# Amivantamab Plus Lazertinib vs Osimertinib in First-Line *EGFR*-Mutant Advanced NSCLC: Final Overall Survival From the Phase 3 MARIPOSA Study

James Chih-Hsin Yang<sup>1</sup>, Yu Jung Kim<sup>2</sup>, Se-Hoon Lee<sup>3</sup>, Baogang Liu<sup>4</sup>, Yurii Ostapenko<sup>5</sup>, Shun Lu<sup>6</sup>, Adlinda Alip<sup>7</sup>, Ernesto Korbenfeld<sup>a</sup>, Josiane Mourão Dias<sup>9</sup>, Pongwut Danchaivijitri<sup>10</sup>, Nicolas Girrard<sup>11</sup>, Enriqueta Felip<sup>12</sup>, Hidetoshi Hayashi<sup>13</sup>, Alexander I Spira<sup>14</sup>, Benjamin Besse<sup>15</sup>, Tao Sun<sup>16</sup>, Mariah Ennis<sup>17</sup>, Seema Sethi<sup>17</sup>, Joshua M Bauml<sup>17</sup>, Byoung Chul Cho<sup>18</sup> \*National Taiwan University Cancer Center, National Taiwan University Hospital, Taipei, Taiwan; \*Department of Hematology & Medical Oncology, Department of Internal Medicine, Seoul National University Bundang Hospital, Seongnam, Republic of Korea; \*Samsung Medical Center, Sungkyunkwan University School of Medicine, Seoul, Republic of Korea; \*Harbin Medical University Cancer Hospital, Harbin, China; \*China; \*Department of Medical Oncology, Shanghai Chest \*China; \*Department, Faculty of Medicine, University of Mania University Bundang Hospital for Seoul, Republic of Korea; \*Harbin Medical University Cancer Hospital, Harbin, China; \*China; \*Department of Medical Oncology, Shanghai Chest \*China; \*Department, Faculty of Medicine, University of Mania University \*Bundang Hospital of Buenos Aires, Central British Hospital, Buenos Aires, Argentina; \*Department of Medical Oncology, Barretos Cancer Hospital, Sao Paulo, Brazil; \*Division of Medical Oncology, Department of Medicine, Shiraj Hospital of Buenos Aires, Cantral British Hospital, Stangkok, Thailand; "Institut Curie, Paris, France; Paris Saclay University funiversity feed versailles Saint-Quentin-en-Yvelines, Versailles, France; \*Medicial Oncology Service Oncology, Villoj, Vall d'Hebron Barcelona, Spain; "Department of Medical Oncology, Kindai University Faculty of Medicine Oncology, Yonsei Cancer Specialists, Fairfax, VA, USA; \*\*Paris-Saclay University and Institut Gustave Roussy, Villejuif, France; \*\*Johnson & Johnson, & Johnson & Johnson, Spring House, PA, USA; \*\*Division of Medical Oncology, Yonsei Cancer Center, Yonsei University College of Medicine, Scoul, Republic of Korea

FIGURE 4: Participant disposition

# Background

- In MARIPOSA, first-line (1L) amivantamab + lazertinib significantly improved progression-free survival (PFS) vs osimertinib (Figure 1)<sup>12</sup>
- Amivantamab + lazertinib is approved for patients with 1L epidermal growth factor receptor (EGFR)-mutant advanced non-small cell lung cancer (NSCLC)<sup>34</sup>
- 1L amivantamab + lazertinib exhibits a triple mechanism of action with a reduction in the spectrum and complexity of acquired resistance (Figure 2)<sup>5</sup>
- Here, we report the protocol-specified final overall survival (OS) results of 1L amivantamab + lazertinib vs osimertinib from MARIPOSA

