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From Molecular Detection to Treatment Access: Real-World Outcomes of Liquid Biopsy NGS in Advanced NSCLC in Argentina

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INTRODUCTION

Liquid biopsy-based next-generation sequencing (pNGS) enables timely identification of actionable alterations in advanced non-small cell lung cancer (aNSCLC). In middle-income settings, access to targeted therapies remains a major barrier. We evaluated the prevalence of actionable alterations, treatment access, and survival outcomes in a real-world cohort.

METHODS

Design

- Retrospective study
- 281 patients with aNSCLC who underwent pNGS were included
- Clinical characteristics, genomic alterations, and treatment access were collected.
- Actionable alterations were defined according to ESCAT classification.
- Survival analyses were performed in patients with at least one radiologic reassessment (≥ 3 months follow-up, n=202).
- Overall survival (OS) was estimated using Kaplan-Meier and compared using Cox proportional hazards models.

DISCUSSION AND CONCLUSION

Molecular alterations are common
pNGS identified ESCAT I–II actionable alterations in 30% of patients.

Detection does not equal treatment

Despite actionable findings, only 37% of patients accessed matched targeted therapy, highlighting a substantial molecular-to-treatment access gap.

Access translates into better outcomes

Patients who received matched targeted therapy had significantly improved overall survival

HR 0.56 (95% CI, 0.38–0.82; p=0.003).

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RESULTS

- 281 patients were included
- Median age was 69 years (IQR 62-76), 57% were male, 78% with smoking history, ECOG 0-1 (86%) and adenocarcinoma histology (77%).
- At diagnosis, 85% presented with metastatic disease. NGS detected genomic alterations in 94% of cases. ESCAT level I-II alterations were identified in 82 patients, 62 have follow-up.
- Among patients with ≥ 3 months follow-up, 59 (29%) received targeted therapy. Within ESCAT I-II patients, only 23/62 (37%) accessed matched targeted therapy, while 38 (61%) did not receive treatment due to lack of coverage.
- 21 patients received targeted therapies despite ESCAT III-IV alterations, highlighting treatment heterogeneity.
- Access to targeted therapy was associated with significantly improved overall survival: HR 0.56 (95% CI 0.38-0.82; p=0.003).

