EE130

Real-World Healthcare Resource Utilization Patterns Among Patients With Non-Small Cell Lung Cancer Treated With Amivantamab Monotherapy

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Key Takeaway

Among real-world patients with advanced NSCLC receiving amivantamab monotherapy in 2L+ following prior treatment with PBC, HRU was stable prior to and during treatment with amivantamab, suggesting that treatment with amivantamab does not contribute to an increase in medical services relative to treatment regimens used in earlier LOTs

Conclusions

Among patients receiving amivantamab monotherapy in 2L+, the majority initiated treatment in 2L

Stable HRU was observed during the LOTs prior to amivantamab initiation, and during amivantamab treatment, implying that amivantamab may provide therapeutic benefit without an increase in medical service use relative to earlier LOTs

Future research with longer follow-up and amivantamab use in earlier LOTs is warranted, to reflect newer US FDA approvals and to provide a deeper understanding of amivantamab use and related HRU in real-world settings

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Disclosures
D. Waterhouse reports personal consulting fees from Amgen, Astellas Pharma, AZTherapies, Bristol-Myers Squibb, Eisai, Fresenius Kbi, Gilead Sciences, Johnson & Johnson, Lilly, Merck, Miratl Therapeutics, Novartis, Pfizer, Regeneron/Sanofi, Sanofi, and Takeda; Speakers Bureau for Amgen, AZTherapies, Bristol-Myers Squibb, EMD Serono, Fresenius Kbi, Johnson & Johnson, and Merck. I. Lin and D. Waters are employees of Johnson & Johnson. L. Morrison, B. Emond, M.- H. Lafeuille, Y. Wang, L. Diaz, and P. Lefebvre are employees of Analysis Group, Inc., a consulting company that has provided paid consulting services to Johnson & Johnson, which funded the development and conduct of this study.

Background

- Among patients with non-small cell lung cancer (NSCLC), approximately 17% have epidermal growth factor receptor mutations (EGFRm),[1] among whom up to 12% of patients have Exon 20 insertion (Ex20Ins) mutations, which is the third most common *EGFR* mutation[2-4]
- Ex20Ins mutations have been associated with worse prognosis and shorter survival rates relative to other forms of NSCLC[5]
- The United States (US) Food and Drug Administration (FDA) approved amivantamab monotherapy for patients with EGFRm Ex20Ins advanced NSCLC who progressed after platinum-based chemotherapy (PBC) on 5/21/2021[6]; in combination with PBC for first-line (1L) EGFRm Ex20Ins on 3/1/2024[7]; in combination with lazertinib for 1L EGFRm Exon 19 deletion and L858R on 8/19/2024[8]; and in combination with PBC for second-line (2L) EGFRm Exon 19 deletion and L858R[9] on 9/19/2024
- Real-world evidence on healthcare resource utilization (HRU) among patients treated with amivantamab for EGFRm advanced NSCLC is limited

Objective

- To describe real-world HRU among patients with advanced NSCLC receiving amivantamab monotherapy in 2L or later (2L+), following prior treatment with PBC

