Treatment Patterns and Costs Associated with Small Cell Lung Cancer in a U.S. Medicare Population

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Background

- The recent approval of newer therapies (e.g., check-point inhibitors [CPIs]) has helped to bring about changes to the treatment landscape for small cell lung cancer (SCLC), offering potential prolonged survival and improved quality of life, particularly for PD-L1 positive patients.
- Characterizing patterns of treatment and costs among patients with SCLC is essential to understanding the costs and benefits associated with existing and emerging SCLC treatments in the Medicare population.

Objective

The objective of this study was to examine treatment patterns and costs associated with small cell lung cancer (SCLC) in a U.S. Medicare population.

Methods

- A retrospective analysis was conducted using the Surveillance, Epidemiology, and End Results (SEER)–Medicare linked data.
- Patients were included if they had (i) a record with a diagnosis of SCLC (SCLC was defined as having a primary tumor site ICD-O-3 code of C34, histology codes of 8041–8045 [various small cell], (ii) behavior code of 3 [malignant]) in the database from 1/1/2007 – 12/31/2017, (iii) were ≥65 years of age at diagnosis, and (iv) were continuously enrolled for ≥180 days pre-SCLC diagnosis.
- Treatment patterns and cost by line of therapy and category (inpatient, outpatient, anticancer medications, pharmacy, and emergency department [ED]) were summarized. Costs are in 2017 USD.

Results

- Of the 13,516 included patients, 57.7% were female, mean age was 74 years, 89.5% were White, and the majority (73.1%) were diagnosed with distant disease (**Table 1**).
- 55.4% of patients initiated first line (1L) treatment (**Figure 1**). Carboplatin + etoposide and cisplatin + etoposide were the most common 1L regimens (67.3% and 24% of patients, respectively).
- 36.7% of patients went on to second line (2L). In 2L, 44.7% of patients received monotherapy, with topotecan being the most common (28.4%). Carboplatin + etoposide was used for approximately 20% of 2L patients.
- Among patients with ≥1 month of follow-up (N=5,498), median total healthcare costs in 1L were $28,578 among combination chemotherapy recipients and $28,307 overall. Anticancer regimens accounted for 41.7% ($10,894) of mean 1L costs ($26,116) (**Figure 2**).
- Median total healthcare costs in 2L were $20,592 among monotherapy users and $22,516 overall. Anticancer regimens accounted for 64.0% ($14,838) of average total costs ($23,174) among patients with at least 30 days of follow-up post diagnosis (N=700) (**Figure 2**).

Table 1. Characteristics of Medicare Beneficiaries Diagnosed with SCLC

Characteristic	Overall (N=13,516)	Patients initiating 1L (N=7,494)
Age, mean (SD)	74.1 (6.2)	72.8 (5.4)
Gender, n (%)		
Male	5,717 (42.3)	3,204 (42.8)
Female	7,799 (57.7)	4,290 (57.2)
Race, n (%)		
White	12,103 (89.5)	6,798 (90.7)
Black	948 (7.0)	447 (6.0)
Asian or Pacific Islander	407 (3.0)	217 (2.9)
Other/ unknown	58 (0.4)	32 (0.4)
Region, n (%)		
East	8,594 (63.5)	4,852 (64.7)
Pacific Coast	3,173 (23.5)	1,669 (22.3)
Northern Plains	1,492 (11.0)	825 (11.0)
Southwest	267 (2.0)	148 (2.0)
Stage at Diagnosis, n (%)		
I-III	3,353 (24.8)	2,288 (30.5)
IV	9,881 (73.1)	5,079 (67.8)
Unknown	282 (2.1)	127 (1.7)
Presence of Metastases, n (%)		
Bone	1,646 (12.2)	549 (7.3)
Brain	1,036 (7.7)	972 (13.0)
Liver	2,370 (17.5)	549 (7.3)
Lung	1,020 (7.5)	1,151 (15.4)
Charlson Comorbidity Index (CCI), mean	9.7	5.0

