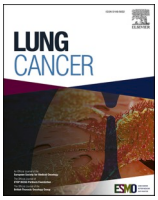
Lung Cancer 199 (2025) 108066

Contents lists available at ScienceDirect

Lung Cancer

journal homepage: www.elsevier.com/locate/lungcan



FURVENT: Phase 3 trial of firmonertinib vs chemotherapy as first-line treatment for advanced NSCLC with EGFR exon 20 insertion mutations (FURMO-004)

Alexander Spira [a], Byoung Chul Cho [b], Enriqueta Felip [c], Edward B. Garon [d], Koichi Goto [e], Melissa Johnson [f], Natasha Leighl [g], Antonio Passaro [h], David Planchard [i], Sanjay Popat [j], James Chih-Hsin Yang [k], Xiaoqian Lu [l], Yong Jiang [l], Jack Huang [m], Morgan Lam [m], Marcin Kowanetz [m], Shirley Wang [m], John Le [m,*], Jerry Y. Hsu [m], Cai-Cun Zhou [n]

[a] *Virginia Cancer Specialists Research Institute and Next Oncology, Fairfax, VA, United States*
[b] *Division of Medical Oncology, Yonsei Cancer Center, Yonsei University of Medicine, Seoul, Republic of Korea*
[c] *Vall d'Hebron University Hospital and Vall d'Hebron Institute of Oncology, Barcelona, Spain*
[d] *David Geffen School of Medicine, Division of Hematology and Oncology, UCLA, Los Angeles, CA, United States*
[e] *National Cancer Center Hospital East, Kashiwa, Japan*
[f] *Sarah Cannon Research Institute, Nashville, TN, United States*
[g] *Cancer Research Unit, Princess Margaret Cancer Centre, Toronto, Ontario, United States*
[h] *Division of Thoracic Oncology, European Institute of Oncology IRCCS, Milan, Italy*
[i] *Institut Gustave Roussy, Department of Medical Oncology, Villejuif, France*
[j] *The Royal Marsden, NHS Foundation Trust, London, United Kingdom*
[k] *National Taiwan University Hospital, Taipei, Taiwan*
[l] *Allist Pharmaceuticals, Shanghai, China*
[m] *ArriVent Biopharma, Burlingame, CA, United States*
[n] *Shanghai Pulmonary Hospital, Shanghai, China*

ARTICLE INFO

Keywords:
Exon 20 insertions
EGFR
EGFR-TKI
Furmonertinib
Firmonertinib
Metastatic
Advanced
Ex20ins

