HSD87

Real-World Treatment Patterns, Outcomes, HCRU, and Costs Associated With Previously Treated Extensive-Stage SCLC In the US Following the Approval of Newer Treatment Options

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BACKGROUND

- Extensive-stage small cell lung cancer (ES-SCLC) is highly aggressive, with most patients relapsing shortly after response to front-line (1L) therapy[1]
- Subsequent treatment options have been historically limited; patients treated in this setting incur notably high healthcare costs[2]
- Recent FDA approvals of lurbinectedin (2020) and tarlatamab (2024) introduced new treatment options for previously treated patients[1,3,4]
- Research on emerging healthcare resource use (HCRU), costs, and unmet needs remains limited

OBJECTIVE

- To describe current treatment patterns, HCRU, and costs to characterize ES-SCLC economic burden and unmet needs

CONCLUSIONS

- Despite limitations, results reveal a high unmet need for additional treatment options for previously treated patients with ES-SCLC due to poor survival
- Fragmented 2L/3L treatment patterns highlight the need for novel therapies that improve both clinical and economic outcomes

https://bit.ly/4dIYsFJ

METHODS

Methods are summarized in **Table 1**.

Table 1. Study design, population, follow-up, outcomes, and analysis

Item	Details
Design	Retrospective cohort study using adjudicated claims
Setting	Medicare Advantage and other commercially insured US beneficiaries starting second-line (2L) and/or third-line (3L) treatment for ES-SCLC after tarlatamab FDA approval (May 16, 2024)
Population	Treatment-based algorithm identified previously treated patients
Exclusions	Patients with <6 months of potential follow-up were excluded from the treatment and real-world clinical outcomes analyses
Index date	Start of 2L for 2L population (2LP); start of 3L for 3L population (3LP)
Index period	May 16, 2024 to June 30, 2025 (database cutoff)
Sample size	All eligible patients observed
Data source	Optum's de-identified Clinformatics® Data Mart Database
Patient follow-up	Followed until the earliest of death, disenrollment, or database cutoff
Line of therapy (LOT) follow-up	Followed from LOT start date until the earliest of LOT end, start of next LOT, death, disenrollment, or database cutoff
rwTTNT/D	Time from regimen start in specified LOT to date of next LOT or death. When subsequent LOT not received (treatment continues, disenrollment not due to death, or database cutoff), patients censored at last known database activity
Standard cost	Allowed amount for insurance services; standardized in Optum® CDM across providers and geographic areas
Inpatient measures	Inpatient counts and standard costs during specified LOT, reported per patient and per 100-patient weeks of follow-up for the specified cohort
Outpatient measures	Outpatient counts and standard costs during specified LOT, reported per patient and per 100-patient weeks of follow-up for the specified cohort
Total HCRU cost	Total standard costs observed during specified LOT, reported per patient and per patient weeks of follow-up for the specified cohort
OS	Overall survival (OS): Time from regimen start in specified LOT to death due to any cause or censoring at date of last follow-up
Analysis	Descriptive statistics for numeric and categorical variables; Kaplan-Meier (KM) methods were used for analysis of time to event variables

ES-SCLC, extensive-stage small cell lung cancer; US, United States; FDA, U.S. Food & Drug Administration; 2L, second-line; 3L, third-line; 2LP, 2L population; 3LP, 3L population; rwTTNT/D, real-world time to next treatment or death; OS, overall survival; KM, Kaplan-Meier; LOT, line of therapy.

RESULTS

Study population and treatment distribution

- Patient and clinical characteristics overall and by regimen type are reported in **Table 2**
- In the 2LP, treatment with lurbinectedin (44.7%), carboplatin + etoposide + atezolizumab (10.2%), and tarlatamab (9.8%) were most common (not shown)
- In the 3LP, lurbinectedin and tarlatamab were most common treatments (28.3% each), followed by nivolumab or pembrolizumab (5.4% each) (not shown)

HCRU and costs

- Median (Q1-Q3) total HCRU standardized cost per patient-week was $6,514 ($3,679-$9,954) in 2L and $4,597 ($2,961-$7,447) in 3L
- Inpatient costs were $2,146 ($895-$3,965) in 2L and $1,523 ($813-$3,806) in 3L for those with any inpatient care
- Outpatient costs were $4,851 ($2,936-$7,797) in 2L and $3,854 ($2,430-$5,696) in 3L
- HCRU and costs are further described in **Table 3**

