

INTRODUCTION

- Myelosuppression, which commonly manifests as neutropenia, anemia, thrombocytopenia, and/or lymphopenia, is a major dose-limiting complication of chemotherapy for patients with extensive-stage small cell lung cancer (ES-SCLC) who receive high-dose, white blood cell-sparing, oral, or intravenous chemotherapy.
- Worse myelosuppression results from cytotoxic damage to hematopoietic stem and progenitor cells, leading to reduced production of white blood cells, red blood cells, and platelets.

STUDY DESIGN AND DATA SOURCE

- This retrospective cohort study used electronic medical record (EMR) data from the Community Oncology Practices of America (COPA) database, a large, community oncology practice database with nearly 70,000 new cancer patients annually.
- The study data extract was generated between January 1, 2011, and December 31, 2012.

PATIENT POPULATION

- Adult patients (< age 85) with ES-SCLC who were treated with chemotherapy between September 1, 2013, and December 31, 2020, were included. The date of the first chemotherapy-containing line of therapy (LOT) was defined as the index treatment date (Table 1).
- Patients diagnosed with other primary tumors or enrolled in clinical trials during the study period were excluded.
- Patients were followed for a minimum of 30 days (unless the patient died) after the index treatment date until December 31, 2020, death, or end of study in the EMR database.

METHODS

- Eligibility to receive RBC/platelet transfusions (Hb < 8 g/dL or platelets < 10,000/µL) was assessed.
- Myelosuppressive events, neutropenia, anemia, thrombocytopenia, lymphopenia, and leukopenia, were defined using the National Cancer Institute’s Common Terminology Criteria for Adverse Events (CTCAE) version 4.0 definitions for neutropenia, anemia, thrombocytopenia, lymphopenia, and leukopenia (Table 1).
- A myelosuppressive episode was defined as each event on a unique date (Table 2).
- Multiple myelosuppressive episodes occurring within 7 days of the first event were considered independent events and associated with the same adverse events (sensitivity analysis).
- Eligibility to receive blood products (RBC or platelets) was independently defined.

OUTCOMES AND ANALYSIS

- Incidence and frequency of myelosuppressive events/episode (by type and grade), treatment patterns, and supportive care were characterized.

TABLE 1. BASELINE DEMOGRAPHIC AND CLINICAL CHARACTERISTICS

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>n (%)</th>
<th>Median (IQR)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Race, n (%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>976 (78.7)</td>
<td></td>
</tr>
<tr>
<td>Black</td>
<td>244 (19.7)</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>25 (2.0)</td>
<td></td>
</tr>
<tr>
<td>Sex, n (%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>1239 (100)</td>
<td></td>
</tr>
<tr>
<td>Age, 18–29 years, n (%)</td>
<td>100 (8.1)</td>
<td>20 (0.0–24)</td>
</tr>
<tr>
<td>30–49 years, n (%)</td>
<td>335 (26.8)</td>
<td>30 (24–34)</td>
</tr>
<tr>
<td>≥ 50 years, n (%)</td>
<td>804 (64.3)</td>
<td>65 (5.2)</td>
</tr>
<tr>
<td>Charlson Comorbidity Index (CCI)</td>
<td>1 (0.8)</td>
<td></td>
</tr>
<tr>
<td>CCI, Charlson Comorbidity Index; ECOG PS, Eastern Cooperative Oncology Group performance status; Hb, hemoglobin; RBC, red blood cell</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

CONCLUSIONS

- Results from this study may not be generalizable beyond community oncology settings.
- Further research is needed to determine the incremental value of using a combination of chemotherapy agents and concomitant agents to protect bone marrow from myelosuppression.
- Clinicians should consider the adverse event profiles of chemotherapy regimens in order to choose the appropriate treatment regimen for individual patients.

LIMITATIONS

- Incertain data were not available.
- Eligibility to receive RBC/platelet transfusions (Hb < 8 g/dL or platelets < 10,000/µL) was assessed because these data were not captured in the database.
- Results from the study may not be generalizable beyond community oncology settings.

CONCLUSIONS

- There is a high burden related to supportive care use among chemotherapy-treated patients with ES-SCLC in the community oncology setting. A better understanding of the incidence of myelosuppressive events during extensive-stage small cell lung cancer (ES-SCLC) chemotherapy may help in developing the burden of multi-line therapies for patients receiving chemotherapy.
- Close to 9% of patients received G-CSF, and more than half received ESAs.
- Thrombocytopenia was the most common adverse event among chemotherapy-treated patients with ES-SCLC in the community oncology setting. 
- To better understand the burden of multi-line therapies for patients receiving chemotherapy, further research is needed to determine the incremental value of using a combination of chemotherapy agents and concomitant agents to protect bone marrow from myelosuppression.
- Supportive care use among chemotherapy-treated patients with ES-SCLC in the community oncology setting is important to understand the burden of multi-line therapies for patients receiving chemotherapy.
- Results from the study may not be generalizable beyond community oncology settings.