# BURDEN OF MYELOSUPPRESSION IN EXTENSIVE-STAGE SMALL-CELL LUNG CANCER PATIENTS RECEIVING CHEMOTHERAPY: **RETROSPECTIVE ANALYSIS OF REAL-WORLD DATA FROM TENNESSEE ONCOLOGY**

# BACKGROUND

- Myelosuppression is common in patients with advanced solid tumors who use chemotherapy treatment<sup>1</sup>, and poses a high burden for patients and oncology practices<sup>2-6</sup>
- Previous retrospective real-world studies reported that chemotherapy-induced myelosuppression has significant burden on patients with small cell lung cancer (SCLC) in community oncology practices<sup>2-6</sup>
- This study described the burden of myelosuppression among patients with extensive-stage small cell lung cancer (ES-SCLC) treated with chemotherapy using data from Tennessee Oncology (TNO), one of the largest community-based cancer care specialists in the US that provides cancer care at 35 locations

# OBJECTIVES

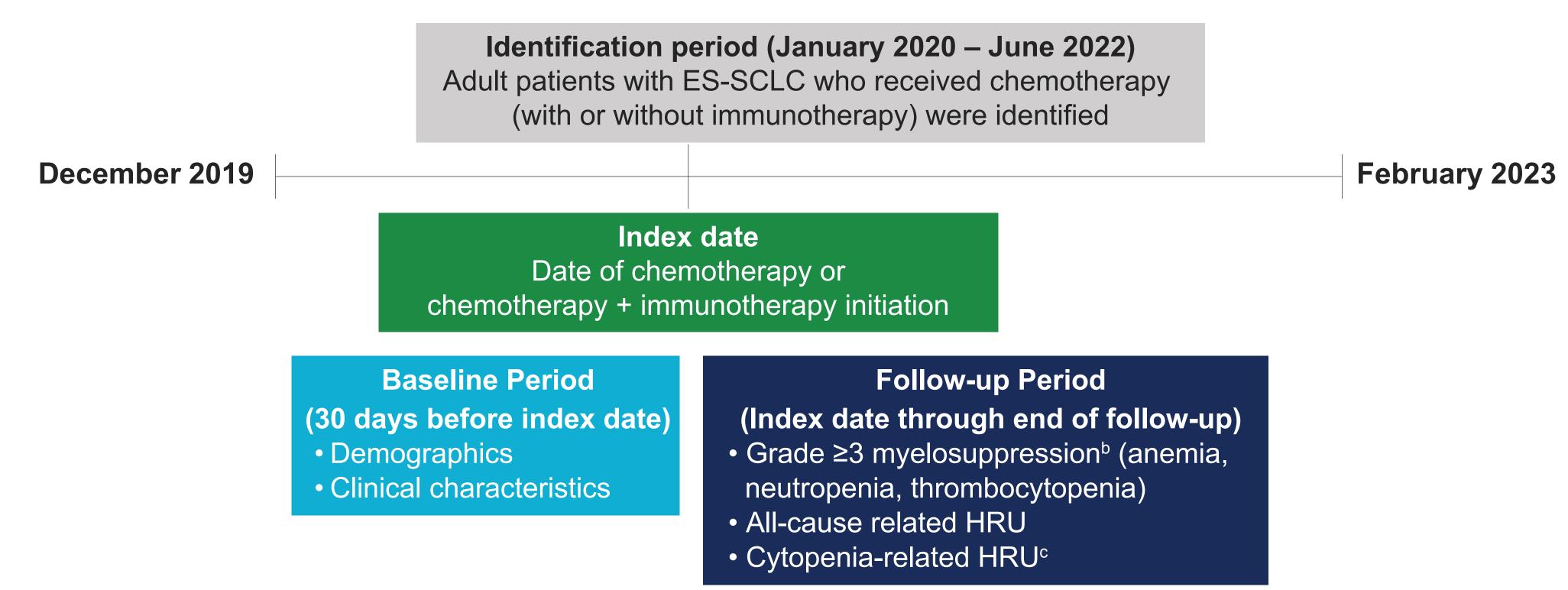
- To describe the prevalence of myelosuppression as assessed by hematologic adverse events (HAEs), including anemia, neutropenia and thrombocytopenia among patients with ES-SCLC treated with chemotherapy
- To describe cytopenia-related and all-cause healthcare resource use (HRU) among the same population

