

P3.251: Real-world clinical characteristics and treatment patterns of epidermal growth factor receptor-mutant non-small cell lung cancer: a nationwide Korean EGFR Registry

Myeong Geun Choi¹, Chang Dong Yeo², Seung Hun Jang³, Seung Joon Kim⁴

¹Department of Pulmonary and Critical Care Medicine, Asan Medical Center, University of Ulsan College of Medicine, ²Division of Pulmonary, Critical Care and Sleep Medicine, Department of Internal Medicine, Eunpyeong St. Mary's Hospital, College of Medicine, Catholic University of Korea, ³Division of Pulmonary, Allergy and Critical Care Medicine, Department of Internal Medicine, Hallym University Sacred Heart Hospital, Hallym University College of Medicine, ⁴Division of Pulmonology, Department of Internal Medicine, Seoul St. Mary's Hospital, Catholic University of Korea

Correspondence: Seung Hun Jang, chestor@hallym.or.kr; Seung Joon Kim, cmcksj@catholic.ac.kr

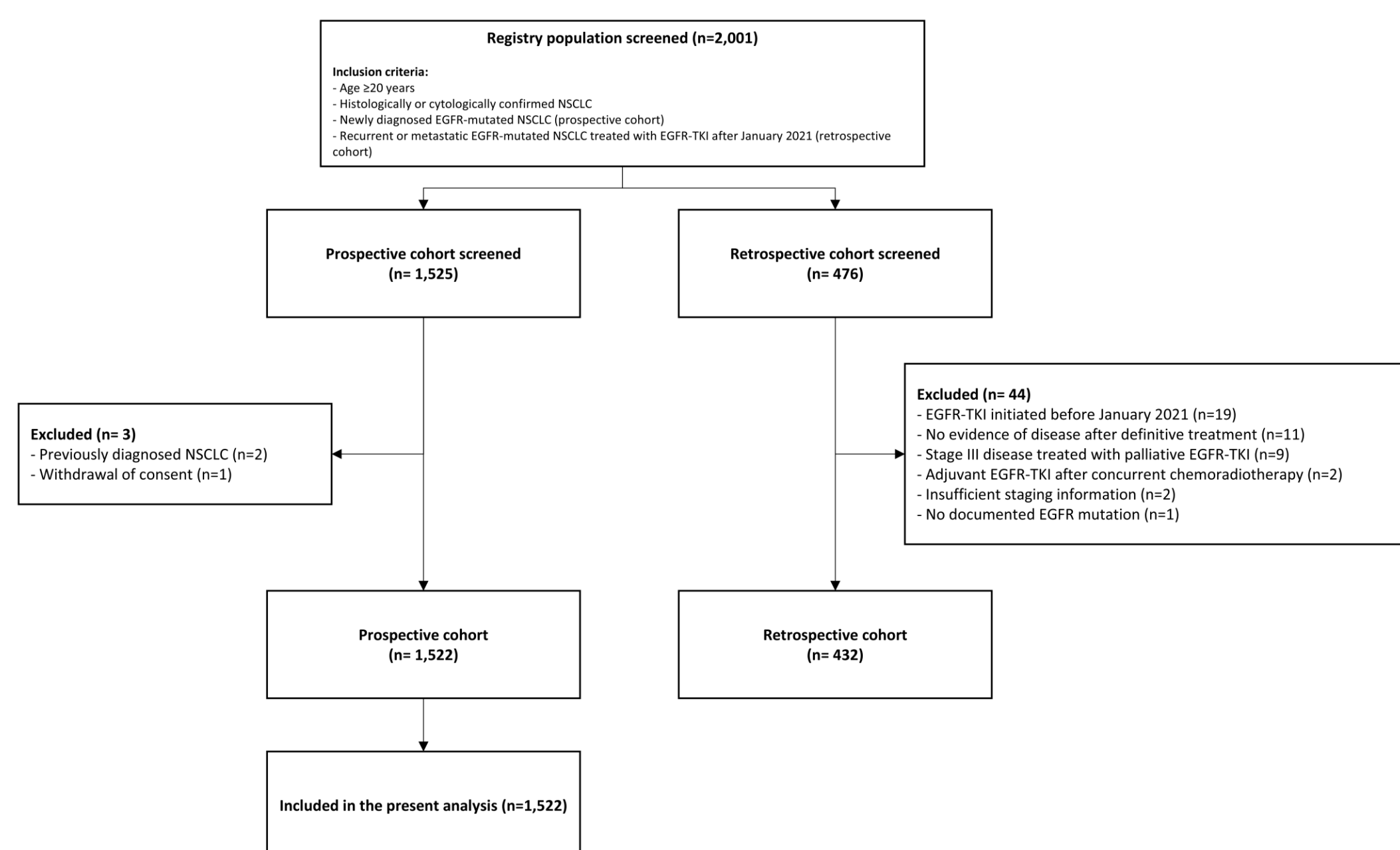
INTRODUCTION

- Despite advances in epidermal growth factor receptor (EGFR)-targeted therapy for non-small cell lung cancer (NSCLC), real-world data on diagnostic and treatment patterns across all disease stages remain limited.
