

Introduction

- Epidermal growth factor receptor (EGFR) mutations are the commonest driver alterations in Asian patients with non-small cell lung cancer (NSCLC).
- However, real-world data on clinical characteristics, treatment patterns, and outcomes from resource-limited settings are scarce.
- We present our institutional experience managing EGFR-mutated NSCLC at a tertiary care cancer centre in South India.

Methodology

-Retrospective study from a tertiary care cancer centre in South India
-**January 2017 – December 2021**
-Followed up till March 2026
-All lung cancer patients were screened; those with an EGFR mutation were included.
-Clinical characteristics, treatment details, and survival outcomes were captured

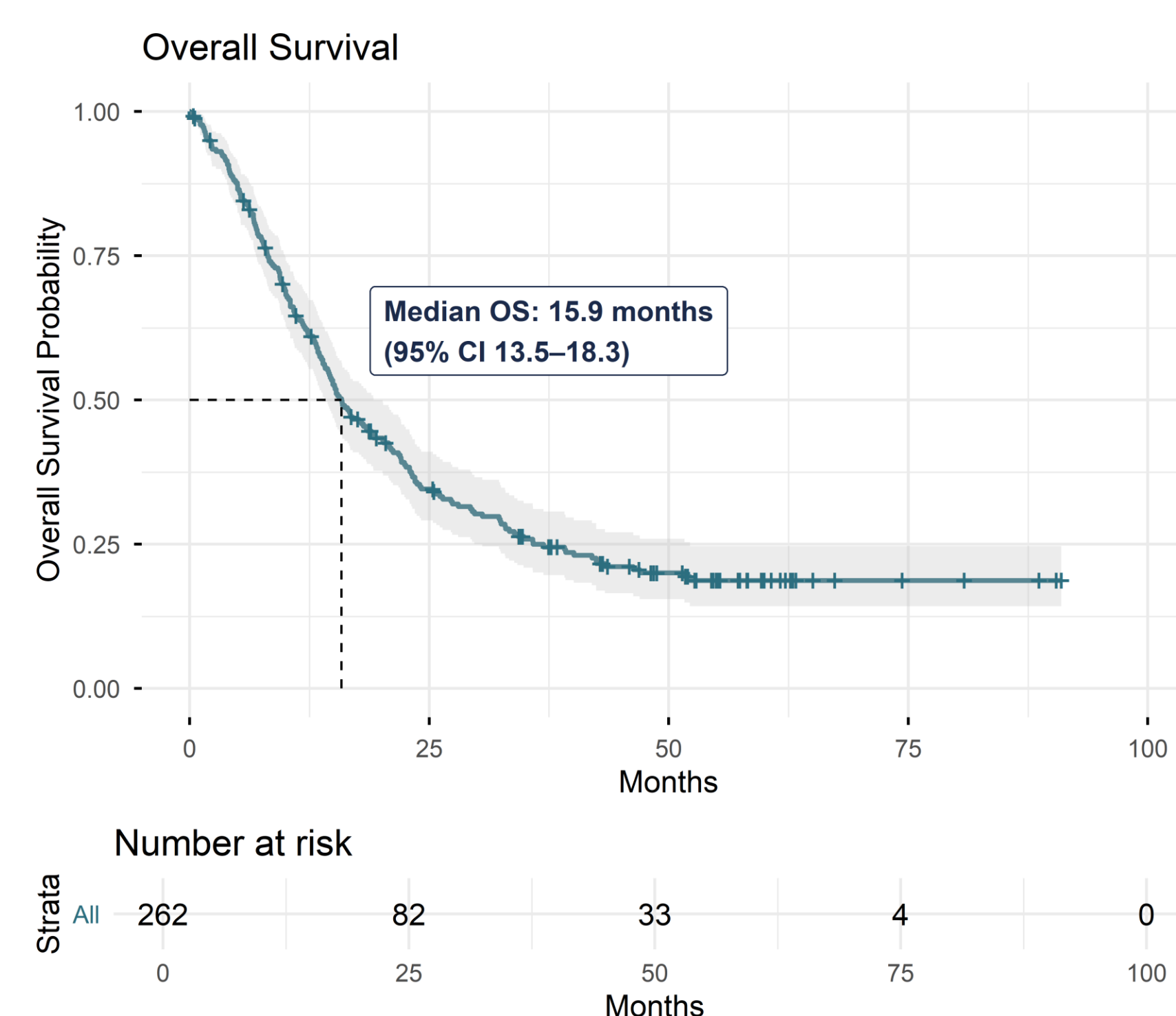
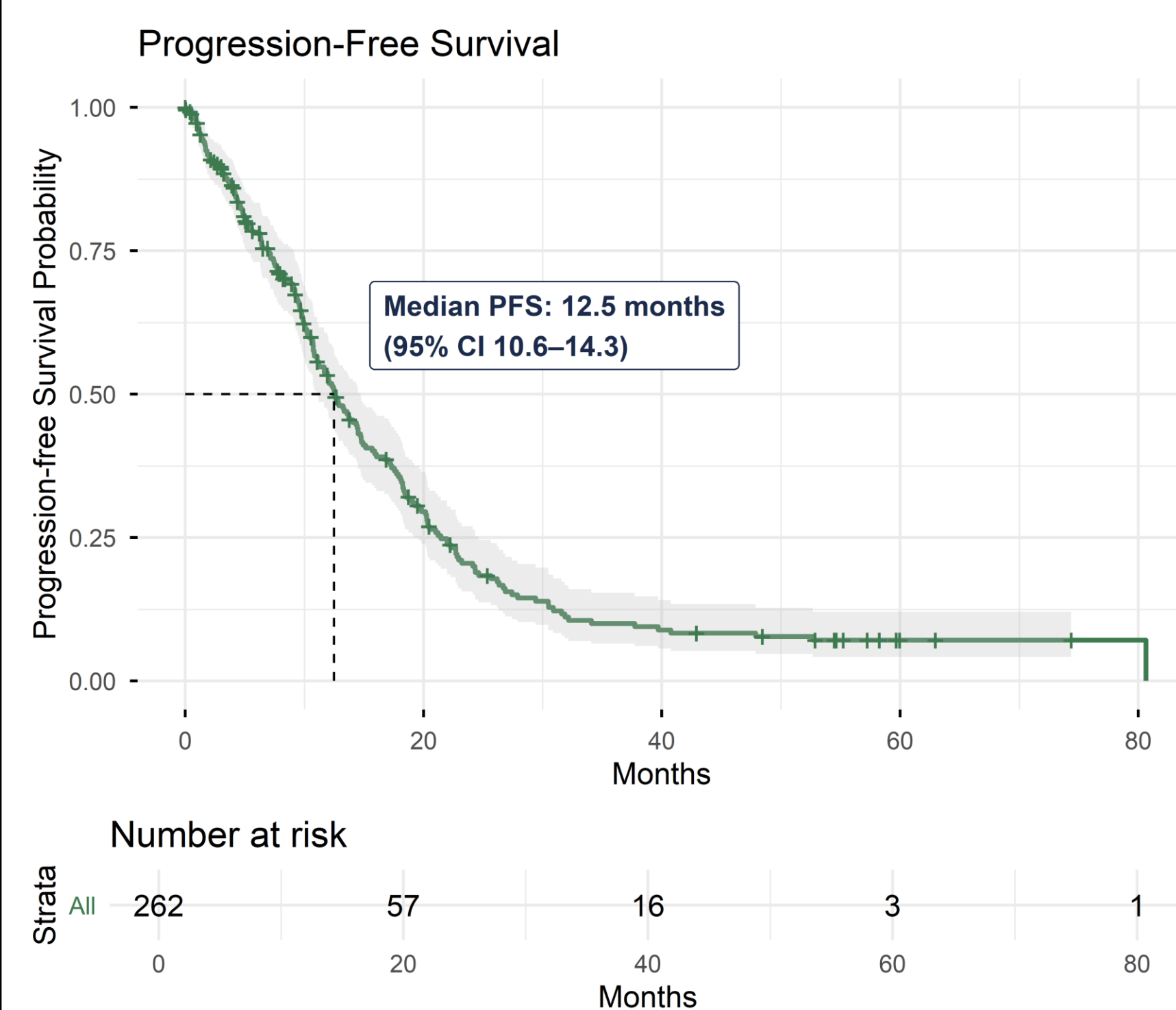
-**Primary endpoint:** Overall survival (OS) of EGFR-mutant NSCLC from a tertiary care centre in South India

-**Secondary endpoints:** To assess the demographic profile, treatment patterns, progression-free survival (PFS), and factors affecting the overall survival.

