

INTRODUCTION

- Central nervous system (CNS) metastases at presentation are among the most clinical disruptive manifestations of non-small cell lung cancer (NSCLC)
 - Neurologic morbidity and clinical deterioration
 - Urgent treatment needs
- In low- and middle-income settings have fragmented referral pathways and barriers to timely access to local and systemic therapies

OBJECTIVE

To characterize the neurologic burden, treatment patterns, and outcomes of patients with NSCLC presenting with CNS metastases

METHODS

DESIGN:

- Retrospective single-center
- Tertiary care center
- Bogotá, Colombia
- 2018-2025
- Adults with NSCLC and CNS metastases

CNS ONSET:

- Defined as the date of the first neuroimaging study suggestive of CNS involvement.

OUTCOMES:

- Clinical variables
- Molecular and neurologic variables
- Overall survival
 - First suspicious neuroimaging to death from any cause or last follow-up.

STATISTICAL ANALYSIS:

Kaplan-Meier estimates compared by log-rank test, multivariate Cox regression for factors associated with overall survival

DISCUSSION AND CONCLUSION

KEY TAKE AWAY MESSAGES:

- NSCLC presenting with CNS metastases was marked by
 - Substantial neurologic burden
 - Frequent need for local therapy
 - Poor survival
- The high frequency of neurologic symptoms and multiple brain lesions at presentation reflects advanced CNS involvement at diagnosis, consistent with delayed detection in settings with fragmented referral pathways
- Functional status at presentation (ECOG) was the strongest prognostic factor associated with survival.
- CNS-penetrant TKIs were associated with consistent, though non-significant, favorable signal across survival outcomes

FUTURE DIRECTIONS:

Findings support rapid neurologic evaluation, coordinated multidisciplinary care and timely access to CNS-active therapies particularly in low-and-middle-income settings

REFERENCES & ACKNOWLEDGEMENTS

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No artificial intelligence tools were used in the development of the scientific content of this poster

RESULTS

COHORT CHARACTERISTICS

53
patients

69 y
median age
(IQR 59–86.5)

