P3.203

Real-world characteristics and treatment patterns of c*EGFR*m NSCLC patients receiving 2L+ amivantamab plus chemotherapy

Alexander I Spira[1], Ruibin Wang[2], Cindy Chen[2], Pratyusha Vadagam[3], Courtney D Longfield[3], Sanghyuk Seo[3,*]

[1]Virginia Cancer Specialists, Fairfax, VA, USA; [2]Johnson & Johnson, Titusville, NJ, USA; [3]Johnson & Johnson, Horsham, PA, USA.
*Presenting author: SSeo8@ITS.JNJ.com

Key Takeaway

Findings from this analysis highlight the adaptability and flexibility of amivantamab plus carboplatin and pemetrexed (ACP) dosing in patients with *EGFR*m NSCLC treated in the real-world setting

Conclusions

- Compared with MARIPOSA-2 trial participants, ACP-treated patients in this study were older and had poorer baseline functional status, with 19% having an ECOG PS ≥2, reflecting the diversity of patients in the real-world setting
- The majority of patients were still on 2L ACP (68%) or 3L ACP (76%) treatment at the time of data cutoff
- While most patients received label-recommended starting doses during Week 1 and Week 7, dose modifications of amivantamab, carboplatin, and pemetrexed were commonly observed, highlighting the flexibility in dosing strategies when this treatment is used in routine clinical practice

Acknowledgments

This study was funded by Johnson & Johnson. Medical writing assistance was provided by Lumanity Communications Inc. and funded by Johnson & Johnson. Programming assistance was provided by Kalla Sun and funded by Johnson & Johnson.

Disclosures

AIS served in a consulting or advisory role for Array BioPharma, MedImmune, Incyte, Amgen, Novartis, AstraZeneca, Mirati Therapeutics, Gritstone bio, Jazz Pharmaceuticals, Merck, Bristol Myers Squibb, Takeda, Johnson & Johnson, Mersana, Blueprint Medicines, Daiichi Sankyo, Regeneron, Eli Lilly, Black Diamond Therapeutics, and Sanofi; served in a leadership role for NEXT Oncology; holds stock or other ownership interests in Eli Lilly; received honoraria from CytomX Therapeutics, MedImmune, AstraZeneca, Merck, Takeda, Amgen, Johnson & Johnson, Novartis, Bristol Myers Squibb, and Bayer; and received research funding from Roche, AstraZeneca, Boehringer Ingelheim, Astellas, MedImmune, Novartis, Incyte, AbbVie, Ignyta, Takeda, MacroGenics, CytomX Therapeutics, LAM Therapeutics, Astex Pharmaceuticals, Bristol Myers Squibb, Loxo Oncology, Arch Therapeutics, Gritstone bio, Plexxikon, Amgen, Daiichi Sankyo, ADC Therapeutics, Johnson & Johnson, Mirati Therapeutics, Rubius Therapeutics, Synthekine, Mersana, Blueprint Medicines, Regeneron, Alkermes, Revolution Medicines, Medikine, Black Diamond Therapeutics, BluPrint Oncology, NALO Therapeutics, Scorpion Therapeutics, and ArriVent BioPharma. **RW**, **CC**, **PV**, **CDL**, and **SS** are employees of and may hold stock in Johnson & Johnson.
The authors report that generative AI was not used in the preparation of this poster.

Introduction

- Amivantamab plus carboplatin and pemetrexed (ACP) is approved for the treatment of adults with locally advanced or metastatic non-small cell lung cancer (NSCLC) with epidermal growth factor receptor (*EGFR*) exon 19 deletions or exon 21 L858R substitution mutations who experienced disease progression on or after EGFR tyrosine kinase inhibitor treatment based on the MARIPOSA-2 study (ClinicalTrials.gov identifier: NCT04988295)[1–4]
  - In MARIPOSA-2, ACP demonstrated clinical benefit versus chemotherapy alone and was the first targeted combination (along with ACP plus lazertinib) to show significantly improved progression-free survival post-osimertinib[3]
- The recommended dose of intravenous amivantamab, administered in combination with carboplatin and pemetrexed, is based on baseline body weight and includes loading doses given during Weeks 1–4, followed by dosing every 3 weeks during Week 7 and onward[1]
- The objective of this study was to describe the real-world demographics, clinical characteristics, and treatment patterns, including dosing patterns and modifications, among patients with common *EGFR*-mutated (*EGFR*m) NSCLC treated with ACP after 1 or 2 prior lines of therapy (LOTs)