### METHODS

### STUDY POPULATION

- Inclusion criteria:
- Patients initiated chemotherapy or chemotherapy + immunotherapy at TNO from January 2020 to June 2022 following a documented ES-SCLC diagnosis
- $^{\circ}$  Patients ≥18 years of age on date of chemotherapy initiation
- Patients had a minimum follow-up of 6 months if the patient has not died by the data collection end date (a minimum follow-up of 28 days if the patient died)
- Exclusion criteria:
- Patients enrolled in a clinical trial during the study period
- Patients only received immunotherapy monotherapy
- Patients received multilineage myeloprotection therapy

#### FIGURE 1. RETROSPECTIVE STUDY DESIGN OVERVIEW<sup>a</sup>



Abbreviations: ANC, absolute neutrophil count; CTCAE: common terminology criteria for adverse events; ES-SCLC, extensive-stage small cell lung cancer; HAE, hematologic adverse event; HRU, healthcare resource use; g/dL, grams per deciliter; µL, microliter.

- <sup>3</sup> The data were collected from structured electronic medical records supplemented by chart review. Grade ≥3 myelosuppressive HAEs were defined based on laboratory values according to the CTCAE v5.0 criteria:
- Neutropenia: Grade 3: ANC ≥500/µL to < 1000/µL; Grade 4: ANC < 500/µL</li>
- Thrombocvtopenia: Grade 3: platelets ≥25.000/µL to < 50.000/µL; Grade 4: platelets < 25,000/µL
- Anemia: Grade 3: hemoglobin < 8.0 g/dL</li>

<sup>c</sup> Cytopenia-related HRU included red blood cell transfusions, platelet transfusions, granulocyte colony-stimulating factor, intravenous (IV) hydration use, erythropoiesis-stimulating agents, IV antibiotics, and iron infusions.

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DISCLOSURES

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#### ANALYSIS

• Continuous variables were described with means and standard deviations. Categorical variables were described with frequencies and proportions