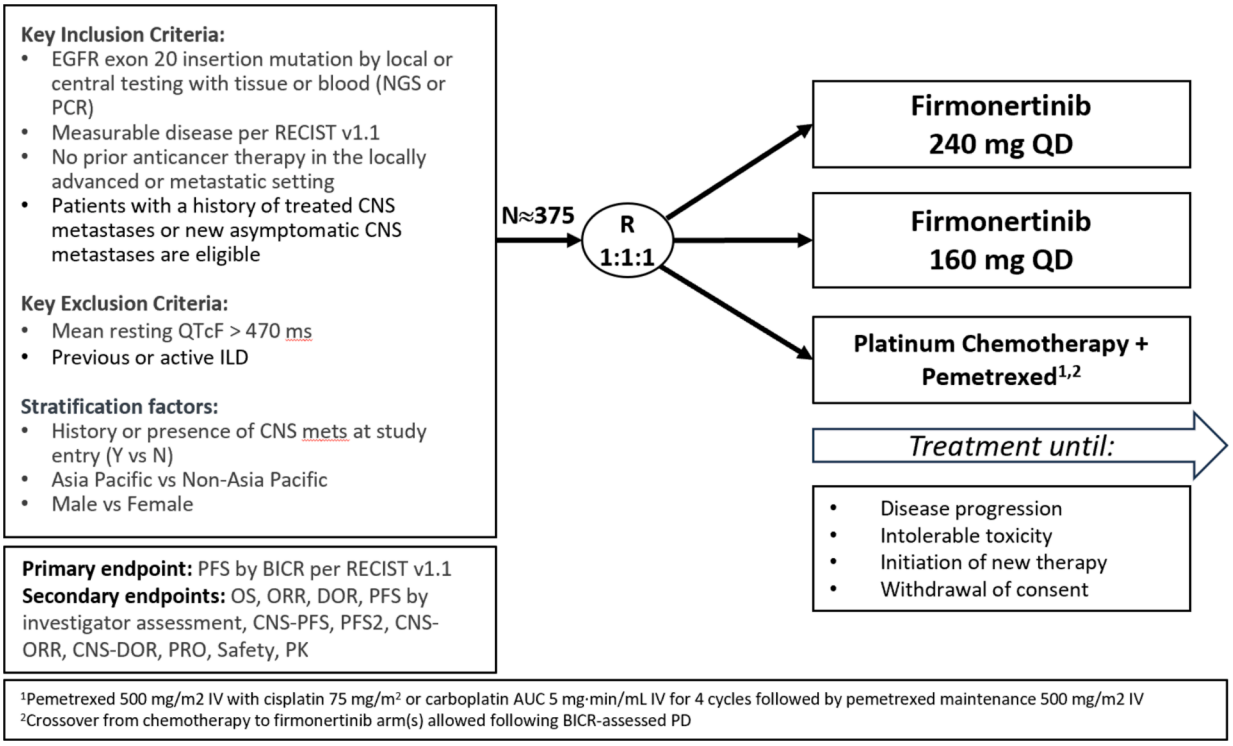
1. Introduction

Epidermal growth factor receptor (EGFR) exon 20 insertion mutations (ex20ins) occur in approximately 2 % of non-small cell lung cancer (NSCLC) and overall account for approximately 9 % of all the EGFR mutations in NSCLC (Robichaux et al 2021). The current first-line standard of care for NSCLC patients with these mutations is infusion of amivantamab plus carboplatin plus pemetrexed (NCCN Version 11.2024). However, there remains a need for an effective and well-tolerated chemotherapy-free treatment option for these patients. Firmonertinib (also known as furmonertinib) is a once-daily, oral, highly brain penetrant, and broadly active mutant-selective EGFR tyrosine kinase inhibitor (TKI) that targets both classical and uncommon mutations including PACC and EGFR exon 20 insertion mutations (Musib et al., NACLC poster presentation, Sep 23–25, 2022). Firmonertinib received FDA Breakthrough Therapy Designation for the first-line treatment of patients with advanced non-squamous NSCLC with EGFR ex20ins based on results from the Phase 1b FAVOUR trial in which 240 mg QD

* Corresponding author.

https://doi.org/10.1016/j.lungcan.2024.108066
Received 8 December 2024; Accepted 17 December 2024
Available online 28 December 2024

firmonertinib was well-tolerated and led to a confirmed ORR of 78.6 % by BICR and preliminary mDOR of 15.2 months (Han et al 2023). Firmonertinib showed a generally acceptable profile with expected EGFR-TKI class toxicities.



2. Methods

The FURVENT (FURMO-004; NCT05607550) study is a registrational, global, phase 3, randomized, multicenter, open-label study. Eligible patients have treatment-naïve, locally advanced or metastatic non-squamous NSCLC with documented EGFR exon 20 insertion mutations and measurable disease per RECIST 1.1. Key exclusion criteria include mean resting QTcF $>$ 470 ms and previous or active ILD. Approximately 375 patients will be randomized 1:1:1 to receive firmonertinib 160 mg QD, firmonertinib 240 mg QD, or platinum-based chemotherapy (cisplatin or carboplatin plus pemetrexed for 4 cycles followed by pemetrexed maintenance therapy). Stratification factors include the history or presence of central nervous system metastases at baseline, geographic region, and sex at birth. Patients from the platinum-based chemotherapy arm with documented disease progression may be eligible to crossover to the firmonertinib arm(s). The primary endpoint is progression-free survival comparing between the treatment arms (firmonertinib 160 mg or 240 mg vs chemotherapy) based on BICR assessment. The key secondary endpoint is overall survival. Study enrollment is ongoing in countries including Australia, Brazil, Canada, China, France, Israel, Italy, Japan, South Korea, Malaysia, Mexico, Netherlands, Philippines, Singapore, Spain, Taiwan, Thailand, United Kingdom, and the United States.

CRediT authorship contribution statement

Alexander Spira: Conceptualization, Writing – review & editing. **Byoung Chul Cho:** Writing – review & editing. **Enriqueta Felip:** Writing – review & editing. **Edward B. Garon:** Writing – review & editing. **Koichi Goto:** Writing – review & editing. **Melissa Johnson:** Writing – review & editing. **Natasha Leighl:** Writing – review & editing. **Antonio Passaro:** Writing – review & editing. **David Planchard:** Writing – review & editing. **Sanjay Popat:** Writing – review & editing. **James Chih-Hsin Yang:** Writing – review & editing. **Xiaoqian Lu:** Writing – review & editing. **Yong Jiang:** Writing – review & editing. **Jack Huang:** Writing – review & editing. **Morgan Lam:** Writing – review & editing. **Marcin Kowanetz:** Conceptualization, Writing – review & editing. **Shirley Wang:** Writing – review & editing. **John Le:** Writing – original draft. **Jerry Y. Hsu:** Writing – review & editing. **Cai-Cun Zhou:** Writing – review & editing.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.