#### FIGURE 1: 1L amivantamab + lazertinib primary endpoint: PFS by BICR<sup>1,2</sup>



## FIGURE 2: Mechanism of action





EGFR, epidermal growth factor receptor; MET, mesenchymal-epithelial transiti

# Methods

- The study design of MARIPOSA can be seen in Figure 3
- OS was a key secondary endpoint with prespecified alpha to assess significance
- Protocol-specified final OS analysis was planned for when ~390 deaths had occurred in the amivantamab + lazertinib and osimertinib arms
- OS was tested with a 2-sided alpha of 0.05, determined by O'Brien-Fleming alpha spending approach as implemented by the Lan-DeMets method
- In the prespecified interim analysis, a 2-sided alpha of 0.005 was allocated for OS  $\,$
- The protocol-specified final analysis of OS was subsequently evaluated at a 2-sided significance level of 0.0484

#### FIGURE 3: Phase 3 MARIPOSA study design



MARPOSU, Clinical Trials govi learnings: The Vol4817080 percentance period: November 2020 to May 2022; clinical col-off: D4 December 2024. OS analysis was realuted by means of the Avalue generated from the stratified core strate, with d5 Refer Maratado trap, Adams, and Marato Yani metatasses as stratistical fractors. HRs and 958. Use we calculated using the stratified Core regression model with tratament as the sole explanatory variable. Design (in 28-day cycles) aminantamba: 1050 mg (M400 mg if ±80 kg) weekly for the first 4 weeks, there very 2 works, Larentike 240 mg adir), comistrike 30 mg adir). "MARPOSU Ad do to allow crossover as aminatamb-based regimens were nat approved in the 21. setting during MARPOSA exrollment." "Continued follows pipe jalmend to evaluate incoger normalization windi.

Az secondarmie, biot, binitizen independent en interven, ECOS 7 az absten ocoperative oncodegr andor per nimite status, cerve publiciti aground ractor receptor. Extorec econ 19 deletion; DicoB, ritratarial fautation of response; ORR, intracanal averali response ractarial progression-free survival, NRI, magnetic resonance imaging. NSCLC, non-small cell lung cancer; OS, overall survival; PS, progression-free survival; RECIST, Response Evaluation Criteria in Solid Tumors; TTSP, time to symptomatic progression.

#### Presented at the Hematology/Oncology Pharmacy Association (HOPA) Annual Conference; April 9-12, 2025; Portland, OR, USA. Reused with permission from the European Society for Medical Oncology (ESMO). This abstract was accepted and previously presented by Yang JCH, et al. at the European Lung Cancer Congress (ELCC) 2025, FPN (Final Publication Number): 40. All rights reserved.

# Results

#### Study population

- Participant disposition is presented in **Figure 4**
- Baseline characteristics were well balanced across both arms (Table 1)

#### TABLE 1: Baseline demographics<sup>1,2</sup>

| Characteristic, n (%)           | Amivantamab +<br>lazertinib (n=429) | Osimertinib<br>(n=429) |  |
|---------------------------------|-------------------------------------|------------------------|--|
| Median age, years (range)       | 64 (25-88)                          | 63 (28-88)             |  |
| Female                          | 275 (64)                            | 251 (59)               |  |
| Race                            |                                     |                        |  |
| Asian                           | 250 (58)                            | 0 (58) 251 (59)        |  |
| White                           | 164 (38)                            | 165 (38)               |  |
| Other®                          | 15 (3)                              | 13 (3)                 |  |
| ECOG PS 1                       | 288 (67)                            | 280 (65)               |  |
| History of smoking              | 130 (30)                            | 134 (31)               |  |
| History of brain metastases     | 178 (41) 172 (40)                   |                        |  |
| EGFR mutation type <sup>b</sup> |                                     |                        |  |
| Ex19del                         | 258 (60)                            | 257 (60)               |  |
| L858R                           | 172 (40)                            | 172 (40)               |  |
| Adenocarcinoma subtype          | 417 (97)                            | 415 (97)               |  |

\*One patient in the amivantamab + lazertinib arm had both Ex18del and L858R. ECOG PS, Eastern Cooperative Oncology Group performance status; EGFR, epidermal growth factor receptor; Ex18del, exon 19 deletion.