Methods

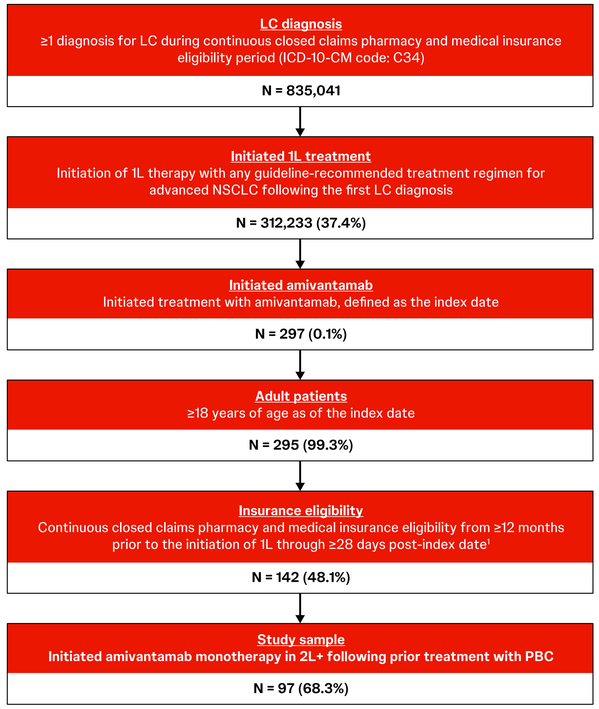
Data source

- Closed administrative insurance claims from Komodo Research Database (KRD) were used (1/1/2016-10/31/2023)
- KRD captures a US census-level representation of ages, incomes, and ethnicities to characterize a diverse patient cohort and ensures socioeconomic diversity by sourcing closed claims from Commercial, Medicare, Medicaid, Managed Medicaid, and other payers
- Data were de-identified and comply with the patient health information requirements of the Health Insurance Portability and Accountability Act

Study population

- Adult patients with advanced NSCLC who initiated amivantamab as monotherapy in 2L+ following prior treatment with PBC were selected according to the criteria presented in **Figure 1**
- PBC used prior to amivantamab initiation may have been used by itself, or in combination with other treatment classes

Figure 1: Sample Selection



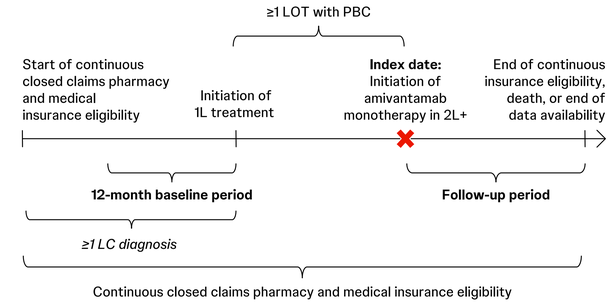
Abbreviations: 1L: first-line; 2L+: second-line or later; ICD-10-CM: International Classification of Disease, Tenth Revision, Clinical Modification; LC: lung cancer; NSCLC: non-small cell lung cancer; PBC: platinum-based chemotherapy.

Note:
1. A washout period of 12 months of continuous closed claims pharmacy and medical insurance eligibility was required to accurately identify 1L and ensure that patients did not have other NSCLC treatments prior to 1L. A minimum of 28 days post-index was required (corresponding to the amivantamab cycle length) to identify whether amivantamab was initiated as monotherapy or combination therapy.

Study design

- A descriptive retrospective cohort study design was used (**Figure 2**)

Figure 2: Study Design Scheme



Abbreviations: 1L: first-line; 2L+: second-line or later; LC: lung cancer; LOT: line of therapy; PBC: platinum-based chemotherapy.

- Data availability aligned with amivantamab's FDA approval as monotherapy for EGFR Exon20Ins after progression on PBC
- The index date was defined as the date of amivantamab initiation as monotherapy in 2L+
- Patient demographics were evaluated on the index date, and clinical characteristics were described during the 12-month period preceding the initiation of 1L therapy (baseline period)
- The follow-up period was defined as the time between the index date and the end of continuous insurance eligibility, death, or end of data availability, whichever occurred first

Study measures and statistical analysis

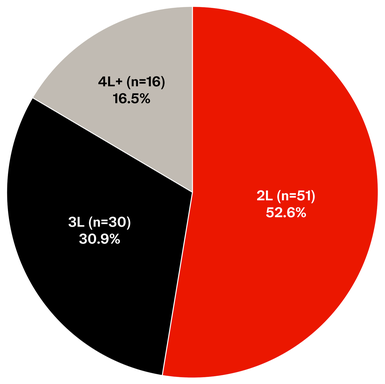
- All-cause HRU was reported per-patient-per-month (PPPM) prior to the initiation of amivantamab, and during the amivantamab line of therapy (LOT)
  - HRU reported prior to the initiation of amivantamab was an aggregation of all LOTs a patient received prior to the amivantamab LOT; as such, patients could contribute one or multiple prior LOTs
- Results were reported descriptively using means, standard deviations (SDs), and medians for continuous variables, and frequencies and proportions for categorical variables