866 lung cancer patients screened
Driver-alteration testing available in 536 NSCLC
263 EGFR-mutation positive (49.1%)

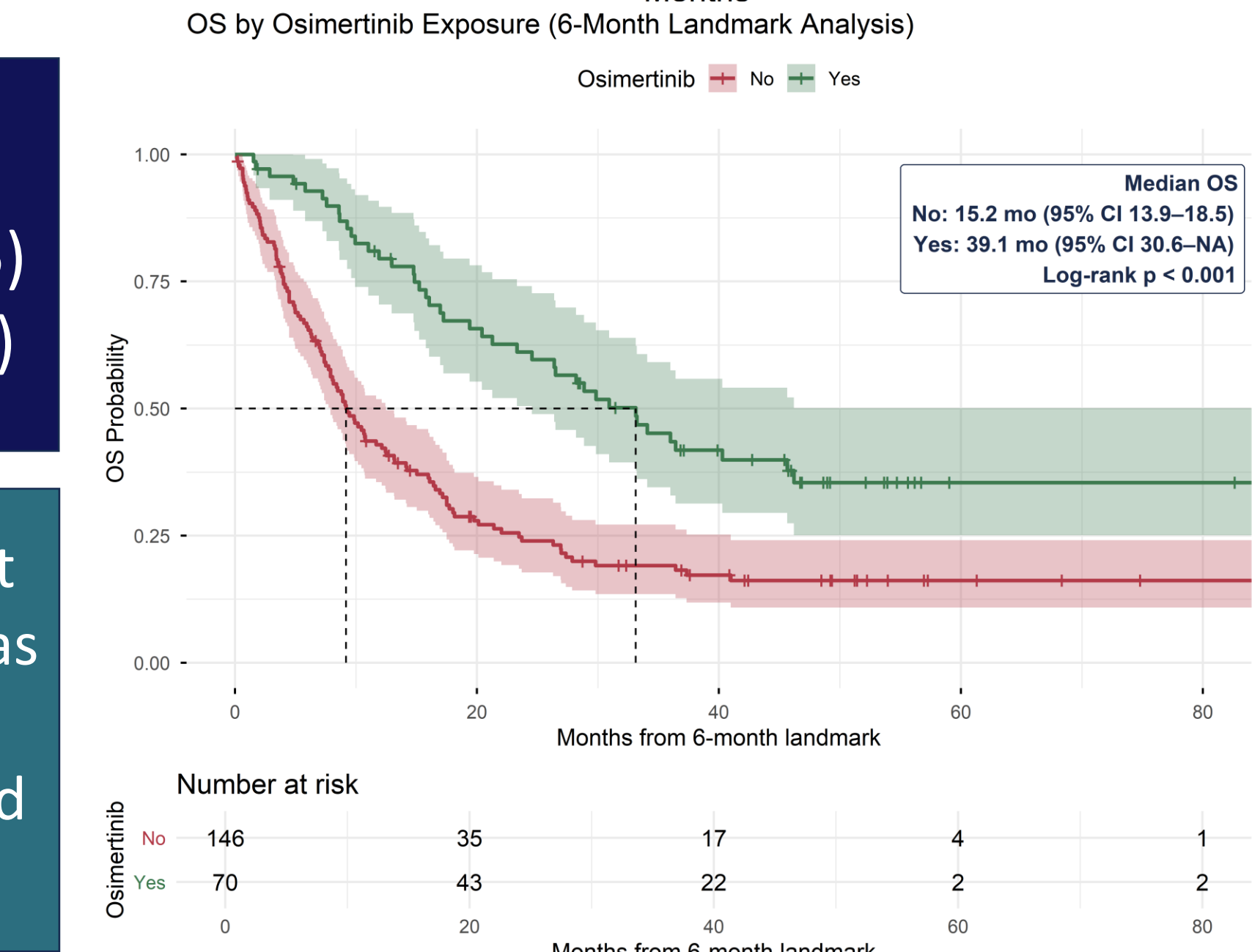
Baseline Characteristics

Mean Age (SD), y	56.8 (±11.2)	Histopathology	
Male	124 (47.1%)	- Adenocarcinoma	243 (92.4%)
Female	139 (52.9%)	- Squamous cell ca	13 (4.9%)
		- Others	7 (2.7%)
Never-smoker	208 (79.1%)	Upfront metastatic sites	
Ever-smoker	55 (20.9%)	Bone metastasis	142 (60.2%)
		Brain metastasis	50 (21.2%)
		Adrenal metastasis	23 (8.9%)
		Liver metastasis	41 (15.6%)
Stage – I/II	4 (1.6%)	Testing modality	260 (98.9%) /
Stage – III	23 (8.7%)	PCR / NGS	3 (1.1%)
Stage – IV	236 (89.4%)		



EGFR Exon-19 deletion vs Exon-21 L858R
Median PFS – 13.7 vs 10.6 months (p=0.235)
Median OS – 19.0 vs 13.9 months (p=0.131)

Landmark analysis restricted to patients alive at 6 months (n=216); Osimertinib status assessed as of the landmark. Median OS shown is from original treatment start; log-rank test performed on landmark-restricted follow-up time



Results

EGFR Mutation Type

Exon-19 deletion – 163 (62.0%)
Exon-21 L858R – 73 (27.8%)
Both 19 & 21 – 7 (2.7%)
Other EGFR – 19 (7.2%)

Median lines of therapy – 1 (1-6)

1st line TKI

1st generation – 218 (83.2%)
2nd generation – 5 (1.9%)
3rd generation – 16 (6.1%)
No TKI – 23 (8.8%)

Median Follow-up	Median PFS1	Median OS
54.6 months (95% CI 51.5–57.8)	12.5 months (95% CI 10.6 – 14.3)	15.9 months (95% CI 13.5 – 18.3)

Variable	Category	Multivariate HR (95% CI)	P-value
Gender	Male (ref)	1.00	–
	Female	0.93 (0.65–1.32)	0.669
Smoking	No (ref)	1.00	–
	Yes	1.00 (0.65–1.54)	0.992
Stage Group	I/II (ref)	1.00	–
	III	1.48 (0.35–6.19)	0.589