## Efficacy

- OS was significantly longer with amivantamab + lazertinib (Figure 5)
- OS curves continue to widen over time with a projected >1-year median OS benefit
- Based on an exponential distribution assumption of OS in both arms, the improvement in median OS is projected to exceed 1 year
- A generally consistent OS benefit for amivantamab + lazertinib over osimertinib was observed across predefined subgroups (Figure 6)
- The most common subsequent therapy class was chemotherapy-based regimens in both arms (Figure 7)
- 74% of participants received second-line therapy, suggesting a long-term treatment plan after IL amivantamab + lazer tinib is feasible
  Amivantamab + lazer tinib demonstrated a
- clinically meaningful improvement in intracranial PFS (icPFS) with durable responses (**Figure 8**)
- 3-year landmark icPFS was 36% vs 18% for amivantamab + lazertinib vs osimertinib
- Amivantamab + lazertinib demonstrated greater durability of response, with improved intracranial duration of response (icDoR) vs osimertinib (Figure 9)
- Symptomatic progression is a patient-relevant endpoint that measures time from randomization to the onset of new/worsening lung cancer symptoms requiring a change in therapy, clinical intervention, or death based on investigator discretion



#### Safety

- Median duration of treatment was 27.0 months for amivantamab + lazertinib and 22.4 months for osimertinib
- Safety profile was consistent with the primary analysis (Table 2)<sup>1</sup>
- Adverse events (AEs) were mostly EGFR- and MET-related and grades 1–2<sup>16</sup>
- A minority of participants were prescribed antibiotics for rash (21%) at study initiation<sup>6</sup>
- Few were on anticoagulation (5%) at baseline,<sup>6</sup> with venous thromboembolism occurring in 40% in the anivantamab + lazertinib arm and 11% in the osimertinib arm

## TABLE 2: Safety

| AEs by preferred term<br>(≥20% of participants<br>in either group) | Amivantamab +<br>lazertinib (n=4 <u>21)</u> |          | Osimertinib<br>(n=428) |          |
|--|---|----------|------------------------|----------|
|  | Any grade                                   | Grade ≥3 | Any grade              | Grade ≥3 |
| Related to EGFR inhibit  | ion   |          |                        |          |
| Paronychia   | 291 (69)                                    | 49 (12)  | 127 (30)               | 2 (<1)   |
| Rash   | 271 (64)                                    | 73 (17)  | 136 (32)               | 3 (<1)   |
| Diarrhea   | 133 (32)                                    | 9 (2)    | 200 (47)               | 4 (<1)   |
| Dermatitis acneiform   | 127 (30)                                    | 37 (9)   | 55 (13)                | 0        |
| Stomatitis   | 126 (30)                                    | 5 (1)    | 92 (21)                | 1 (<1)   |
| Pruritus   | 107 (25)                                    | 2 (<1)   | 75 (18)                | 1 (<1)   |
| Related to MET inhibiti  | on  | -        |                        |          |
| Hypoalbuminemia  | 216 (51)                                    | 26 (6)   | 29 (7)                 | 0        |
| Peripheral edema   | 162 (38)                                    | 8 (2)    | 29 (7)                 | 1 (<1)   |
| Other  |   |          |                        |          |
| Infusion-related reaction  | 275 (65)                                    | 27 (6)   | 0                      | 0        |
| ALT increased  | 170 (40)                                    | 28 (7)   | 66 (15)                | 8 (2)    |
| AST increased  | 139 (33)                                    | 15 (4)   | 68 (16)                | 6 (1)    |
| Constipation   | 130 (31)                                    | 0        | 70 (16)                | 0        |
| COVID-19   | 125 (30)                                    | 8 (2)    | 112 (26)               | 9 (2)    |
| Anemia   | 114 (27)                                    | 20 (5)   | 112 (26)               | 10 (2)   |
| Decreased appetite   | 114 (27)                                    | 4 (1)    | 84 (20)                | 7 (2)    |
| Nausea   | 99 (24)                                     | 5 (1)    | 65 (15)                | 1 (<1)   |
| Hypocalcemia   | 96 (23)                                     | 11 (3)   | 37 (9)                 | 0        |
| Asthenia   | 84 (20)                                     | 13 (3)   | 54 (13)                | 7 (2)    |
| Muscle spasms  | 84 (20)                                     | 3 (<1)   | 36 (8)                 | 0        |
|  | i   | i        | i                      |          |

