Clostridioides difficile Testing Results Post-COVID
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Background: Our institution utilizes a two-step algorithm consisting of an initial polymerase chain reaction (PCR) test with positive results reflexed to an enzyme immunoassay (EIA) for toxin. Institutional guidelines implemented during the COVID-19 pandemic recommended applying clinical judgment to patients with PCR+/Toxin- (discordant) results when determining if treatment is indicated. Pre-pandemic, we found that clinicians continued CDI-directed therapy in 56% of patients following the Toxin- result. Our study aims to identify how clinicians interpret PCR+/Toxin- results and reasons for management decisions post-pandemic. **Methods:** At an academic medical center, we conducted a retrospective cohort study of the first 50 inpatient charts with PCR+/Toxin- results from August to October 2022. Data was abstracted from clinical, pharmacy, and microbiology databases. The primary outcome was the proportion of patients continued on CDI-directed therapy for ≥24 hours after the Toxin- result became available. Secondary outcomes included the proportion of patients prescribed a full treatment course for CDI and the reasons for continuing treatment. **Results:** There were 37 patients (74%) who started CDI-directed treatment after initial PCR+ **Results:** Of these patients, 59% (22/37) were continued on treatment for ≥24 hours after the Toxin- result (primary outcome). 77% (17/22) of these patients who met the primary outcome completed full treatment courses. Three patients were transitioned to prophylaxis dosing after the Toxin- result. The most common reason for continuing treatment after discordant results was high clinical suspicion for CDI (Figure). There were no CDI-related complications in this 50-patient cohort. In immunocompromised patients, 70% (16/23) started treatment after initial PCR+ results and 81% (13/16) met the primary outcome. In patients admitted specifically to immunocompromised inpatient services, 90% (9/10) started treatment after initial PCR+ results and 100% (9/9) met the primary outcome. **Conclusion:** The majority of patients started on treatment after the PCR+ result were continued on treatment following the Toxin- result, though several of these patients did not complete full treatment courses. Treatment rates were similar to our pre-pandemic baseline. When patients were continued on treatment after discordant results, clinicians cited appropriate high clinical suspicion. Notably, every patient admitted to an immunocompromised service was continued on treatment after Toxin- **Results:** Overall, clinicians are following institutional guidelines by applying clinical judgement when interpreting discordant **Results:** Further research will help identify what variables affect clinician interpretation and management practices for discordant results, which will help shape institutional guideline updates, clinician education, and additional stewardship interventions.

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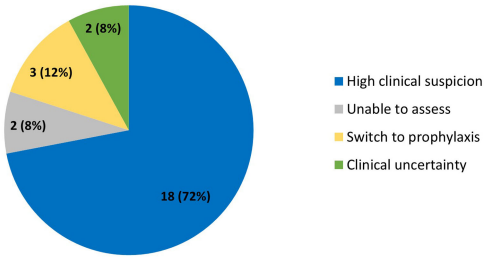
Figure. Reasons for Continuing *C. difficile* Treatment after PCR+/Toxin- Result (N = 25)



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Poster Presentation - Poster Presentation
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Hospital-Onset Clostridioides difficile infection in chronic kidney disease patients
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Introduction: Hospital-onset Clostridioides difficile infection (HO-CDI), reported as laboratory-identified (LabID) event, is common in patients with chronic kidney disease (CKD), especially those with end-stage renal disease (ESRD), and is associated with prolonged length of hospitalization and more severe disease. CKD patients are at increased of developing CDI due to frequent antimicrobial and healthcare exposures. The objective of this study was to assess recent trends of HO-CDI in patients on a nephrology unit at our academic, tertiary care institution. **Methods:** Retrospective cross-sectional study of patients with HO-CDI who were hospitalized on a nephrology unit between January 2021 to December 2023. Collected variables included: demographic data, characterization of HO-CDI risk factors, infection and diagnosis (including prior history of CDI, toxin versus nucleic acid amplification test [NAAT] positivity, number of loose stools), CDI rate (defined as CDI count/patient days x1000), standardized antimicrobial administration ratio (SAAR) for high-risk for CDI antimicrobials (defined by the National Healthcare Safety Network), and infection prevention and control (IPC) practices, including hand hygiene audit rates. **Results:** A total of 30 HO-CDI infections were reported on the nephrology unit [Table], with 8 occurring in 2021, 5 in 2022, and 17 in 2023. The median age of patients was 70.8 (range: 37-96) years, and most patients (57%) were female. The majority of patients were admitted from home (73%), and two patients (7%) had a history of CDI in the last 6 months. Among the CDI cases, 60% were NAAT positive and toxin negative, and only 50% had >3 bowel movements (BM) within 24 hours prior to the positive test. Ten percent received promotility agents prior to testing. Most cases (77%) occurred when other CDI patients were on the unit. Hand hygiene compliance rates averaged 81% over the three-year period [Figure 1A]. Eight-four per cent of patients received antibiotics within 30 days of CDI diagnosis; SAAR was >1 for quarters 2 and 4 in 2022, and quarter 1 in 2023 [Figure 1B]. **Conclusion:** On our nephrology unit, patients often had < 3 BM within 24 hours of CDI diagnosis, and 60% of cases were toxin-negative, NAAT-positive, suggesting possible C. difficile colonization, rather than true infection. In addition, an elevated SAAR

Table 1. Demographic and CDI-related data among patients hospitalized on nephrology unit from 2021-2023

CDI-Related Data	2021	2022	2023	Total
Total number of HO-CDI	8	5	17	30
Median age, years	76.9 (range: 41-84)	73.2 (range: 69-88)	68.1 (range: 37-96)	70.8 (range: 37-96)
Gender (female)	5 (63%)	3 (60%)	9 (53%)	17 (57%)
Admitted from				
- Home	6 (75%)	3 (60%)	13 (76%)	22 (73%)
- Skilled nursing facility	1 (12.5%)	1 (20%)	1 (6%)	3 (10%)
- Outside hospital	1 (12.5%)	1 (20%)	3 (17.6%)	5 (17%)
History of CDI in the last 6 months	1 (12.5%)	1 (20%)	0	2 (7%)
C. difficile test result^				
- Toxin-positive	6 (75%)	1 (20%)	4 (24%)	11 (37%)
- Toxin-negative, NAAT-positive	2 (25%)	4 (80%)	12 (76%)	18 (60%)
Cases with >3 BM within 24 hours prior to positive test	7 (88%)	3 (60%)	5 (35%)	15 (50%)
Infection Prevention and Control practices				
- Rooms that had a prior CDI case	0	1 (20%)	3 (18%)	4 (13%)
- Cases where another CDI patient was on the unit	7 (87.5%)	4 (80%)	12 (71%)	23 (77%)
- Cases with delay in isolation and testing	0	0	1 (6%)	1 (3%)
Cases with antibiotics received within < 30 days of CDI	7 (88%)	4 (80%)	14 (82%)	25 (84%)
Hard-stop override by IPC Medical Director*	0	1 (20%)	2 (6%)	3 (10%)
Cases that died	0	0	0	0

[HO-CDI = Hospital-onset *Clostridioides difficile* infection, NAAT=nucleic acid amplification test]
^At our institution, CDI diagnosis is established via stepwise algorithm of stool testing initially by GDH and toxins A and B by EIA, then reflexed to NAAT testing for toxin B gene in cases of discordant results.
*Hardstop override: defined as a case reviewed by Infection Prevention and Control Medical Director prior to CDI testing due to patient having had inpatient exposure to promotility agents.