

INTRODUCTION

- Molecular testing is increasingly integral to guiding targeted therapies in lung cancer.
- However, the clinical impact of comprehensive genomic profiling versus limited, cost-effective molecular panels remains underexplored in real-world settings from developing countries

METHODS

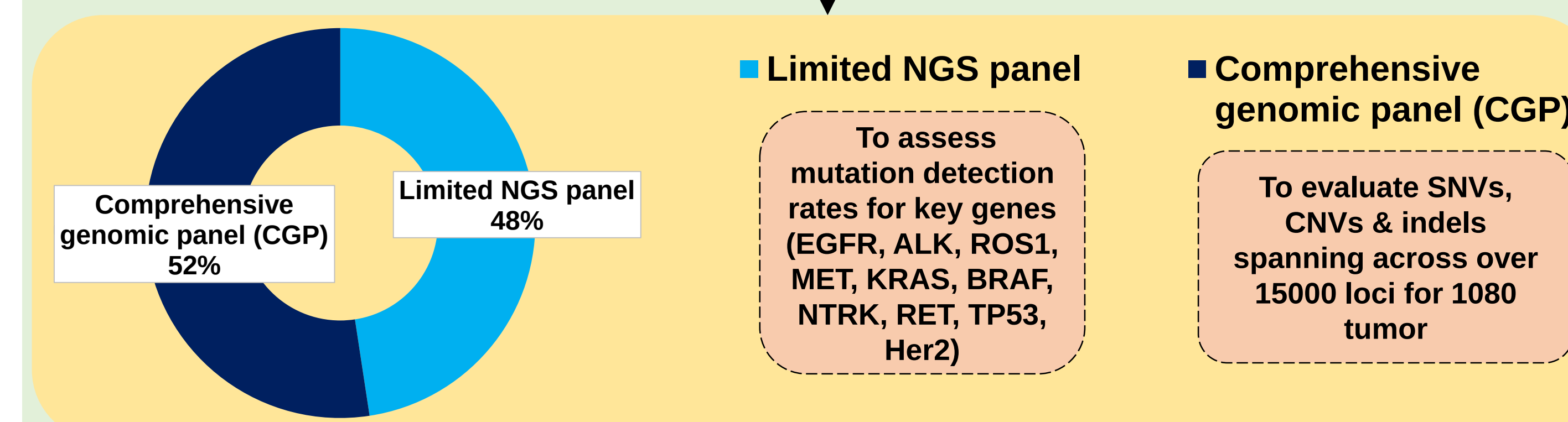
- This retrospective study included consecutive lung cancer patients treated at community oncology centers in Western India between March 2018 - December 2025.
- Molecular testing modalities, mutational profiles and frequency were extracted from electronic medical records. Survival outcomes were analyzed using the Kaplan-Meier method