- This study used the nationwide Korean EGFR Registry to characterize contemporary clinical practice in EGFR-mutant NSCLC.

METHODS

- Design: Ongoing, nationwide, multicenter cohort across 40 Korean institutions; prospectively and retrospectively enrolled EGFR-mutant NSCLC patients.
- Population: 1,522 prospectively enrolled patients (June 2022–June 2024), pathologically confirmed EGFR-mutant NSCLC, age ≥20 years.
- Data collection: Standardized electronic case report forms captured baseline clinical/molecular characteristics, biomarker testing patterns, and treatment across all lines of therapy.

Figure 1. Study flow diagram of the Korean EGFR Registry



RESULTS

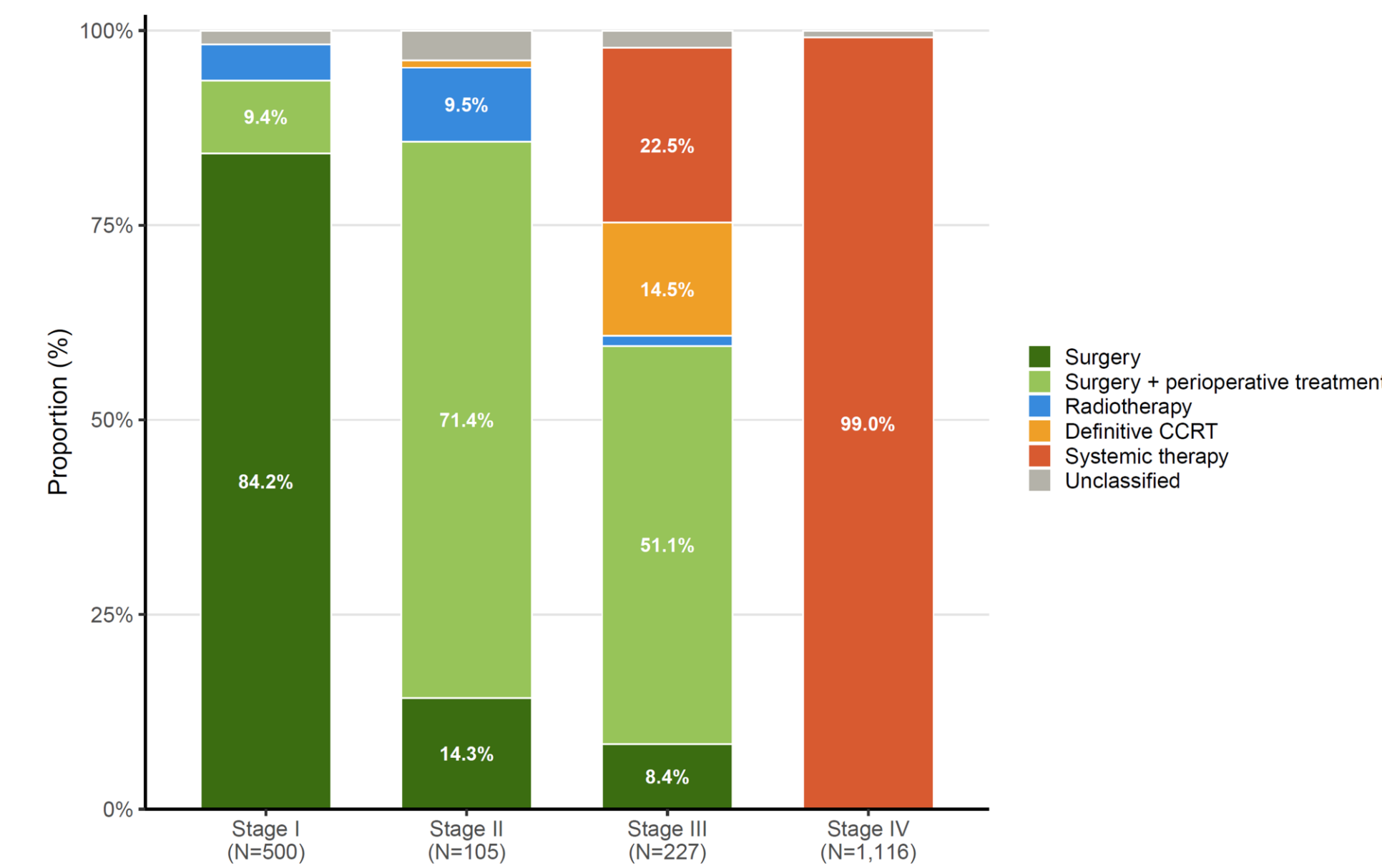
- The median age of the study population was 68 years, 59.7% were female, and 64.5% were never-smokers. Stage IV disease accounted for 57.8% of cases. Adenocarcinoma accounted for 96.8% of cases.
- EGFR mutation subtype: exon 19 deletion (48.6%) and L858R (47.1%) together comprised ~95% of mutations; no significant difference by metastatic status. (**Table 1**)
- Uncommon mutations: T790M 2.4%, G719X 2.2%, L861Q 1.6%, exon 20 insertion 1.1%.