Treatment and real-world clinical outcomes

- Median follow-up was 4.8 months in both 2LP (n=156) and 3LP (n=46)
- During follow-up, 28.8% of 2LP patients and 13.0% of 3LP patients received a subsequent line
- During follow-up, 57.1% of 2LP patients and 65.2% of 3LP patients died
- Treatment patterns for the 2LP are shown visually in **Figure 1**
- Among 3LP patients, fourth-line (4L) treatment start was observed in only 6 patients
- OS and rwTTNT/D for both populations are summarized in **Table 4**
  - Median OS was 6.74 months for 2LP and 5.91 months for 3LP
  - Median rwTTNT/D was 4.38 months for 2LP and 5.72 months for 3LP

RESULTS (continued)

Table 2. Baseline characteristics

Characteristic	2LP N (%)	3LP N (%)
Number of patients	264	92
Age at index (years)		
Mean (SD)	70.1 (7.3)	68.6 (8.4)
Median (Q1-Q3)	70 (67-75)	69 (65-74)
<65	44 (16.7)	21 (22.8)
65-74	153 (58)	49 (53.3)
75+	67 (25.4)	22 (23.9)
Sex		
Female	140 (53)	56 (60.9)
Race/Ethnicity		
Hispanic	9 (3.4)	6 (6.5)
White, non-Hispanic	192 (72.7)	66 (71.7)
Black, non-Hispanic	27 (10.2)	9 (9.8)
Other/unknown/missing	36 (13.7)	11 (12.0)
Insurance type		
Medicare Advantage	241 (91.3)	82 (89.1)
Other commercial	23 (8.7)	10 (10.9)
Geographic region		
Midwest	83 (31.4)	34 (37)
Northeast	48 (18.2)	10 (10.9)
South	110 (41.7)	38 (41.3)
West	23 (8.7)	9 (9.8)
Unknown		1 (1.1)
Smoking history		
Yes	122 (88.4)	85 (92.4)
NCI comorbidity index		
0	105 (39.8)	28 (30.4)
1+	159 (60.2)	64 (69.6)
Time from diagnosis to treatment (months)		
Median (Q1-Q3)	7.7 (5.4-11.0)	14.0 (10.5-18.2)
Previous treatment[a]		
Cisplatin	37 (14.0)	23 (25.0)
Carboplatin	233 (88.0)	78 (85.0)
Etoposide	264 (100.0)	92 (100.0)
Irinotecan	<5	<5
Durvalumab	44 (17.0)	18 (20.0)
Atezolizumab	142 (54.0)	46 (50.0)

2L, second-line; 3L, third-line; 2LP, 2L population; 3LP, 3L population; SD, standard deviation; Q1, first quartile; Q3, third quartile.
[a]Patients may have received more than one treatment as part of a combination regimen; percentages may not total 100%.

Table 3. HCRU and costs[a] among patients with previously treated ES-SCLC during 2L and 3L

	2LP		3LP	
	Mean (SD)	Median (Q1-Q3)	Mean (SD)	Median (Q1-Q3)
All patients	N=264		N=92	
Number of weeks[b]	18.6 (12.4)	16 (10-25)	19.6 (13.3)	17 (8-28)
Total HCRU standard costs ($1,000)[a]				
Per patient	121.9 (106.9)	83.9 (48.0-173.5)	103.8 (98.0)	72.8 (39.7-141.4)
Per patient weeks	7.8 (6.2)	6.5 (3.7-10.0)	6.1 (5.0)	4.6 (3.0-7.4)
Inpatient standard costs				
Per patient	24.7 (43.9)	0 (0-35.8)	19.9 (34.8)	0 (0-27.9)
Per patient weeks	1.6 (3.2)	0 (0-2.1)	1.4 (2.9)	0 (0-1.5)
Outpatient standard costs				
Per patient	97.2 (93.3)	69.4 (31.0-126.2)	83.9 (88.4)	58.1 (25.7-119.4)
Per patient weeks	6.1 (5.4)	4.9 (2.9-7.8)	4.7 (3.8)	3.9 (2.4-5.7)
Patients with inpatient care	N=129		N=44	
Number of weeks[b]	19.9 (10.9)	17 (12-25)	20.6 (13.1)	16 (11-30)
Inpatient standard costs ($1,000)[a]				
Per patient	50.6 (51.3)	36.5 (19.3-66.3)	41.6 (40.4)	30.7 (17.6-48.9)
Per patient weeks	3.4 (3.9)	2.1 (0.9-4.0)	3.0 (3.6)	1.5 (0.8-3.8)