RESULTS

Total lung cancer patients: N=3080

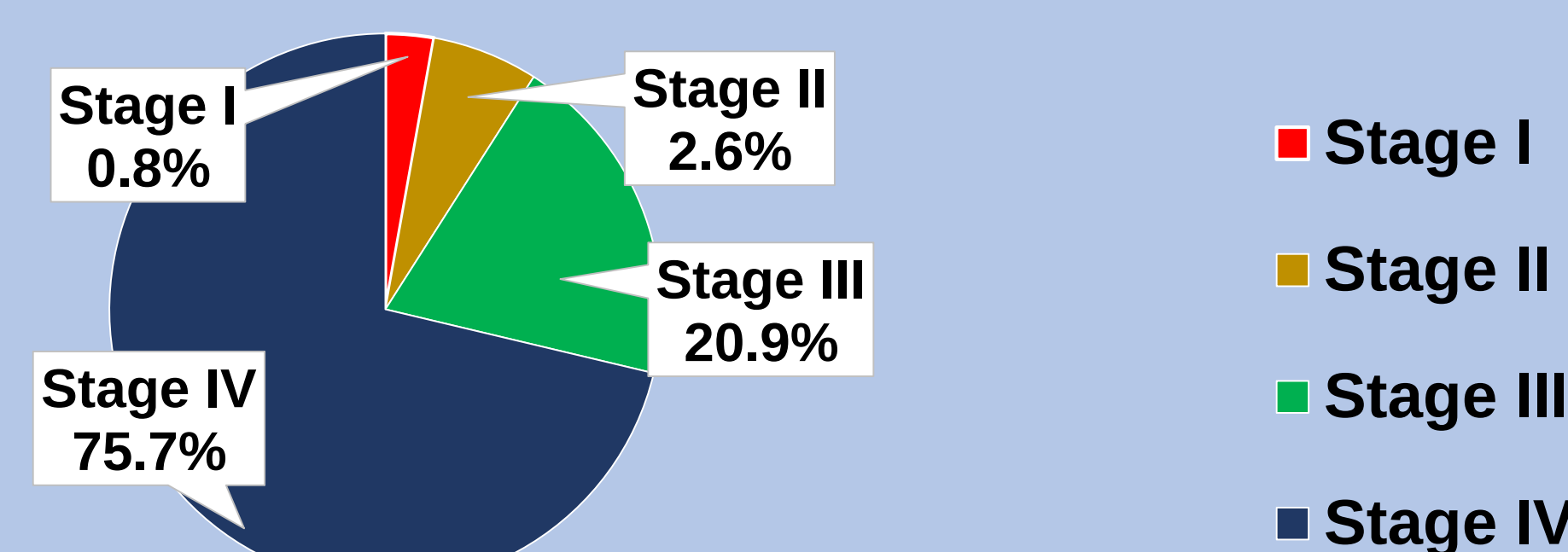
Molecular testing done: 61.1%, 1882/3080