	IV	0.58 (0.12–2.76)	0.492
1st-line TKI Generation	No TKI (ref)	1.00	–
	1st	1.02 (0.30–3.45)	0.970
	2nd	1.34 (0.46–3.90)	0.585
	3rd	1.23 (0.22–6.85)	0.814
Osimertinib in any line	No (ref)	1.00	–
	Yes	0.34 (0.23–0.51)	<0.001
EGFR Type	Exon 19 (ref)	1.00	–
	Other	1.21 (0.87–1.68)	0.258

Liquid biopsy for T790M resistance testing done in 68 patients – positive in 30 patients (44.4%); 25 of those took Osimertinib, though all were offered

1st line treatment given

Tyrosine kinase inhibitors (TKI)	160 (60.8%)
Palliative chemo + TKI	65 (24.7%)
Palliative chemotherapy	9 (3.4%)
Surgery +/- chemo/TKI	6 (2.3%)
Chemo-radiotherapy +/- TKI	17 (6.5%)
Others	6 (2.3%)

Tissue biopsy at progression was done in 12 patients; 1 had small-cell transformation

Osimertinib in any line used only in 76 patients (29.0%)

Conclusion

- **EGFR mutations are highly prevalent** in this South Indian NSCLC population (49.1% of driver-tested patients), with **exon-19 deletion the most common subtype** (62.0%)
- Most patients present with **advanced-stage disease** (89.4% Stage IV) and are treated with **first-generation TKIs** (83.2%), with **limited access to subsequent lines of therapy**
- No significant difference in PFS or OS between Exon-19 deletion & Exon-21 L858R, the two most common EGFR alterations
- **Osimertinib exposure** (in any line) was **independently associated with improved OS** on multivariate analysis (benefit confirmed after accounting for immortal time bias via the 6-month landmark analysis)
- However, **less than 1/3rd of the patients received Osimertinib**, highlighting a substantial gap in access to optimal targeted therapy in a resource-limited setting