56.6%
female

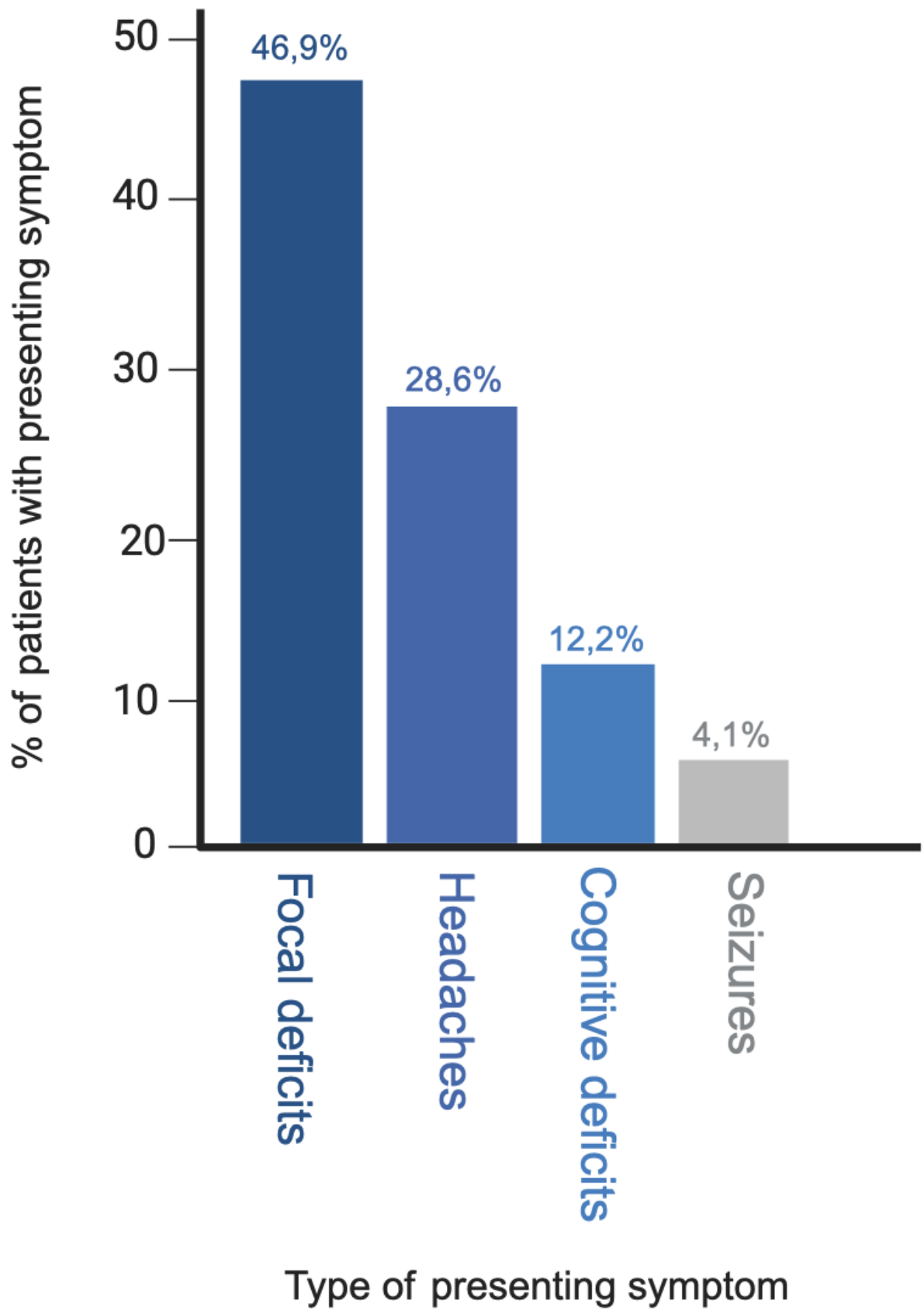
81.1%
adenocarcinoma

32.1%
EGFR alterations

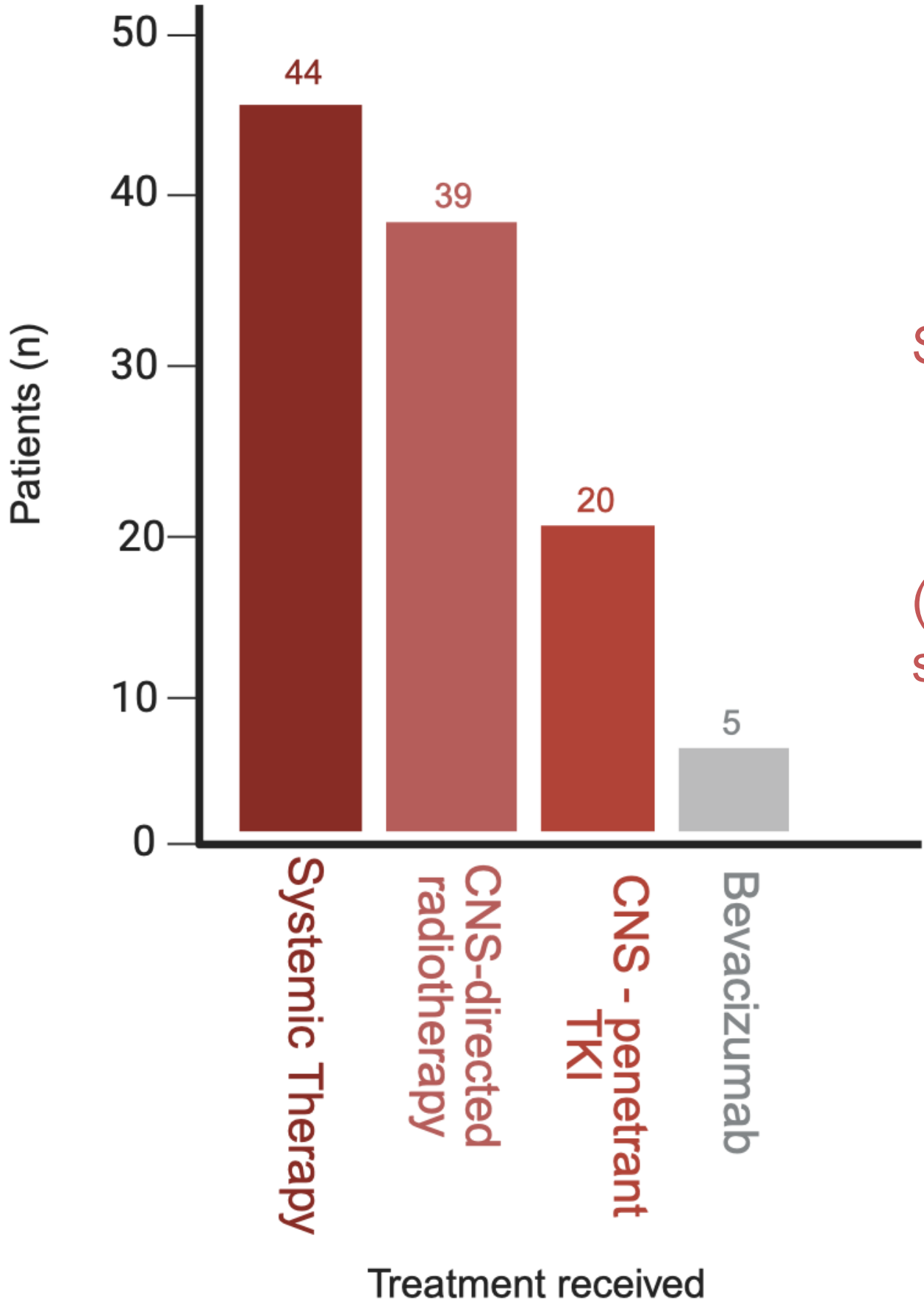
9.4%
ALK rearrangements

CNS involvement was predominantly parenchymal (**94.3%**), and **77.4%** of evaluable patients had multiple brain lesions. Neurologic symptoms were present in nearly half of patients at presentation (**48.1%**)

NEUROLOGIC SYMPTOMS AT PRESENTATION



TREATMENT RECEIVED



Among patients who received CNS directed radiotherapy (n=39)

Stereotactic surgery was the most common modality (48.7%), followed by WBRT (25.6%) and fractionated stereotactic radiotherapy (17.9%)

In both panels, categories are not mutually exclusive: Patients could present with more than one symptom and receive more than one treatment modality. Values are not additive

OVERALL SURVIVAL AND MULTIVARIATE ANALYSIS

- Median OS was **10.7** months
- **ECOG ≥2** was strongly associated with worse OS (aHR 5.57) and higher risk of intracranial progression or death (aHR 2.87)
- **CNS-penetrant TKI** showed a consistent but nonsignificant favorable association across both outcomes
- Median OS was longer among TKI-treated patients (26.9 vs 9.9 months, unadjusted)