NGS constituted: 57.7% 1085/1882

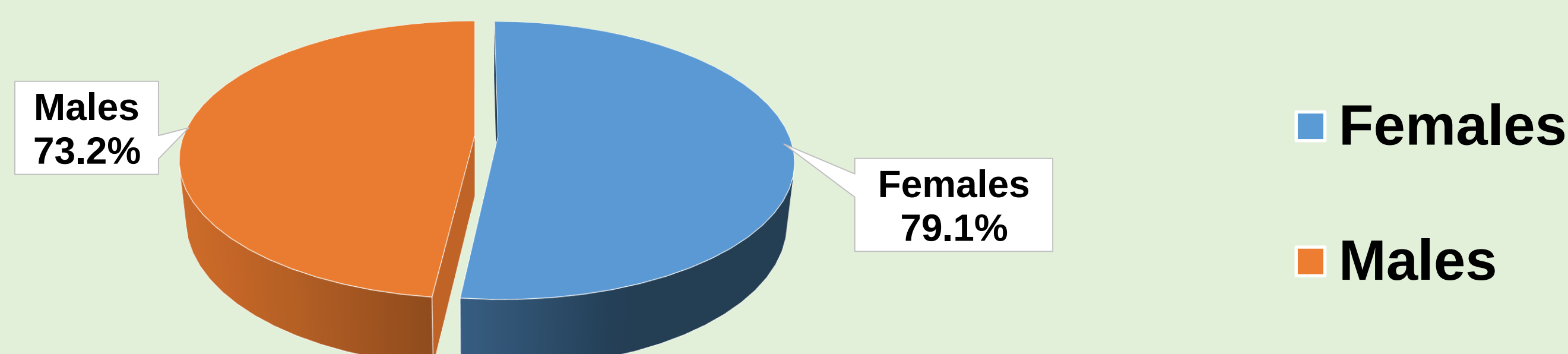


Descriptive details

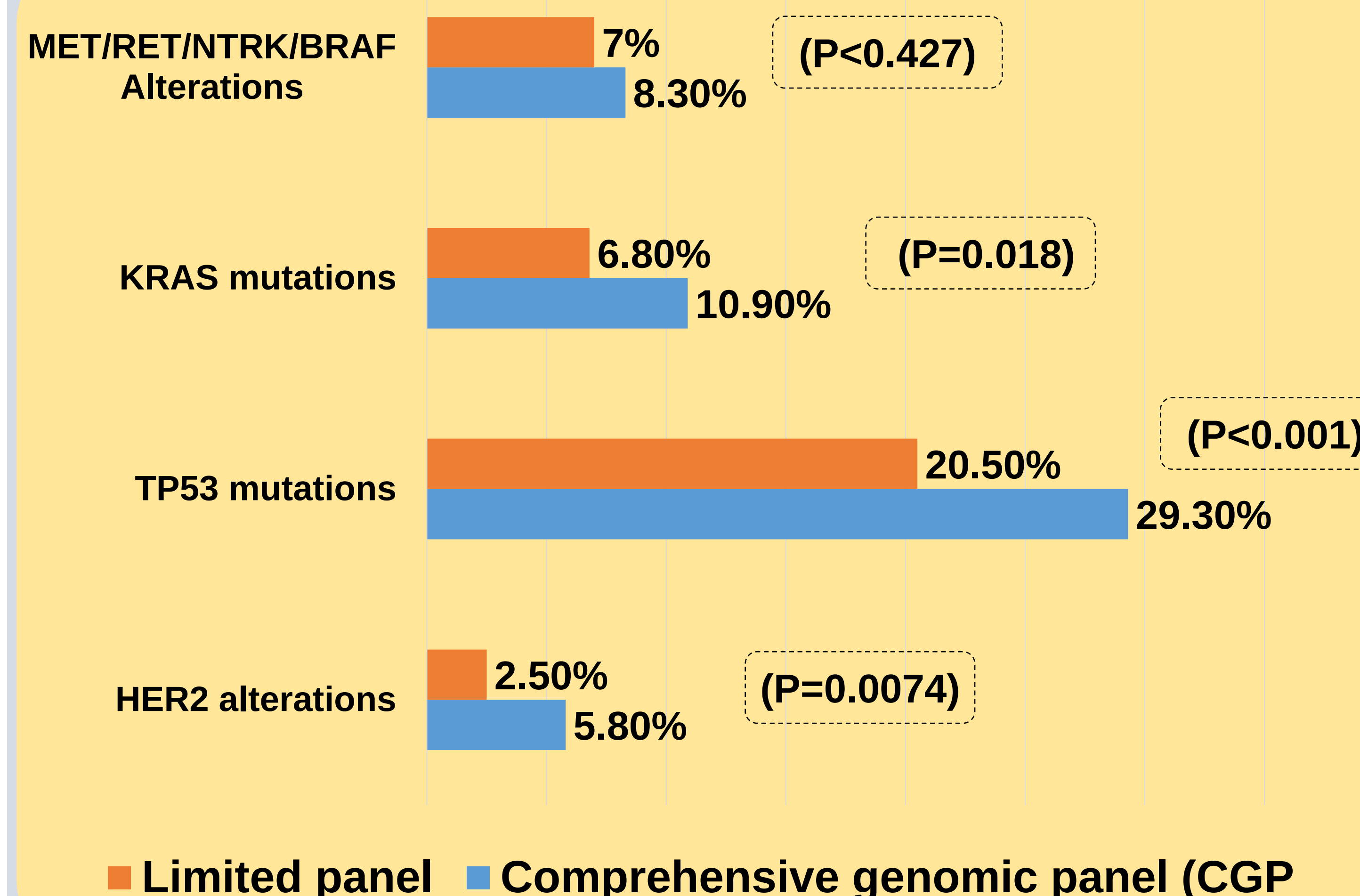
- Median age: 65 years (IQR 57-73)
- NSCLC: 97.2% → Adenocarcinoma: 81.1%
- Stage distribution



Prevalence of identified mutations (75.7%, n=821) among Males and Females



Mutational differences observed between Comprehensive genomic panel (CGP) vs Limited panel

