A retrospective review of metronidazole and vancomycin in the management of Clostridium difficile infection in high risk patients with hematologic malignancies

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Abstract

Objective: To examine the incidence of Clostridium difficile infection (CDI) and outcomes of treatment with metronidazole or vancomycin in high risk patients with hematologic malignancies. The goal is to develop an evidence-based protocol for management of CDI in oncology and hematopoietic stem cell transplant (HCT) patients.

Methods: Data collected included a retrospective review of all patients with leukemia, lymphoma, multiple myeloma, and those undergoing stem cell transplantation. CDI was defined as a positive or culture result on a C. difficile toxin assay performed in the emergency department, inpatient or outpatient setting. CDI was confirmed by a positive stool culture result in those with negative toxin results.

Results: 77 patients were identified in this retrospective chart review. CDI was noted in 69 patients (89.6%) with a total of 77 episodes. Of these, 36 patients were treated with vancomycin, and 11 patients were treated with metronidazole. The overall incidence of CDI was 77 (7.8%), with an incidence rate of 6.5 episodes per 100 patient days.

Conclusion: Development of the oncology/HCT protocol continues to be a concern. Initial therapy with metronidazole may result in treatment failures and recurrences in this high-risk patient population. Strengthening data is necessary to assess the optimal method of managing these patients and to determine which therapy achieves the most favorable outcomes.

Introduction

- Clostridium difficile is the most commonly recognized cause of infectious diarrhea in healthcare settings and accounts for 25-50% of cases of antibiotic-associated diarrhea.
- Major risk factors include prior/current exposure to antibiotics, advanced age (≥65 years), hospitalization, severe underlying illness, genetic or metabolic predisposition, use of medical equipment, manipulation of the gastrointestinal tract, alcohol consumption, and diabetes.

- Treatment of CDI is the cornerstone of HCT protocols and is critical to ensure patient outcomes.
- Prevention is key in minimizing the risk of acquiring CDI and reducing the incidence rate among oncology and transplant patients.
- CDI occurs frequently and is often severe, contributing to morbidity and mortality and complex care for oncology patients.

- Primary treatment failures in patients with CDI and second-line treatment resulted in a 53% mortality rate.
- There are limited data on the optimal method of managing these patients, and the most effective therapy remains uncertain.

Objectives

- To assess the incidence and severity of CDI in patients with hematologic malignancies based on positive PCR test results for Clostridium difficile toxins.
- To assess the outcomes of CDI treatment with metronidazole or vancomycin.

Primary Endpoints:
- Assess the incidence and severity of CDI in patients with hematologic malignancies based on positive PCR test result for Clostridium difficile toxins.
- Assess the outcomes of CDI treatment with metronidazole or vancomycin.

Secondary Endpoints:
- Determine the rate of concurrent vancomycin and metronidazole use in patients with CDI.
- Identify incidence of mucositis and drug-related toxicity with CDI.
- Evaluate the use of alternative agents for CDI treatment.
- Evaluate the effectiveness of alternative strategies.
- Determine 6-month survival of patients who developed CDI.

Methods

- Upon IRB approval, a retrospective review of 388 patients with diagnosis of CDI from January 2008 – January 2012 was conducted.
- Adults with primary diagnosis of leukemia, lymphoma, multiple myeloma, and those undergoing stem cell transplantation were included in the patients analyzed.
- Exclusion criteria included patients who did not develop CDI during the study period.
- A total of 326 patients were included, with a total of 342 CDI events.

Conclusions:

- The overall incidence of CDI was 77 (7.8%), with an incidence rate of 6.5 episodes per 100 patient days.
- 77 patients were identified, with 69 patients (89.6%) with a total of 77 episodes. Of these, 36 patients were treated with vancomycin, and 11 patients were treated with metronidazole.
- The overall incidence of CDI was 77 (7.8%), with a total of 77 episodes. Of these, 36 patients were treated with vancomycin, and 11 patients were treated with metronidazole.
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Discussion

- Of the 388 patients screened retrospectively from January 2008 – January 2012, 77 developed CDI (19.6%) with an incidence rate of 0.3% in non-CPT and 0.3% in SCT recipients.
- Use of broad-spectrum antibiotics was common during the study period and contributed to the high incidence of CDI.
- Seventy percent of patients received metronidazole as initial therapy which resulted in a 53% overall recurrence rate.
- Primary treatment failures in patients with CDI and second-line treatment resulted in a 53% mortality rate.
- A total of 77 patients developed CDI, with an overall mortality rate of 7.8% and was found to be similar in non-CPT and SCT recipients (7.8% and 8.6%, respectively).

Conclusion

Development of CDI in the oncology/HCT population continues to be a concern. Initial therapy with metronidazole may result in treatment failures and recurrences in this high-risk patient population. Strengthening data is necessary to assess the optimal method of managing these patients and to determine which therapy achieves the most favorable outcomes.

References


Disclosures

Authors of this presentation do not have anything to disclose. No financial or personal relationships with commercial entities that may bias their objectivity in relation to the subject matter of this presentation.