Results

Study sample and baseline characteristics

- A total of 97 patients initiated amivantamab monotherapy in 2L+ following prior treatment with PBC (**Figure 2**)
- The majority (52.6%) of patients initiated amivantamab in 2L (n=51), with 30.9% in 3L (n=30), and 16.5% in fourth-line or later (4L+; n=16) (**Figure 3**)
- The mean age of patients at initiation of amivantamab was 59.2 years, and 61.9% of patients were female (**Table 1**)
- During the baseline period, the mean Quan-Charlson Comorbidity Index score was 7.2 and 32.0% of patients had brain metastases
- The mean time between the first observed lung cancer diagnosis and initiation of 1L therapy was 5.3 months, and the mean time between the first observed lung cancer diagnosis and initiation of the amivantamab LOT was 19.0 months

Figure 3: Line of Amivantamab Initiation



Abbreviations: 2L: second-line; 3L: third-line; 4L+: fourth-line or later.

Table 1: Baseline Demographic and Clinical Characteristics

Mean ± SD [median] or n (%)	Study population N=97
Demographic characteristics[1]	
Age (years)	59.2 ± 11.0 [59.0]
Female	60 (61.9)
Year of index date	
2021	15 (15.5)
2022	51 (52.6)
2023	31 (32.0)
Insurance plan	
Commercial	58 (59.8)
Medicare	25 (25.8)
Medicaid	14 (14.4)
Clinical characteristics[2]	
Quan-CCI	7.2 ± 2.6 [7.0]
Time from first observed LC diagnosis to initiation of 1L[3] (months)	5.3 ± 13.0 [1.5]
Time from first observed LC diagnosis to initiation of amivantamab[3] (months)	19.0 ± 16.8 [14.0]
Prior care received	
QT-prolonging medications	90 (92.8)
Corticosteroids	77 (79.4)
Radiotherapy	33 (34.0)
Anticoagulant therapy	19 (19.6)
Tetracyclines for EGFR-related dermatological issues	16 (16.5)
Topical corticosteroids for the treatment of rash	15 (15.5)
Respiratory support	12 (12.4)
Lung-related surgery[4]	5 (5.2)
Antidiarrheals	3 (3.1)
Presence of brain or cerebral meninges metastases	31 (32.0)

Abbreviations: 1L: first-line; EGFR: epidermal growth factor receptor; LC: lung cancer; Quan-CCI: Quan-Charlson Comorbidity Index; SD: standard deviation.

Notes:
1. Demographic characteristics were evaluated on the index date.
2. Clinical characteristics were reported in the 12-month baseline period prior to the initiation of 1L therapy, unless otherwise specified.
3. The first LC diagnosis was evaluated at any time during the period of continuous insurance eligibility prior to the initiation of 1L therapy.
4. Surgery included lung lobectomy, segmentectomy, sleeve resection, and pneumectomy.

Follow-up HRU

- The median duration of each prior LOT preceding amivantamab initiation in 2L+ was 7.1 months (**Table 2**)
- Patients were followed for a median of 6.5 months following the initiation of amivantamab monotherapy in 2L+, with a median duration of the amivantamab LOT of 5.3 months
- All-cause HRU was stable prior to and during treatment with amivantamab; the mean number of days with outpatient service use PPPM was 6.09 during the LOTs preceding amivantamab initiation, and 6.60 during treatment with amivantamab
- Similarly, the mean number of inpatient admissions PPPM during the LOTs preceding amivantamab initiation and during amivantamab treatment were 0.05 and 0.08 respectively, while the mean number of days with emergency room visits PPPM were 0.19 during the LOTs preceding amivantamab initiation, and 0.21 during amivantamab treatment
- Mean number of days with outpatient services decreased in subsequent months relative to the first month of amivantamab treatment