Methods

- This retrospective, observational, descriptive cohort study used the Flatiron Enhanced Data Mart database to identify patients with common *EGFR*m NSCLC who received ACP between May 21, 2021, and December 31, 2025
- Eligible patients were ≥18 years of age and had received ACP (**Figure 1**) after 1 or 2 prior LOTs
- The index date was the start of the LOT with ACP
- Baseline demographics, clinical characteristics, and treatments received before and after ACP were described
- Dose modifications were defined based on the change from previous dose during Weeks 1–4 and during Week 7 and onward
  - The proportion of patients with dose reductions and escalations as well as time to dose reductions and escalations were described
- Medians with interquartile range (IQR) were used to report continuous variables, and counts and proportions were used to report categorical variables

Figure 1: ACP dosing schema

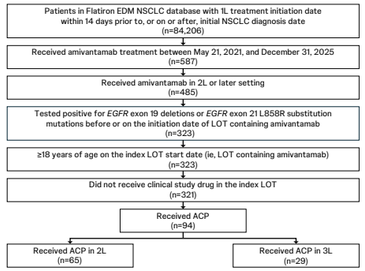
Carboplatin and pemetrexed were administered on Day 1 of each week indicated; amivantamab was administered on Day 1 of each week except Week 1.[a] [a]Amivantamab dose was 1400 mg (1750 mg if body weight ≥80 kg) during Weeks 1–4 and 1750 mg (2100 mg if body weight ≥80 kg) during Week 7 and onward. [b]During Week 1, amivantamab was administered as a split infusion on Day 1 and Day 2.
ACP, amivantamab plus carboplatin and pemetrexed; AUC, area under the curve; IV, intravenous; Q3W, every 3 weeks.

Results

Patient characteristics

- Among 84,206 patients in the Flatiron Enhanced Data Mart NSCLC database with a first-line (1L) treatment initiation date within 14 days prior to, or on or after, initial NSCLC diagnosis date, 94 patients received ACP during the analysis period (**Figure 2**)
  - Of those, 65 (69.1%) received ACP in the second-line (2L) setting and 29 (30.9%) received ACP in the third-line (3L) setting
  - All patients received intravenous amivantamab

Figure 2: Attrition diagram



1L, first-line; 2L, second-line; 3L, third-line; ACP, amivantamab plus carboplatin and pemetrexed; EDM, Enhanced Data Mart; EGFR, epidermal growth factor receptor; LOT, line of therapy; NSCLC, non-small cell lung cancer.

- Overall, median age was 68.5 years (IQR, 62–74), 44.7% of patients reported a history of smoking, 76.6% received treatment at a community oncology practice, and 87.2% had advanced/metastatic disease at diagnosis (**Table 1**)
- The median duration of follow-up from index ACP treatment to last confirmed structured activity was 6.2 months (IQR, 2.4–10.8)
- Based on *International Classification of Diseases-10* codes, bone metastases were most prevalent (28.7%), followed by brain (17.0%) and liver (7.4%)
- At the start of ACP treatment, 42.6% had an Eastern Cooperative Oncology Group performance status (ECOG PS) of 1, and 19.1% had an ECOG PS of ≥2
- The median time from initial NSCLC diagnosis to ACP treatment initiation was 2.42 years (IQR, 1.48–3.79)
- A total of 57.4% of patients had *EGFR* exon 19 deletion mutations, and 42.6% had exon 21 L858R mutations

