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Alyssa Donadio
Miami Cancer Institute, alyssad@baptisthealth.net

Moe Shwin
Miami Cancer Institute, moes@baptisthealth.net

Maria Figueroa
Baptist Hospital of Miami, MariaF1@baptisthealth.net

Michelle Lamarque
Homestead Hospital, MichelleLam@baptisthealth.net

Retrospective review of oral oncolytic agent use within a community hospital

Alyssa Donadio, PharmD, BCPS[1]; Moe Shwin, PharmD, BCOP[2]; Maria C. Figueroa, PharmD, BCOP[1]; Michelle Lamarque, PharmD, BCPS[1]
[1]Baptist Hospital of Miami, Department of Pharmacy, Miami, FL [2]Miami Cancer Institute, Department of Pharmacy, Miami, FL

Background

- Increasing availability of oral medications for the treatment of cancer offers many advantages.
- Delivery of these agents presents challenges including food and drug interactions, unique toxicities, education, and monitoring.
- At Baptist Hospital of Miami (BHM), parenteral chemotherapy administration occurs in the setting of strict prescribing standards, extensive verifications, and safe handling practices.
- The process of ordering, dispensing, and administration of oral chemotherapy agents has not been standardized throughout the institution.
- Quality and safety related to oral chemotherapy delivery has been recognized by organizations such as the American Society of Clinical Oncology (ASCO) as an important area of opportunity.
- Few studies currently exist to inform best practices, particularly among hospitalized patients.

Purpose

To assess whether oral chemotherapeutic agents are being appropriately utilized in hospitalized patients and to determine potential areas for process improvement to ensure their safe and effective use.

Methods

- Single-center, IRB-exempt, retrospective chart review
- Inclusion criteria:
  - Hospitalized adult patients ≥ 18 years of age
  - Order for an oral chemotherapy agent between May 1, 2018 and June 30, 2018
- Exclusion criteria:
  - Non-oncology indication for oral chemotherapy
- Primary outcome:
  - Appropriateness of oral chemotherapy orders (defined as appropriate dose and treatment day, lack of major drug interactions or treatment-related toxicities)
- Secondary outcomes:
  - Total number of missed doses
  - Time to oncology consultation
- Drug interactions were identified using the Lexicomp® Drug Interaction Tool
- Appropriate dose, treatment day, and treatment-related toxicities were evaluated based on available documentation in electronic medical record

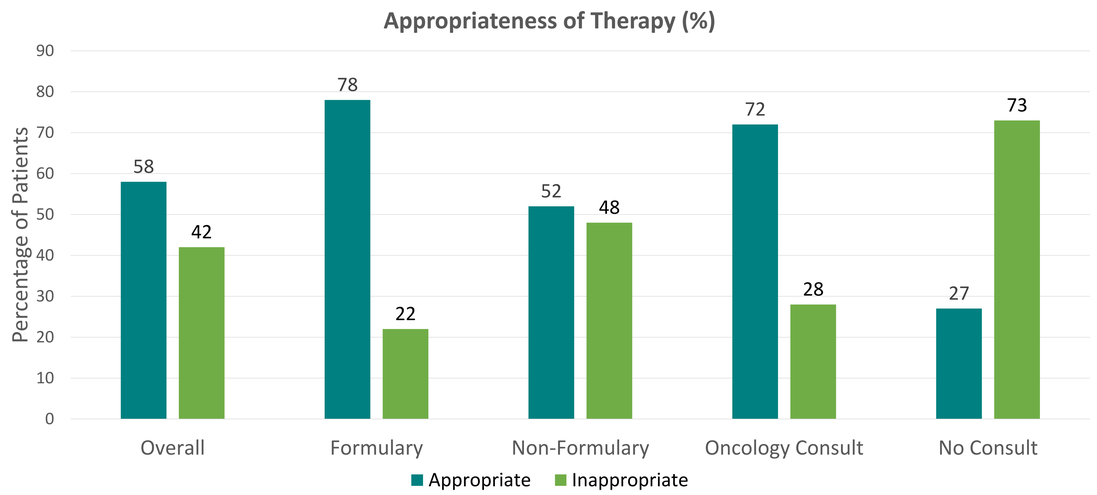
Results

Table 1. Patient Characteristics	N=36
Demographics	
Median age, years	72 (range, 26-89)
Gender—female, n (%)	24 (67%)
Median length of stay, days	6 (range, 1-104)
Location: Oncology Unit, n (%)	12 (33)
Oncology Consult, n (%)	25 (69)
Oral Chemotherapy Indication, n (%)	
Chronic Myeloid Leukemia (CML)	7 (19)
Acute Myeloid Leukemia (AML)	6 (17)
Breast Cancer	6 (17)
Lung Cancer	3 (8)
Acute Lymphoblastic Leukemia (ALL)	3 (8)
Multiple Myeloma	2 (6)
Myelodysplastic Syndrome (MDS)	2 (6)
Other	7 (19)

Table 2. Oral Chemotherapy Agents	N=36
Formulary, n (%)	9 (25)
Imatinib	5 (14)
Hydroxyurea	2 (6)
Capecitabine	1 (3)
Temozolomide	1 (3)
Non-Formulary, n (%)	27 (75)
Midostaurin	3 (8)
Lenalidomide	3 (8)
Dasatinib	3 (8)
Palbociclib	3 (8)
Nilotinib	2 (6)
Ribociclib	2 (6)
Other	11 (31)

Table 3. Outcomes	N=36
Primary Outcome, n (%)	
Appropriate Therapy	21 (58)
Secondary Outcomes	
Missed doses, total number	34
Median time to oncology consult, hrs	13 (range 0.5-23)
Suboptimal Therapy Categories, n (%)	
Drug interactions (category D-X)	8 (22)
Inappropriate dose	5 (14)
Treatment-related toxicity	5 (14)
Wrong treatment day	1 (3)
Food interaction	16 (44)

Table 4. Subgroup Analysis of Appropriate Therapy	
Formulary Agent, n (%)	7/9 (78)
Non-Formulary Agent, n (%)	14/27 (52)
Oncology Consult, n (%)	18/25 (72)
No Oncology Consult, n (%)	3/11 (27)



Discussion

- This study demonstrated the need to standardize the process for oral chemotherapy ordering, dispensing, and administration at BHM.
- Most common reasons for inappropriate therapy included drug interactions, medication dose, and continuation of therapy despite treatment-related toxicities.
- Formulary agents and cases with oncology provider consultations were associated with increased likelihood of appropriate prescribing.
- Limitations:
  - Information to assess outcomes was limited to documentation in electronic medical record
  - Small sample size limited ability to assess most common agents
- Future directions/considerations based on study results:
  - Pilot program for pharmacy-led inpatient oral chemotherapy monitoring service
  - Request common non-formulary chemotherapy agents to be built into pharmacy system to allow clinical checking and hazardous drug alerts
  - Provide education to pharmacists
  - Recommend oncology consult in cases of potential medication related adverse events

Conclusion

- 58% oral chemotherapy orders were appropriate
- Variety of opportunities for pharmacists to intervene, including:
  - Optimizing administration with regard to food
  - Identifying and managing major drug interactions
  - Ensuring correct dose and day of treatment
  - Recognizing significant treatment-related toxicities

Disclosures

All authors of this presentation have nothing to disclose concerning possible financial or personal relationships with commercial entities that may have direct or indirect interest in the subject matter of this presentation.

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