# RESULTS

#### TABLE 1. DEMOGRAPHICS AND CLINICAL CHARACTERISTICS FOR ES-SCLC PATIENTS RECEIVING CHEMOTHERAPY

|  | ES SCI C potionto           | G-CSF administration anytime <sup>®</sup> n=116, 76.3%  |
|--|-----------------------------|---|
|  | ES-SCLC patients<br>n = 152 | G-CSF administration within 3 days after index n=68, 44.7%  |
| Demographics   |                             |   |
| Age at index, mean ± SD (years)                                | 66.7 ± 9.5                  | Grade 3 anemia n=44, 29.0%  |
| Female, n (%)  | 76 (50.0%)                  | RBC transfusion n=46, 30.3%   |
| White or Caucasian, n (%)                                      | 136 (89.5%)                 |   |
| Fime from ES-SCLC diagnosis to index, mean ± SD (months)       | $0.6 \pm 0.5$               | Iron infusion use n=13, 8.6%  |
| ndex year, n (%)   |                             |   |
| 2020   | 48 (31.6%)                  | ESA use <sup>c</sup> n=28, 18.4%  |
| 2021   | 69 (45.4%)                  | Grade 4 thrombocytopenia n=17, 11.2%  |
| 2022   | 35 (23.0%)                  |   |
| Tobacco use, n (%)   |                             | Grade 3 thrombocytopenia n=38, 25.0%  |
| Current Smoker   | 67 (44.1%)                  |   |
| Former Smoker  | 81 (53.3%)                  | Platelet transfusions n=11, 7.2%  |
| Never Smoker   | 4 (2.6%)                    | 0 20 40 60 80 100   |
| ECOG score at index, n (%)                                     |                             | Abbreviations: ESA, erythropoiesis-stimulating agents; G-CSF, granulocyte colony-stimulating factor; RBC, red blood cell.<br><sup>a</sup> 61.8% of patients had IV hydration use, and 5.3% received IV antibiotics. |
| 0  | 29 (19.1%)                  | <sup>b</sup> Pegfilgrastim was the most commonly used G-CSF (n=112, 73.7%).<br><sup>c</sup> Darbopoetin alfa was the most commonly used ESA treatment (n=25,16.5%).   |