Table 1. Genetic alteration analysis of the study population by stage

Genetic alteration	Study patients (N = 1,522)	Nonmetastatic NSCLC (0–III) (n = 643)	Metastatic NSCLC (IV) (n = 879)
EGFR mutation			
Exon 18			
G719X	33 (2.2%)	16 (2.5%)	17 (1.9%)
Others	0 (0.0%)	0 (0.0%)	0 (0.0%)
Exon 19			
E19del	740 (48.6%)	298 (46.3%)	442 (50.3%)
Others	1 (0.1%)	1 (0.2%)	0 (0.0%)
Exon 20			
T790M	36 (2.4%)	13 (2.0%)	23 (2.6%)
E20ins	17 (1.1%)	11 (1.7%)	6 (0.7%)
S768I	9 (0.6%)	4 (0.6%)	5 (0.6%)
C797S	1 (0.1%)	0 (0.0%)	1 (0.1%)
Others	3 (0.2%)	2 (0.3%)	1 (0.1%)
Exon 21			
L858R	717 (47.1%)	310 (48.2%)	407 (46.3%)
L861Q	24 (1.6%)	10 (1.6%)	14 (1.6%)
Others	2 (0.1%)	0 (0.0%)	2 (0.2%)
Others	1 (0.1%)	0 (0.0%)	1 (0.1%)
Other molecular profiles			
ALK fusion	19 (1.2%)	9 (1.4%)	10 (1.1%)
ROS1 fusion	13 (0.9%)	6 (0.9%)	7 (0.8%)
IHC positive for PD-L1 expression (n = 1,419)			
<1%, n (%)	693 (48.8%)	357 (59.0%)	336 (41.3%)
1%–49%, n (%)	535 (37.7%)	204 (33.7%)	331 (40.7%)
≥50%, n (%)	191 (13.5%)	44 (7.3%)	147 (18.1%)