Table 1: Baseline demographic and clinical characteristics

Characteristics	Overall (N=94)	2L ACP (n=65)	3L ACP (n=29)
Median (IQR) duration of follow-up,[a] months	6.2 (2.4–10.8)	6.4 (3.3–9.9)	5.2 (2.0–12.6)
Median (IQR) age, years	68.5 (62–74)	67 (60–74)	71 (67–73)
Male, n (%)	30 (31.9)	18 (27.7)	12 (41.4)
Race, n (%)			
White	50 (53.2)	37 (56.9)	13 (44.8)
Asian	9 (9.6)	7 (10.8)	2 (6.9)
Black or African American	11 (11.7)	7 (10.8)	4 (13.8)
Other[b]	14 (14.9)	8 (12.3)	6 (20.7)
Unknown	10 (10.6)	6 (9.2)	4 (13.8)
Ethnicity, n (%)			
Hispanic or Latino	7 (7.4)	5 (7.7)	2 (6.9)
Not Hispanic or Latino	67 (71.3)	46 (70.8)	21 (72.4)
Unknown	20 (21.3)	14 (21.5)	6 (20.7)
Index year, n (%)			
2024	39 (41.5)	24 (36.9)	15 (51.7)
2025	55 (58.5)	41 (63.1)	14 (48.3)
Received treatment at a community oncology practice, n (%)	72 (76.6)	51 (78.5)	21 (72.4)
History of smoking, n (%)	42 (44.7)	26 (40.0)	16 (55.2)
Median (IQR) time from initial NSCLC diagnosis to index date, years	2.42 (1.48–3.79)	2.00 (1.31–3.37)	3.55 (1.85–5.60)
Advanced/metastatic disease at diagnosis, n (%)	82 (87.2)	56 (86.2)	26 (89.7)
***EGFR* mutation, n (%)**			
Exon 19 deletion	54 (57.4)	37 (56.9)	17 (58.6)
Exon 21 L858R	40 (42.6)	28 (43.1)	12 (41.4)
Site of metastasis,[c] n (%)			
Bone	27 (28.7)	20 (30.8)	7 (24.1)
Brain	16 (17.0)	13 (20.0)	3 (10.3)
Liver	7 (7.4)	6 (9.2)	1 (3.4)
ECOG PS at index LOT start date, n (%)			
0	27 (28.7)	22 (33.8)	5 (17.2)
1	40 (42.6)	24 (36.9)	16 (55.2)
2	15 (16.0)	8 (12.3)	7 (24.1)
≥3	3 (3.2)	3 (4.6)	0
Unknown	9 (9.6)	8 (12.3)	1 (3.4)

[a]From index LOT start date to last confirmed structured activity. [b]Includes American Indian or Alaska Native and Native Hawaiian or Other Pacific Islander. [c]Patients may have >1 site of metastasis.
2L, second-line; 3L, third-line; ACP, amivantamab plus carboplatin and pemetrexed; ECOG PS, Eastern Cooperative Oncology Group performance status; EGFR, epidermal growth factor receptor; IQR, interquartile range; LOT, line of therapy; NSCLC, non-small cell lung cancer.

Treatment patterns

- Among 2L ACP patients, 89.2% received osimertinib monotherapy in the 1L; among 3L ACP patients, 55.2% received osimertinib monotherapy in the 1L and 41.4% received osimertinib monotherapy in the 2L
- Median duration of 1L treatment was 19.2 months (IQR, 13.3–31.0) for 2L ACP patients, and median durations of 1L and 2L treatments were 9.8 months (IQR, 3.7–21.9) and 13.1 months (IQR, 5.3–36.7), respectively, for 3L ACP patients
- The most common subsequent LOT for both 2L ACP and 3L ACP patients was datopotamab deruxtecan-dlnk (n=5 [7.6%] and n=4 [13.8%], respectively)
- 67.7% of 2L ACP patients and 75.9% of 3L ACP patients were still on treatment at the time of data cutoff (median follow-up, 6.4 and 5.2 months, respectively)

Dose modifications

- A total of 85 patients (58 2L ACP and 27 3L ACP patients) had a quantifiable starting dose, of whom 68 (80.0%) received a label-recommended starting dose (1750 mg or 1400 mg) at Week 1 (**Table 2**)
- Among these 85 patients, 61 (71.8%) reached Week 7 treatment, of whom 49 (80.3%) received a label-recommended starting dose (2100 mg or 1750 mg) at Week 7 (**Table 3**)

Table 2: Amivantamab starting dose Weeks 1–4

Starting dose, n (%)	Overall (n=85)	2L ACP (n=58)	3L ACP (n=27)
1750 mg	18 (21.2)	12 (20.7)	6 (22.2)
1400 mg	50 (58.8)	36 (62.1)	14 (51.9)
1051–1399 mg	3 (3.5)	3 (5.2)	0
1050 mg	6 (7.1)	2 (3.4)	4 (14.8)
<1050 mg	8 (9.4)	5 (8.6)	3 (11.1)

2L, second-line; 3L, third-line; ACP, amivantamab plus carboplatin and pemetrexed.

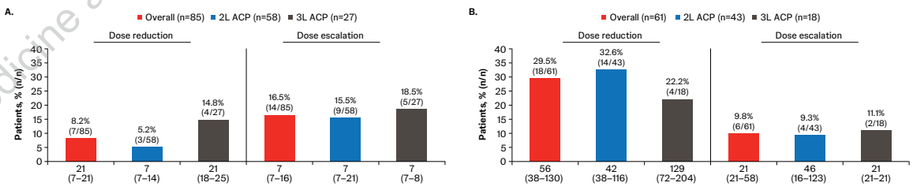
Table 3: Amivantamab starting dose Week 7 and onward

Starting dose, n (%)	Overall (n=61)	2L ACP (n=43)	3L ACP (n=18)
2100 mg	9 (14.8)	6 (14.0)	3 (16.7)
1750 mg	40 (65.6)	30 (69.8)	10 (55.6)
1400 mg	8 (13.1)	5 (11.6)	3 (16.7)
1050 mg	2 (3.3)	1 (2.3)	1 (5.6)
<1050 mg	2 (3.3)	1 (2.3)	1 (5.6)

2L, second-line; 3L, third-line; ACP, amivantamab plus carboplatin and pemetrexed.