Figure 1. Treatment Patterns for Patients Receiving 1L-3L Treatment for SCLC

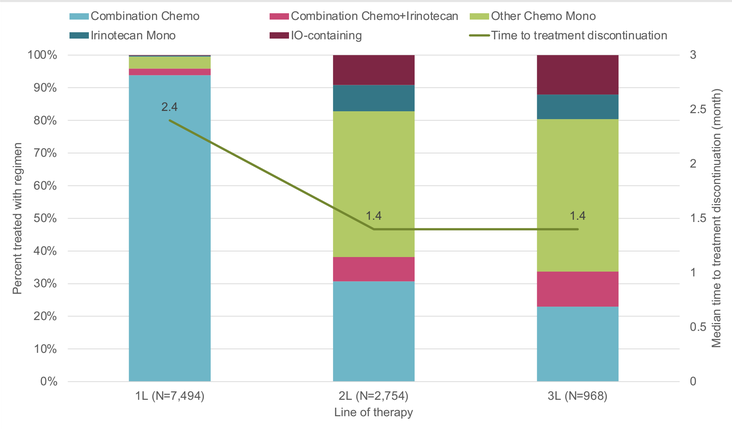

Figure 2. Weighted Average Health Care Costs by Regimen and Line of Therapy

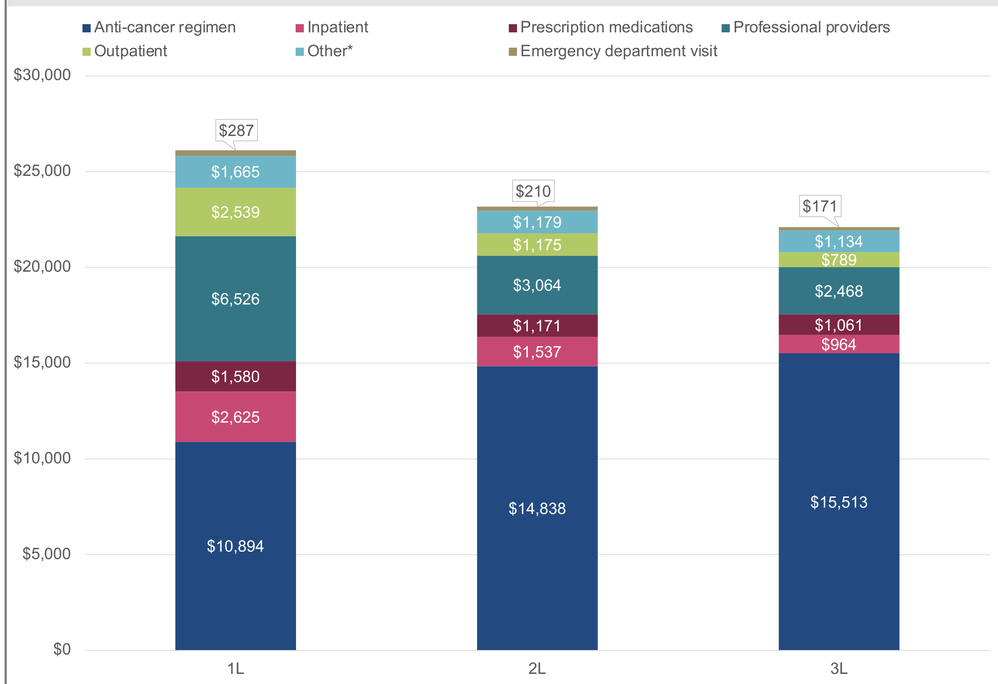

Figure notes: *Other includes durable medical equipment, home health services, hospice, and imaging.

CONCLUSIONS

- **Less than 60% of SCLC patients receive any anticancer therapy, and fewer still receive more than one line of treatment, highlighting the ongoing need for effective therapies for SCLC.**
- **Median (average) total 1L, 2L, and 3L healthcare costs were $28,307 ($26,116), $22,516 ($23,174), and $19,184 ($22,101), respectively.**
- **Professional providers, inpatient care, and anticancer therapies accounted for the majority of healthcare costs.**

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Abbreviations

CCI, Charlson Comorbidity Index; LOT, line of therapy; SD, standard deviation; SEER, Surveillance, Epidemiology, and End Results; SCLC: Small cell lung cancer; USD, United States dollars; 1L, first line; 2L, second line; 3L, third line.

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