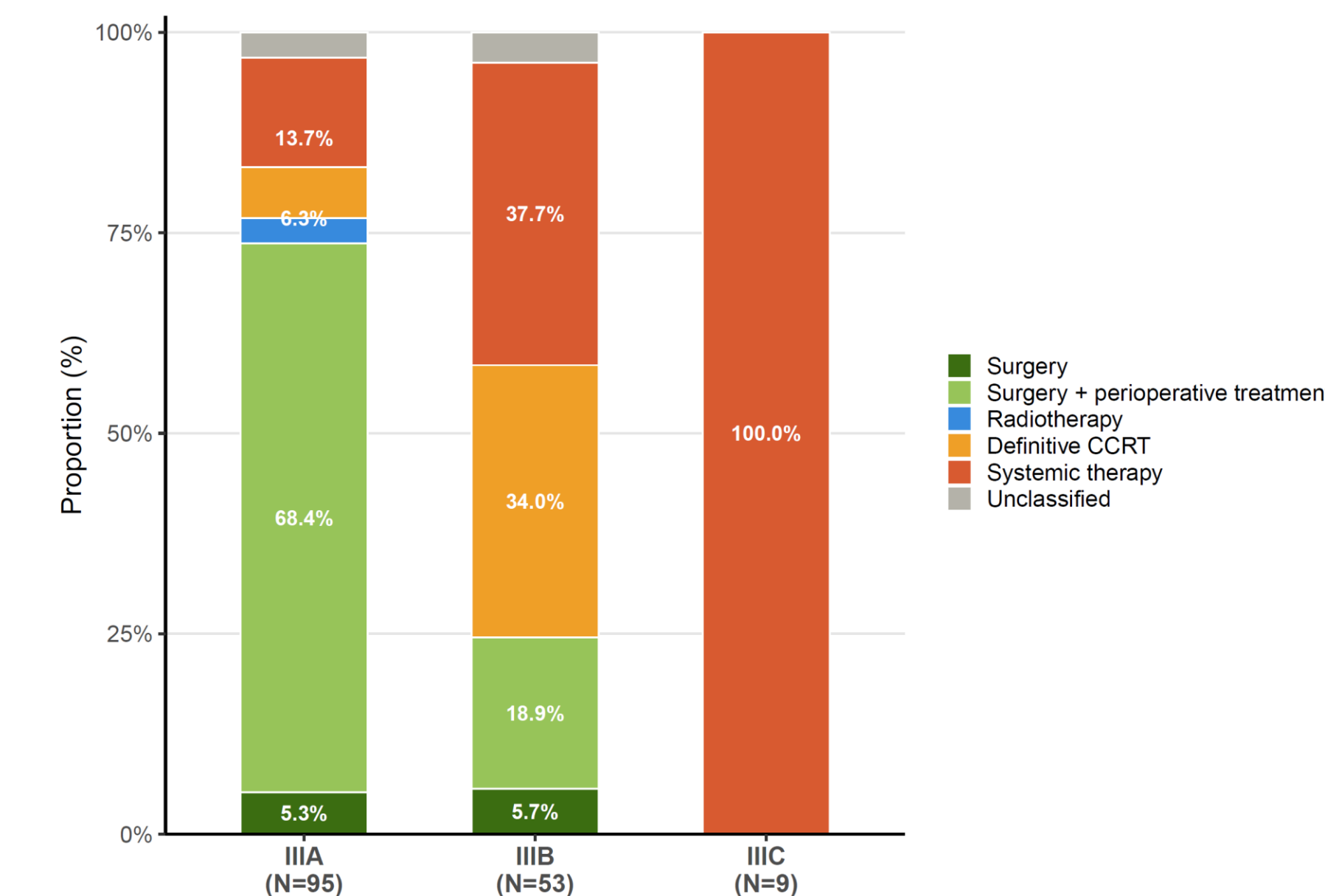
- Initial treatment differed substantially by stage. Surgical resection, with or without perioperative treatment, was the primary approach in stage I (93.3%) and stage II (84.1%) disease. (**Figure 2**)

Figure 2. Initial treatment pattern for the study population by disease stage



- Stage III was heterogeneous: surgery-based 52.9%, definitive CCRT only 15.3%, systemic therapy 26.8% — surgery predominated in IIIA (73.7%), while systemic therapy and CCRT predominated in IIIB. (**Figure 3**)
- Among stage III surgical patients, adjuvant chemotherapy (40.0%) was the leading perioperative strategy, followed by chemotherapy + osimertinib (16.0%) and osimertinib alone (14.7%).