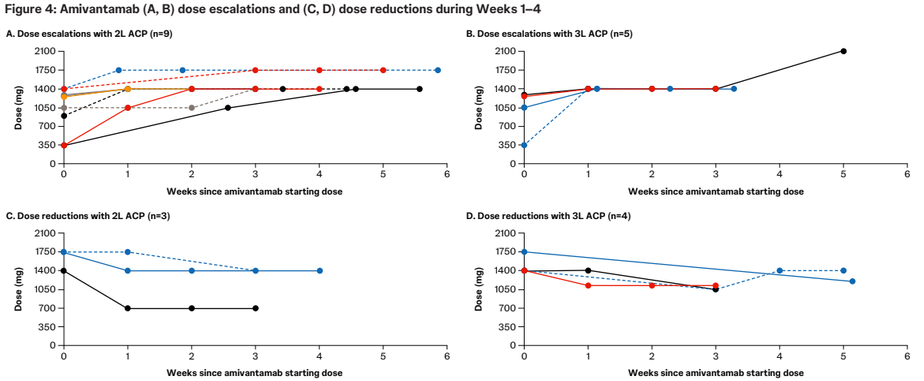
- Amivantamab dose modifications during Weeks 1–4 and Week 7 and onward are shown in **Figures 3–5**
  - Dose reductions were observed in 8.2% of patients during Weeks 1–4 and 29.5% of patients during Week 7 and onward
  - Dose escalations were observed in 16.5% of patients during Weeks 1–4 and 9.8% of patients during Week 7 and onward
- Among patients starting at a label-recommended starting dose, the distribution of starting dose was consistent with baseline weight distribution
- A total of 87 patients (60 2L ACP and 27 3L ACP patients) had a quantifiable pemetrexed starting dose, and 89 patients (61 2L ACP and 28 3L ACP patients) had a quantifiable carboplatin starting dose
- Among patients with a quantifiable starting dose:
  - Pemetrexed dose reductions were observed in 29.9% of patients, and carboplatin dose reductions were observed in 30.3% of patients
  - Pemetrexed dose escalations were observed in 14.9% of patients, and carboplatin dose escalations were observed in 34.8% of patients

Figure 3: Amivantamab dose modifications during (A) Weeks 1–4 or (B) Week 7 and onward



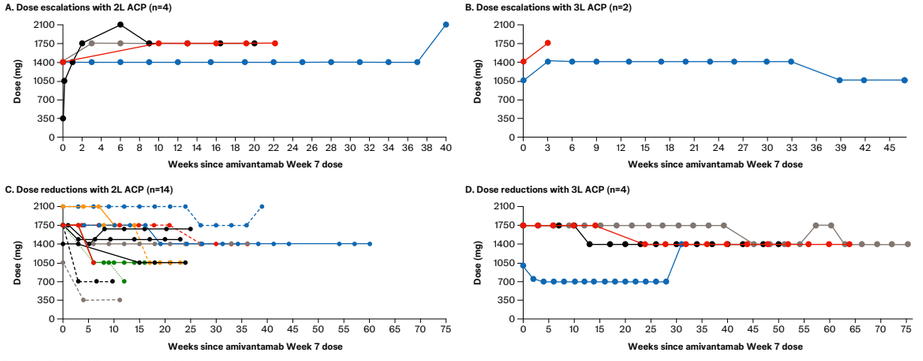
2L, second-line; 3L, third-line; ACP, amivantamab plus carboplatin and pemetrexed; IQR, interquartile range.

Figure 4: Amivantamab (A, B) dose escalations and (C, D) dose reductions during Weeks 1–4



2L, second-line; 3L, third-line; ACP, amivantamab plus carboplatin and pemetrexed.

Figure 5: Amivantamab (A, B) dose escalations and (C, D) dose reductions during Week 7 and onward



2L, second-line; 3L, third-line; ACP, amivantamab plus carboplatin and pemetrexed.

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Solid Tumors

Presented by S Seo at the World Conference on Lung Cancer (WCLC); September 12–15, 2026; Seoul, Republic of Korea.