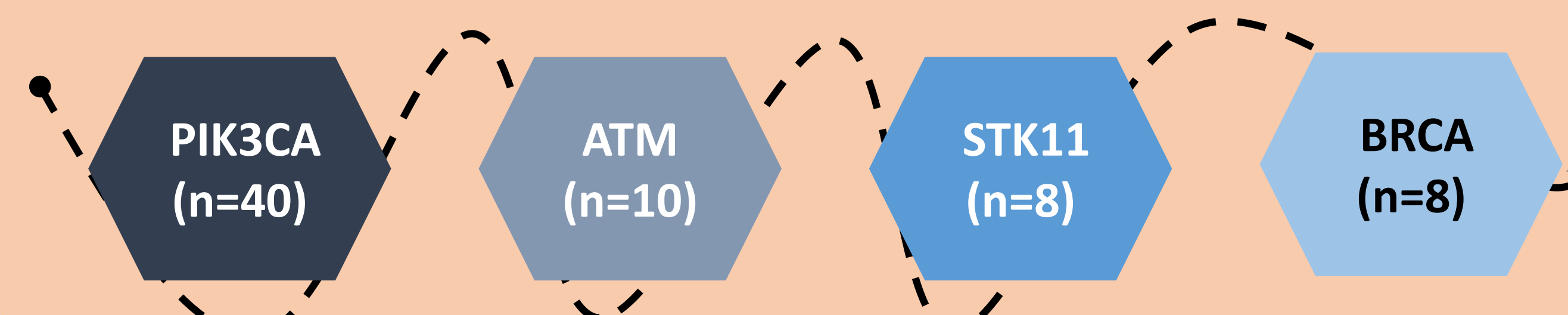


Rare mutations identified

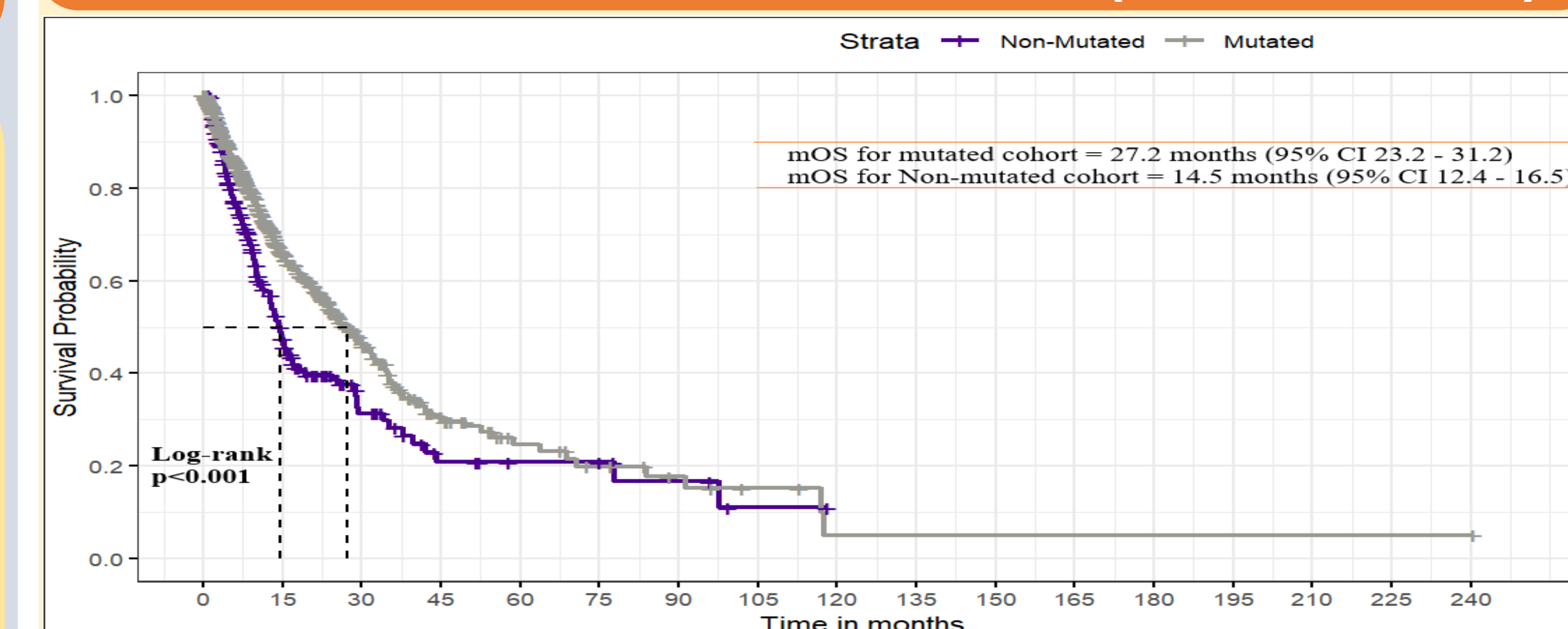
Comprehensive genomic panel: 21.8%, 124/569