| 1  | 83 (54.6%)                  | TABLE 2. ALL-CAUSE HRU DURING FOLLOW-UP PERIOD  |
| 2  | 32 (21.1%)                  | ES-SCLC patients  |
| ≥3   | 6 (4.0%)                    | n = 152   |
| Not documented/Unknown   | 2 (1.3%)                    | Duration of follow-up (months), mean ± SD 10.2 ± 7.0  |
| ndex regimen, n (%)  |                             | IP admissions   |
| Carboplatin, Etoposide, Atezolizumab                           | 130 (85.5%)                 | Patients with at least one admission, n (%) 88 (57.9%)  |
| Carboplatin, Etoposide   | 13 (8.6%)                   | Number of admissions per patient with an inpatient admission, mean $\pm$ SD 1.4 $\pm$ 0.8   |
| Other <sup>a</sup>   | 9 (5.9%)                    | Length of stay per patient with an admission (days), mean $\pm$ SD <sup>a</sup> 8.4 $\pm$ 7.3   |
| Patients with grade ≥3 myelosuppression during baseline, n (%) |                             | ER visits $102.(07.00)$   |
| Grade 3 anemia   | 0 (0.0%)                    | Patients with at least one visit, n (%)<br>Number of visits per patient with an ER visit, mean ± SD 1.7 ± 1.1   |
| Grade ≥3 neutropenia   | 0 (0.0%)                    | Number of visits per patient with an ER visit, mean ± SD       1.7 ± 1.1         OP visits  |
| Grade ≥3 thrombocytopenia                                      | 1 (0.7%)                    | Patients with at least one visit, n (%) 152 (100.0%)  |
| Any grade ≥3 myelosuppression, n (%)                           | 1 (0.7%)                    | Number of visits per patient with an OP visit, mean $\pm$ SD 13.8 $\pm$ 8.8   |

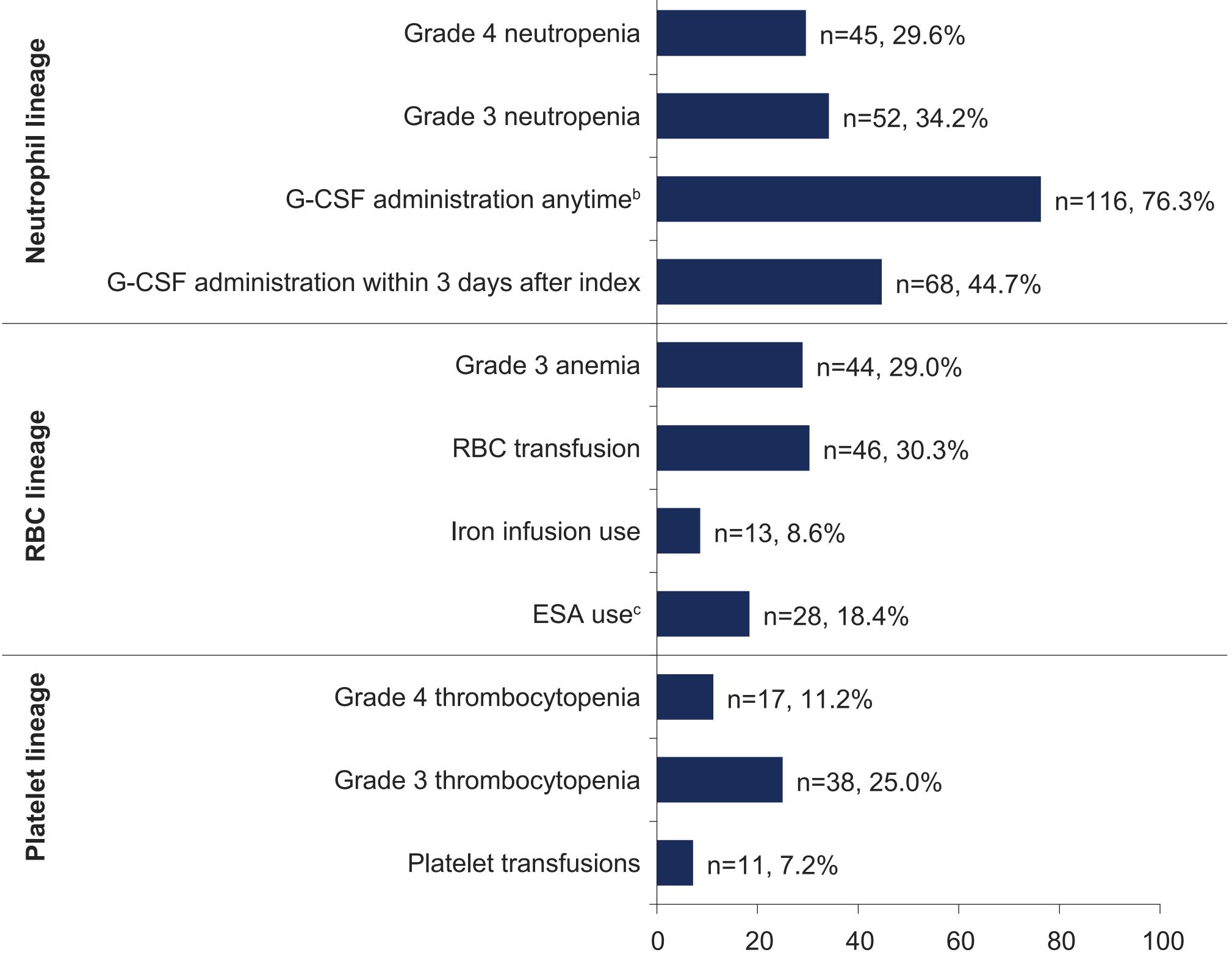
biorialioner 2000, 2000 checking cancer, 200 checking cancer, 20, clandara derialion <sup>a</sup> Other index regimens included carboplatin/etoposide/durvalumab, cisplatin/etoposide, cisplatin/etoposide/durvalumab.