- Most first onset AEs occur early (0–4 months), with longer-term follow-up showing no new safety signals and indicating that long-term treatment is feasible (Figure 11)
- Early onset AEs can be reduced using simple and accessible preventive approaches (**Figure 12**)





ase; IO, immun



FIGURE 8: icPFS<sup>a</sup>

Median icPF3 (95% Cil)

REFERENCES:

1. Cho BC, et al. N Engl J Med. 2024;391(16):1486–1498. 2. Cho BC, et al. Presented at: European Society for Medical Oncology (ESMO) Congress; October 20-24, 2023; Madrid, Spain. 3. RYBREVANT® (anivantamab-vmjw) injection for intravenous use [package insert]. Horsham, PA: Janssen Biotech, Inc; 2025. 4. Johnson & Johnson. European Commission approves LA2CUL2Fe (lazertinib) in combination with RYBREVANT® (anivantamab) for the first-line treatment of patients with EGFR-mutated advanced non-small cell lung cancer. January 21, 2025. Accessed January 27, 2025. Therefore, Harshim-terefore there of the set of patients with EGFR-mutated advanced non-small cell lung cancer. January 21, 2025. Accessed January 27, 2025. Therefore, Harshim-terefore there of the set of the

# Key takeaway



Patients live longer with 1L amivantamab + lazertinib, with MARIPOSA demonstrating practice-changing superior OS vs osimertinib and extending median survival beyond 3 years

# Conclusions



1L amivantamab + lazertinib led to a statistically significant and clinically meaningful reduction in mortality vs osimertinib (HR, **0.75**; P<0.005) in participants with previously untreated *EGFR*-mutant advanced NSCLC

- A >12-month median OS benefit is projected for amivantamab + lazertinib vs osimertinib; based on an exponential distribution assumption of OS in both arms, the improvement in median OS is projected to exceed 1 year
- 60% of participants were alive at 3 years in the amivantamab + lazertinib arm vs 51% for osimertinib; benefit continued at 42-months with survival rates of 56% and 44%, respectively



Twice as many participants receiving amivantamab + lazertinib were intracranially progression-free at 3 years (36% vs 18%) with a longer icDoR vs osimertinib (35.7 vs 29.6 months) among participants with a history of brain metastases



Amivantamab + lazertinib delayed the time to a participant experiencing symptoms from their lung cancer by a median of >14 months (time to symptomatic progression; P<0.001)

AEs with 1L amivantamab + lazertinib occurred early; prophylactic interventions have now been shown to substantially **reduce the incidence of these key AEs** (dermatologic AEs, infusion-related reactions, and VTE)

#### Acknowledgments

We thank the individuals who participated in these studies and their families and caregivers, the physicians and nurses who cared for the participants, the staff members who supported this clinical trial, and the staff members at the study sites and involved in data collection/malyses. This study was funded by Janssen Research & Development, LLC, a Johnson & Johnson

#### Disclosures

John resched lowering from Beeringer Ingelenin, Riche Merck Bang & Dohme, AttraZences, Morentis, British Myers Sogikh, Oto Pharmaeuticki, Takata Sur, Alexanov, Michael Sand, Sono Pharmaeuticki, Takata Sur, Markanes, Michael Sand, Sono, Takata Sur, Sono, Takata Sur, Sono, Takata Sur, Sono, Takata Sur, Sono, Sono



Lung Cancer