Figure 3. Initial treatment pattern for the study population with stage III disease



- In patients with stage IV disease, third-generation TKI use increased markedly (14.3% in 2022 vs. 91.1% in 2024). (**Figure 4**)
- The 3-year overall survival rates were 97.2%, 90.9%, 78.3%, and 58.4% for stages I–IV, respectively. (**Figure 5**)

Figure 4. Distribution of first-line EGFR TKIs in advanced NSCLC. (A) Distribution by stage. (B) Distribution according to year of diagnosis of stage IV disease.

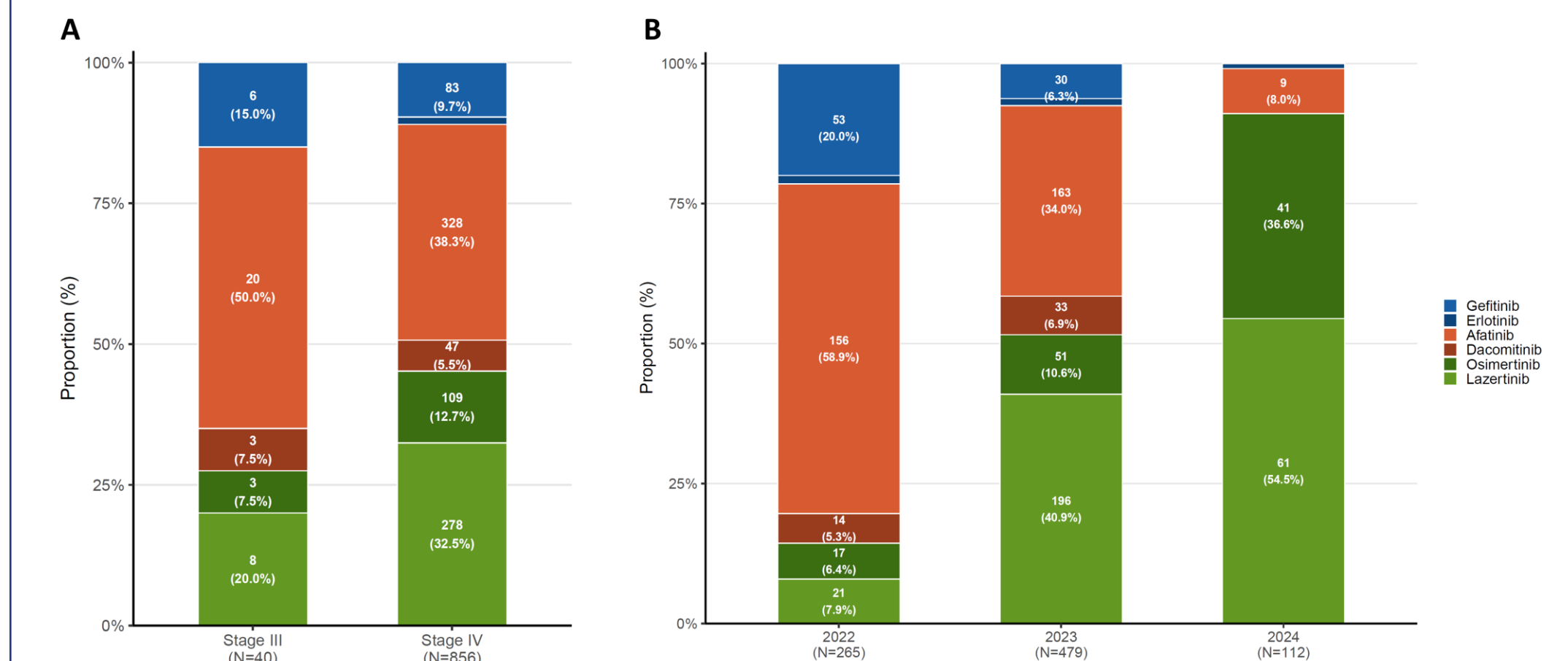
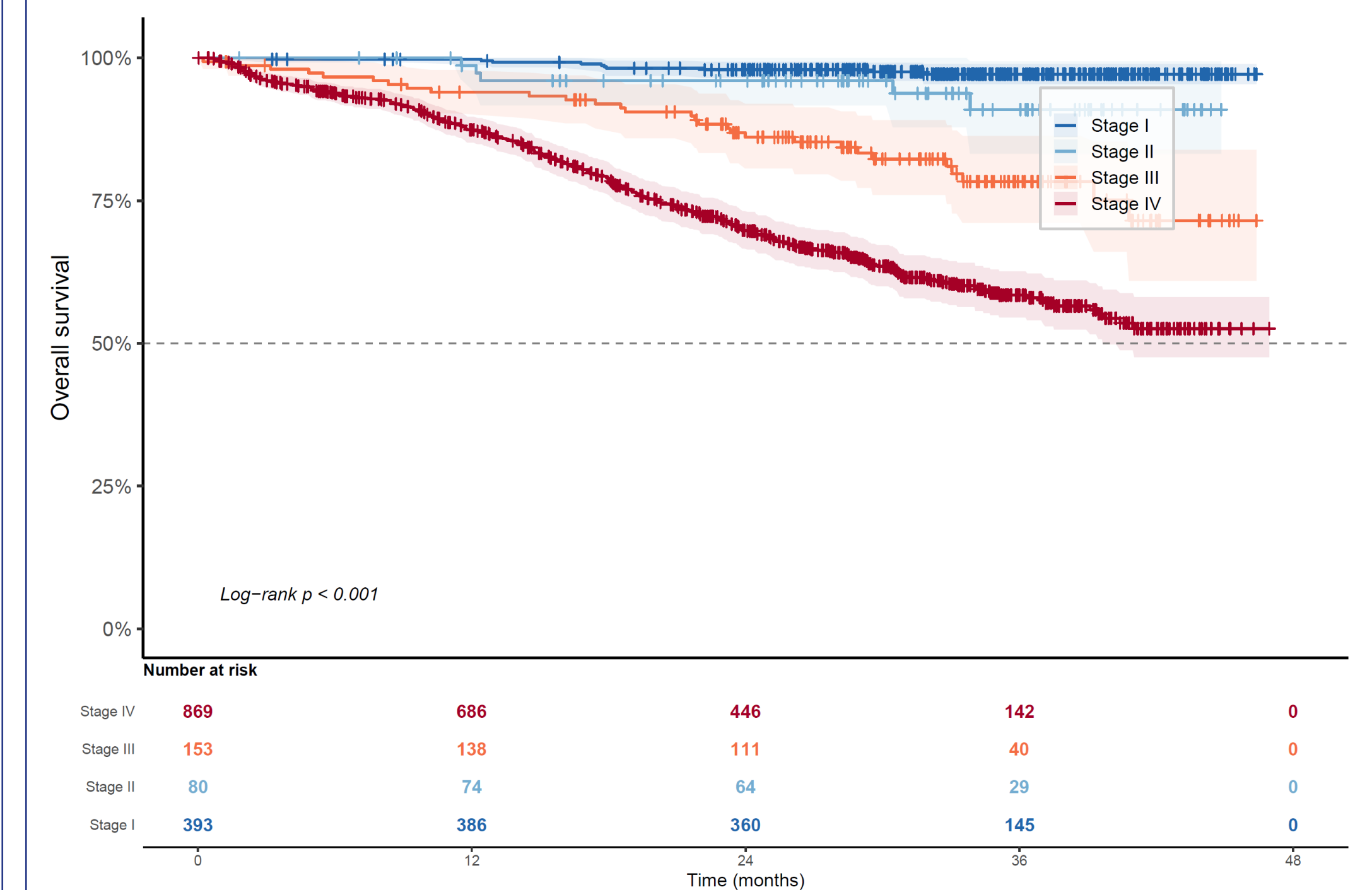


Figure 5. Kaplan–Meier curves of overall survival by stage



CONCLUSION

- The Korean EGFR Registry provides a contemporary nationwide snapshot of real-world EGFR-mutant NSCLC across all disease stages. Third-generation EGFR TKIs have rapidly become the predominant first-line treatment for metastatic disease, while stage III management remains heterogeneous and increasingly individualized. These findings demonstrate the rapidly evolving treatment landscape of EGFR-mutant NSCLC in routine clinical practice.

ACKNOWLEDGEMENTS

Funding: This study is sponsored by Yuhan Corporation.