#### REFERENCES

1. Kurtin S. Myeloid toxicity of cancer treatment. *J Adv Pract Oncol.* 2012, 3(4), 209-24.

2. Epstein RS, Weerasinghe RK, Parrish AS, et al. Real-world burden of chemotherapyinduced myelosuppression in patients with small cell lung cancer: a retrospective analysis of electronic medical data from community cancer care providers. J Med Econ. 2022, 25(1): 108-118. DOI: 10.1080/13696998.2021.2020570

## FIGURE 2. MYELOSUPPRESSION AND CYTOPENIA-RELATED OUTCOMES DURING FOLLOW-UP PERIOD<sup>a</sup>

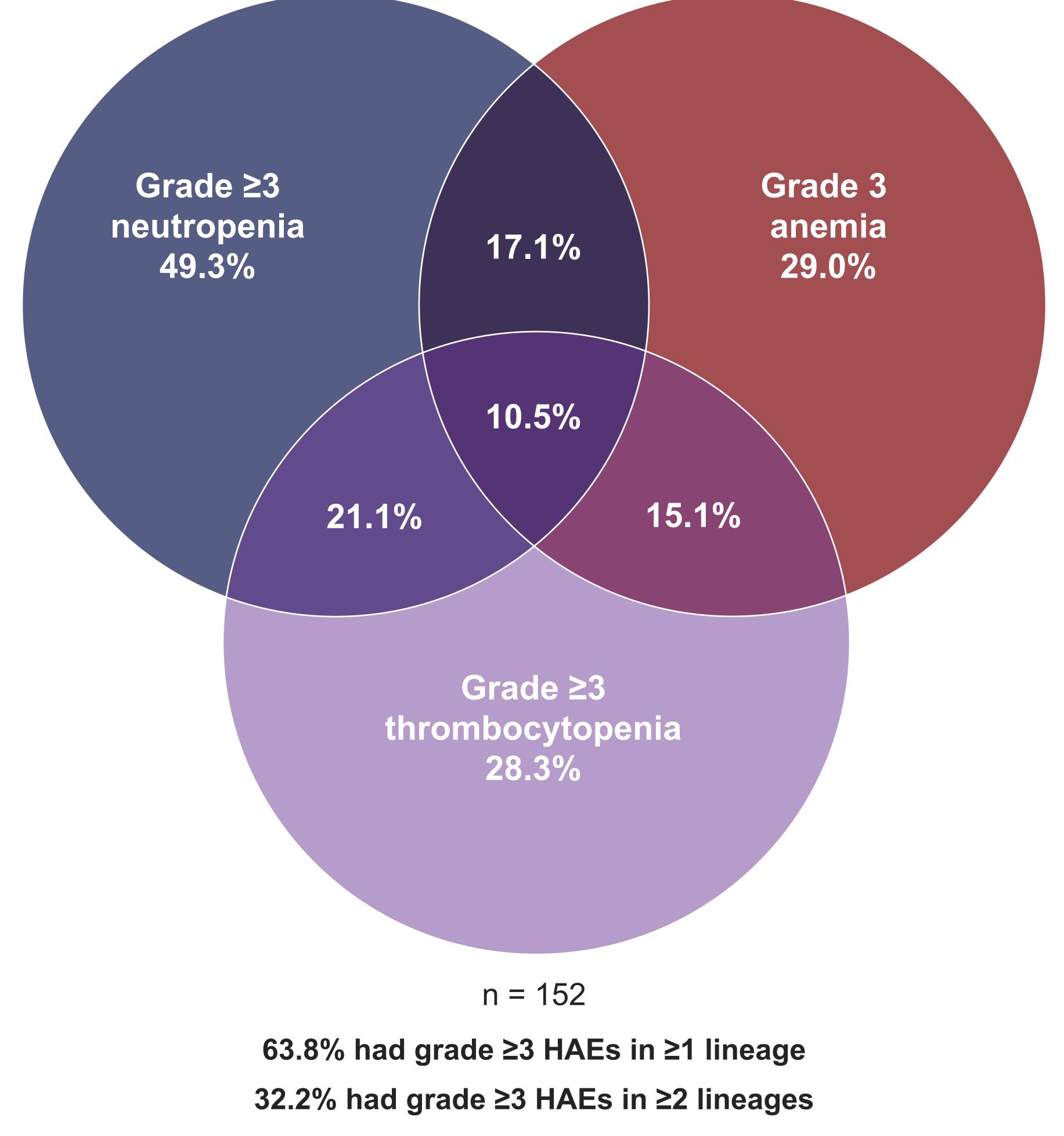


<sup>a</sup> Length of stay for IP admission was only reported for patients with known admission and discharge dates (n=85).

Goldschmidt J, Monnette A, Shi P, et al. Burden of chemotherapy-induced myelosuppression among patients with ES-SCLC in US community oncology settings. *Future Oncol.* 2022, 18(35), 3881-3894. DOI: 10.2217/ fon-2022-0754

network (NCCN) annual conference, March 31-April 2, 2022.

FIGURE 3. PREVALENCE OF SINGLE AND MULTI-LINEAGE MYELOSUPPRESSION DURING FOLLOW-UP PERIOD



10.5% had grade ≥3 HAEs in all 3 lineages

**Abbreviation:** HAE, hematologic adverse event.

# LIMITATIONS

- These data represented the community setting and may not be extrapolated to academic settings
- Cytopenia-related and all-cause HRU occurring outside of TNO were not captured

# CONCLUSION

- Consistent with other published studies<sup>2-6</sup>, there is high patient burden associated with traditional management of myelosuppression in patients with ES-SCLC in a community oncology practice like TNO, indicating an unmet need in this population
- Therapies to protect bone marrow from myelosuppression have potential to reduce such burden

5. Scott J, Slack D, Gingras L, et al. Burden of myelosuppression among patients with extensive-stage small cell lung cancer treated with chemotherapy in a community oncology setting. *Poster presented at national comprehensive cancer* 

6. Goldschmidt J, Hart L, Scott J, et al. Real-World Outcomes of Trilaciclib Among Patients with Extensive-Stage Small Cell Lung Cancer Receiving Chemotherapy. Adv Ther. 2023, 40(10), 4189-4215. DOI: 10.1007/s12325-023-02601-2

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