Table 2: Follow-up HRU

Mean ± SD [median]	Patients initiating amivantamab monotherapy in 2L+ N=97			
	All LOTs prior to amivantamab LOT	Amivantamab LOT		
		Overall	First month	Subsequent months
Duration of follow-up period (months)	19.6 ± 10.8 [18.3]	8.7 ± 6.3 [6.5]	-	-
Duration of LOT[1] (months)	8.0 ± 5.0 [7.1]	7.0 ± 5.7 [5.3]	1.0 ± 0.0 [1.0]	6.0 ± 5.7 [4.3]
Monthly all-cause HRU (PPPM)				
Number of days with outpatient services	6.09 ± 3.08 [5.49]	6.60 ± 3.25 [5.83]	8.87 ± 3.51 [8.00]	5.56 ± 4.03 [4.91]
Number of days with antineoplastic drug administration	1.11 ± 0.59 [1.14]	2.08 ± 1.12 [2.04]	4.47 ± 1.79 [5.00]	1.16 ± 0.84 [1.21]
Number of days with services related to unspecified antineoplastic administration	1.39 ± 0.73 [1.34]	2.27 ± 1.20 [2.20]	4.82 ± 1.91 [5.00]	1.31 ± 0.89 [1.25]
Number of days with other outpatient services	5.56 ± 3.04 [5.06]	5.60 ± 3.31 [4.55]	6.65 ± 4.00 [6.00]	5.05 ± 4.04 [4.41]
Number of inpatient admissions	0.05 ± 0.14 [0.00]	0.08 ± 0.20 [0.00]	0.03 ± 0.19 [0.00]	0.08 ± 0.21 [0.00]
Number of days with emergency room visits	0.19 ± 0.30 [0.08]	0.21 ± 0.38 [0.00]	0.23 ± 0.59 [0.00]	0.25 ± 0.75 [0.00]
Number of days with other services	0.52 ± 0.76 [0.24]	0.81 ± 1.23 [0.23]	1.27 ± 2.20 [0.00]	0.49 ± 0.71 [0.10]

Abbreviations: 2L+: second-line or later; HRU: healthcare resource utilization; LOT: line of therapy; PPPM: per-patient-per-month; SD: standard deviation.

Note:
1. Defined as the time from the date of initiation of the LOT until the day preceding the initiation of the following LOT (or end of the observation period for patients without a next LOT.

Limitations

- By initiating amivantamab, it was assumed that patients were treated for EGFRm advanced NSCLC; however, in the absence of clinical information in claims data, the specific disease stage and mutation type could not be confirmed
- This study was based on US data sources and descriptive in nature; no statistical comparisons were performed
- Results may not be generalizable to uninsured patients or those with other types of insurance
- As with all claims-based studies, there may be inaccuracies due to coding errors and missing data

References
1. Thai AA, et al. *Lancet*. 2021;398(10299):535-554. 2. Riess JW, et al. *J Thorac Oncol*. 2018;13(10):1560-1568. 3. Van Sanden S, et al. *Target Oncol*. 2022;17(2):153-166. 4. Wang F, et al. *Transl Cancer Res*. 2020;9(4):2982-2991. 5. Park K, et al. *J Clin Oncol*. 2021;39(30):3391-3402. 6. U.S. Food & Drug Administration. FDA grants accelerated approval to amivantamab-vmjw for metastatic non-small cell lung cancer. 2021. 7. U.S. Food & Drug Administration. FDA approves amivantamab-vmjw for EGFR exon 20 insertion-mutated non-small cell lung cancer indications. 2024. 8. U.S. Food & Drug Administration. FDA approves lazertinib with amivantamab-vmjw for non-small lung cancer. 2024. 9. U.S. Food & Drug Administration. FDA approves amivantamab-vmjw with carboplatin and pemetrexed for non-small cell lung cancer with EGFR exon 19 deletions or L858R mutations. 2024.

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