Limited panel: 6.2%, 32/516

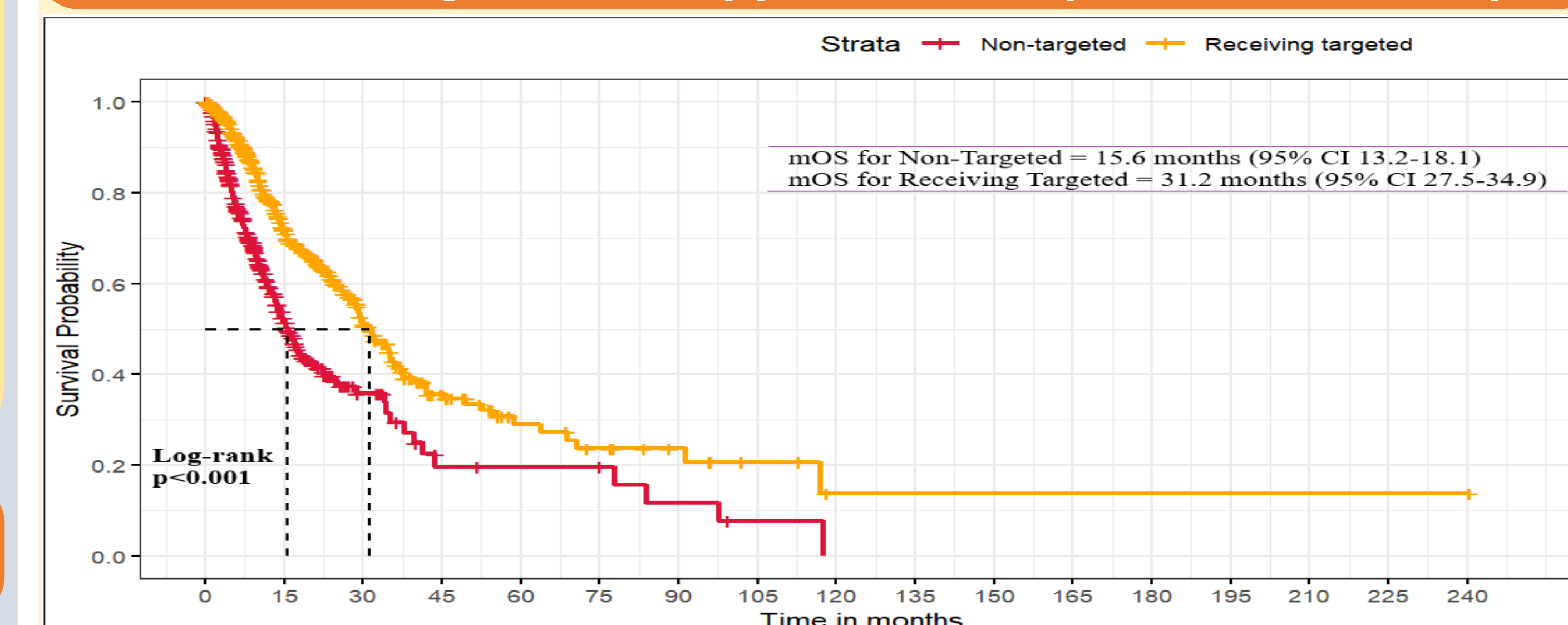
Most frequently reported alterations



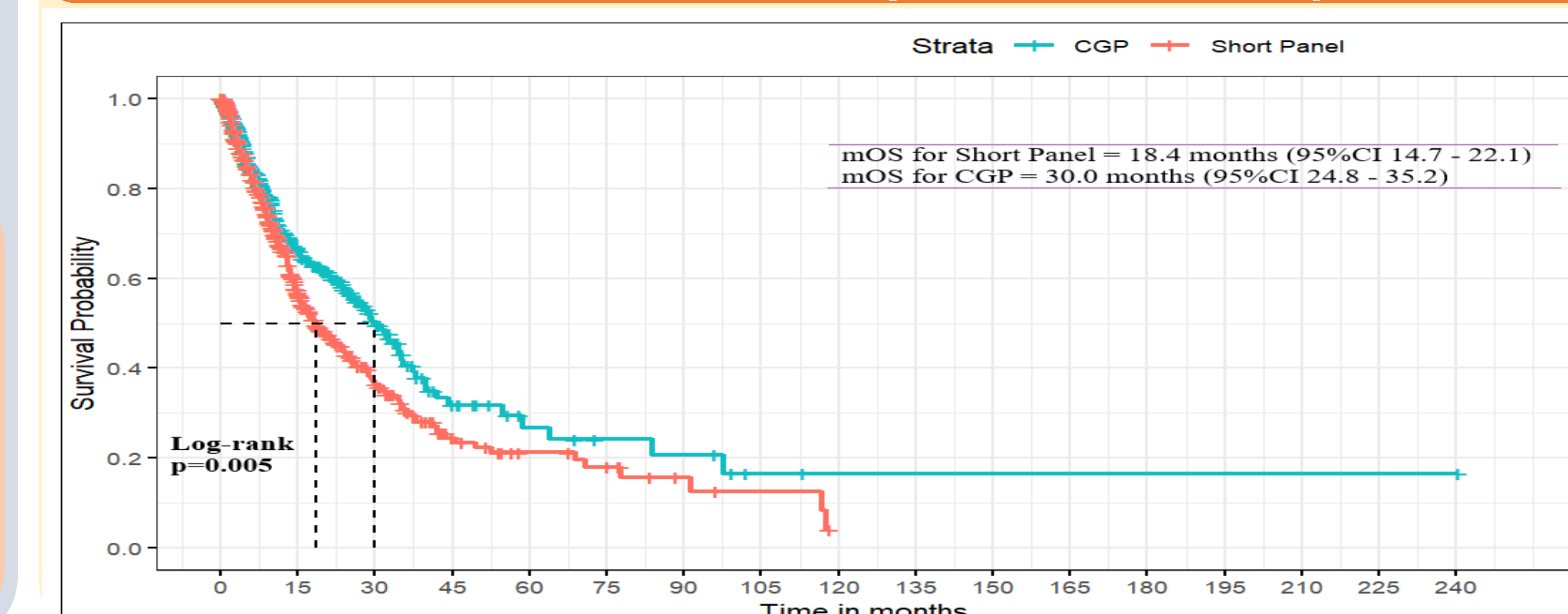
mOS for mutated cohort – 27.2 mo (95% CI 23.2-31.2)
mOS for Non-mutated cohort – 14.5 mo (95%CI 12.4-16.5)



mOS for Non-Targeted therapy – 15.6 mo (95% CI 13.2-18.1)
mOS for Targeted therapy – 31.2 mo (95% CI 27.5-34.9)



mOS for Short panel – 18.4 mo (95% CI 14.7-22.1)
mOS for CGP – 30 mo (95% CI 24.8-35.2)



CONCLUSION

- Comprehensive molecular testing approach improved detection of actionable alterations and survival outcomes compared to limited panels, underscoring the value of expanded molecular profiling and the need to enhance its accessibility in resource-constrained settings.