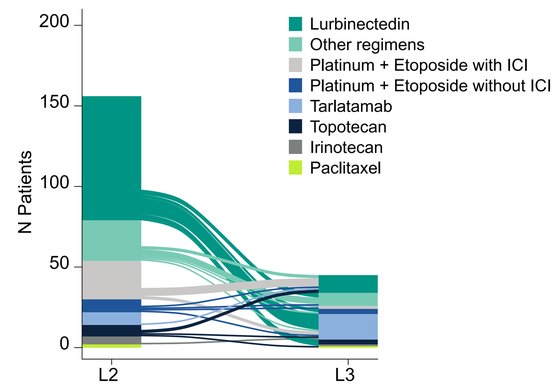
HCRU, healthcare resource use; ES-SCLC, extensive-stage small cell lung cancer; 2L, second-line; 3L, third-line; 2LP, 2L population; 3LP, 3L population; SD, standard deviation; Q1, first quartile; Q3, third quartile.
[a]All costs in thousand US dollars.
[b]From treatment start to date of death, disenrollment, data cutoff, or next line of therapy minus one day, whichever occurs first.

Table 4. Real-world outcomes among patients with previously treated ES-SCLC

	2LP[a] (n=156)	3LP[a] (n=46)
OS		
Patients who died, n (%)	89 (57.1)	30 (65.2)
Median (95% CI), months	6.74 (5.06-8.08)	5.91 (3.29-6.9)
OS rates (95% CI)		
3 months	78.4% (70.8-84.2)	68.9% (53.2-80.3)
6 months	54.2% (45.7-62)	48% (32.1-62.2)
9 months	37.8% (29.3-46.3)	23.4% (11-38.5)
rwTTNT/D		
Events, n (%)	120 (76.9)	32 (69.6)
Patients died before next line of therapy	75 (48.1)	26 (56.5)
Started next line of therapy	45 (28.8)	6 (13)
Median (95% CI), months	4.38 (3.68-5.13)	5.72 (3.12-6.32)

ES-SCLC, extensive-stage small-cell lung cancer; 2L, second-line; 3L, third-line; 2LP, 2L population; 3LP, 3L population; OS, overall survival; rwTTNT/D, real-world time to next treatment or death; CI, confidence interval.
[a]Patients with ≥6 months of potential follow-up (index dates through 2024).

Figure 1. 2LP treatment patterns (n=156)



DISCUSSION

- Real-world data show high costs and mortality among previously treated ES-SCLC patients
- Median OS in our cohort was 6.74 months (2LP) and 5.91 months (3LP) with a majority of patients in both cohorts dying before receiving another LOT. For context, the median OS estimate in a prior real-world report was 6.1 months (index dates 2018 to 2023) in 2L and 4.0 months in 3L[5]
- Mean total costs per-patient-per-month (PPPM) were numerically higher than those reported in a previous study[5]

LIMITATIONS

- Study limitations include:
  - Possible misclassification from using administrative claims to identify ES-SCLC and to assign lines of therapy
  - Limited generalizability because uninsured patients, patients who received no systemic therapy, and clinical-trial participants were excluded
  - Findings may not apply to patients who progressed from limited to extensive stage
  - Further analyses are needed after wider real-world adoption of tarlatamab
  - Short follow-up and potentially immature outcome estimates (3L rwTTNT/D largely driven by death events)

DISCLOSURES

Conflicts of interest: Melissa L. Santorelli, Adriana Valderrama, Hozefa Divan, Xiaoxia Wang, and Himani Aggarwal are employees of Merck Sharp & Dohme LLC, a subsidiary of Merck & Co., Inc., Rahway, NJ, USA and are stockholders of Merck & Co., Inc., Rahway, NJ, USA.
Jie Meng, Marian Eberl, and Ivan Radujko are employed by and are stockholders of Daiichi Sankyo. Noura J. Choudhury reports Institutional research funding: Amgen, AbbVie, Monte Rosa Therapeutics, Roche/Genentech, Merck & Co., Harpoon Therapeutics, Janux Therapeutics, Seagen/Pfizer, Corbus, DualityBio; honoraria: MJH Life Sciences, IDEOlogy Health; royalties: Wolters Kluwer; consulting: AbbVie, Merck & Co., Harpoon Therapeutics, Eli Lilly, Amgen, Daiichi Sankyo, IDEAYA Biosciences.

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CONTACT INFORMATION

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