

Characterizing Antibiotic Use in Patients with Hematologic and Oncologic Malignancies Transitioned to Comfort Measures Only (CMO) During Hospital Admission

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INTRODUCTION

Antibiotics are commonly prescribed at the end of life, particularly in patients with advanced cancer diagnoses. There is limited evidence on whether antimicrobial use at the end of life provides symptom relief or contributes to discomfort. We sought to investigate antimicrobial use at the transition to comfort measures only (CMO) in patients with active malignancies.

OBJECTIVES

- To determine the frequency of antibiotic use during the hospital admission when patients were transitioned to CMO.
- To investigate the cumulative exposure to antibiotics and potential downstream effects.

METHODS

- We conducted a retrospective cohort study of patients ≥18 years old with active malignancies admitted to Beth Israel Deaconess Medical Center from 3/1/2018 to 3/1/2021 who were transitioned to CMO during their hospital admission.
- We examined the receipt of antimicrobials at any point in the admission, indication for antimicrobials, timing of CMO order, underlying hematologic/oncologic diagnosis, and concomitant COVID-19 diagnosis through chart review of hospital databases.
- We identified patients on antibiotics 48 hours prior to and after CMO order placement.
- Patients were excluded if CMO orders were reversed.

RESULTS

- 3230 patients with hematologic/oncologic malignancies were admitted between 3/1/2018 and 3/1/2021.
- Of these patients, 397 were transitioned to CMO during their hospital admission with 384 patients included in our analyses.
- 31.8% of patients carried a hematologic malignancy diagnosis
- 88% of patients who were transitioned to CMO received antimicrobials at any point during their hospitalization.
- The most common indications for antimicrobials were pneumonia (22.2%), intra-abdominal infections (13.6%), undifferentiated sepsis (13.3%), and prophylaxis alone (3.5%).
- Most (39.8%) received antimicrobials for more than one infection or indication.
- C. difficile infections were identified in 11 (2.9%) patients.

Table 1

	Patients transitioned to CMO N = 384
Mean age (years)	66.8
Male	190 (49.5%)
Female	194 (50.5%)
Length of hospital stay (days) Mean (Median)	16.9 (13)
# ICU days Mean (Median)	2.2 (0)
Expired in hospital	226 (58.9%)
Discharged to inpatient hospice	102 (26.7%)
Discharged with home hospice	56 (14.6%)

Table 2

	Patients transitioned to CMO who received antibiotics at any point during their hospitalization N = 339
Received antibiotics in 48 hours prior to CMO transition	285 (84%)
Received antibiotics after CMO transition	51 (15.3%)
Total # antibiotics received during admission Mean (Median)	5.7 (5.0)
Length of hospital stay (days) Mean (Median)	18.1 (13.0)
# ICU days Mean (Median)	2.4 (0)

DISCUSSION

The majority of patients transitioned to CMO receive antimicrobials during their last hospital admission, and a significant subset (15.3%) continue antimicrobials after placement on CMO. There was also a significant proportion of patients who received prophylaxis in this setting (28%) in addition to other antimicrobials for treatment, which is an area of interest for future exploration.

As with many studies in this area, symptom assessment (i.e., discomfort in setting of antibiotic therapy) and confirmation of infectious diagnoses can be difficult and warrant additional investigations.

CONCLUSIONS

Hospitalized patients with active malignancy at the end of life are heavily exposed to antimicrobials.

Further studies are needed to investigate the potential benefits and harms of continuing antimicrobials in CMO patients, as decisions are complex and individualized.

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