

P2.06.37: NGS testing in lung cancer within the Catalan Precision Oncology Program: the ICO-HUB Comprehensive Cancer Center experience

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INTRODUCTION

- Next generation sequencing (NGS) testing is essential for the management of patients with NSCLC.
- In Catalonia, the public payer (CatSalut) launched the Catalan Precision Oncology Program (POP-Cat) to cover NGS testing costs in specific solid tumors, including NSCLC.
- This study aimed to capture the clinico-pathological and molecular characteristics of patients diagnosed with NSCLC who underwent NGS testing within the POP-Cat in our campus.

METHODS

Design:

- Observational study that included 1,653 patients diagnosed with NSCLC who underwent NGS testing in our campus from February 2020 to March 2025 to identify actionable genomic alterations.
- Patients who underwent NGS to determine the mechanisms of resistance to prior therapies were excluded.
- Data were retrospectively collected by reviewing the medical charts and molecular reports in an anonymized database.
- We used two different NGS panels:
 1. TruSight Oncology 500 (TSO500).
 2. Oncomine™ Precision Assay GX (OPA).
- All results are discussed in the molecular tumor board (MTB) of the ICO-HUB Comprehensive Cancer Center.

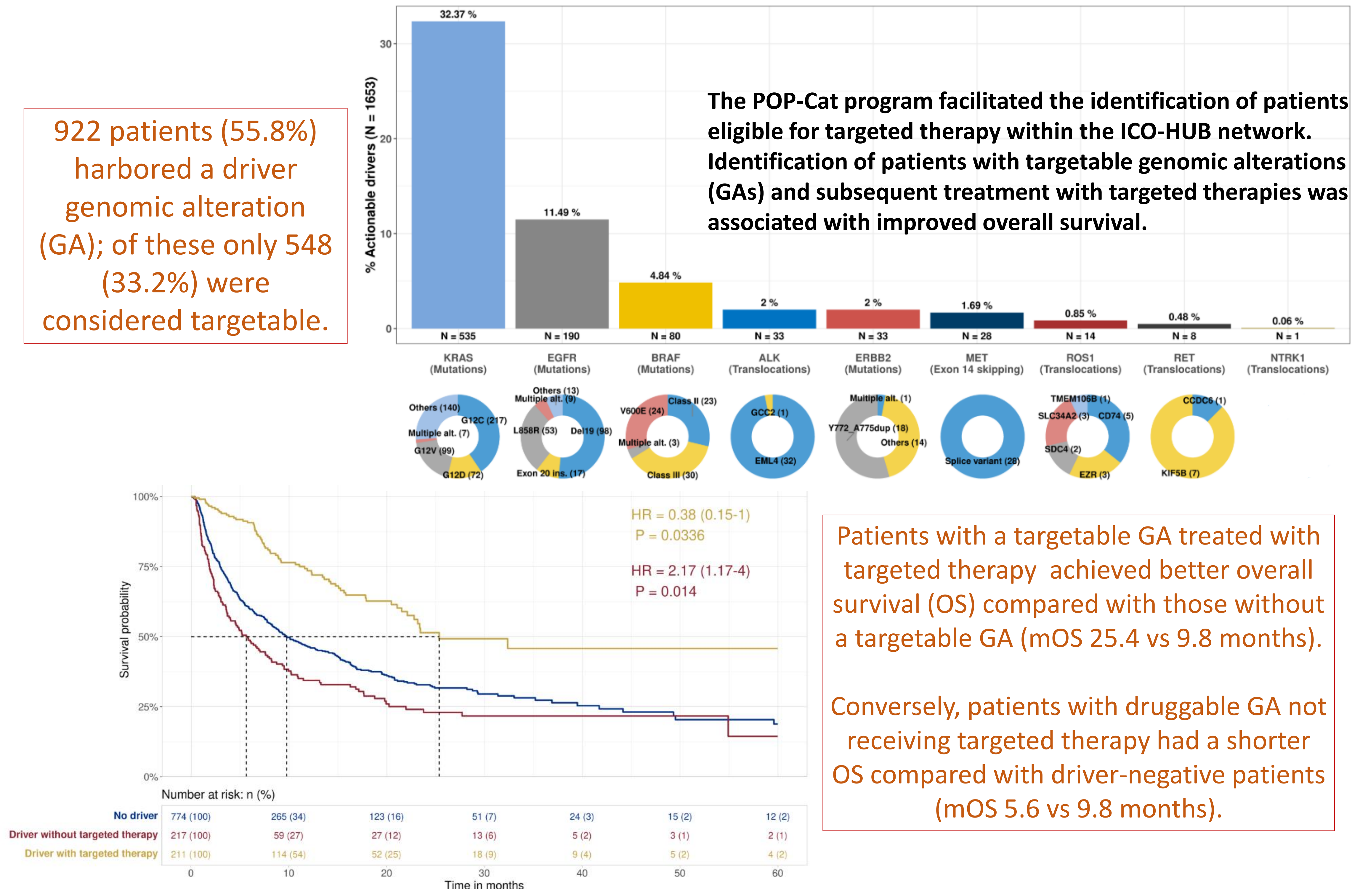
RESULTS

Characteristics	N=1653
Age, median (range)	67 (34-91)
Sex	
Female, n (%)	561 (34%)
Male, n (%)	1092 (66%)
Smoking	
Never smoker, n (%)	231 (15%)
Former smoker, n (%)	687 (42%)
Current smoker, n (%)	701 (43%)
Histology	
Adenocarcinoma, n (%)	1232 (75%)
Squamous, n (%)	119 (7.2%)
NOS, n (%)	248 (15%)
Other, n (%)	54 (3.3%)

Characteristics	N=1653 N (%)
ECOG PS	
0	238 (17%)
1	861 (61%)
≥2	315 (19%)
Stage at diagnosis	
I	157 (9.7%)
II	113 (7.0%)
III	337 (21%)
IV	1016 (63%)
NGS panel	
TSO500	299 (18%)
OPA	1354 (82%)

Actionable gene alterations	N=1653 N (%)
KRAS G12C mutation	217 (13.1%)
EGFR mutation	190 (11.5%)
ALK fusion	33 (2.0%)
ERBB2 mutation	33 (2.0%)
METex14 splicing	28 (1.7%)
BRAF V600E mutation	24 (1.6%)
ROS1 fusion	14 (0.8%)
RET fusion	8 (0.5%)
NTRK fusion	1 (0.1%)

922 patients (55.8%) harbored a driver genomic alteration (GA); of these only 548 (33.2%) were considered targetable.



Patients with a targetable GA treated with targeted therapy achieved better overall survival (OS) compared with those without a targetable GA (mOS 25.4 vs 9.8 months).

Conversely, patients with druggable GA not receiving targeted therapy had a shorter OS compared with driver-negative patients (mOS 5.6 vs 9.8 months).

DISCUSSION AND CONCLUSION

- NGS testing is feasible within a public health system and enables equitable access to treatment.
- The frequency of actionable genomic alterations (GA) observed is consistent with reported prevalence in Europe.
- The POP-Cat Program allowed the identification of patients eligible for targeted therapy within the ICO-HUB network.
- Identification of patients with targetable GA and subsequent treatment with targeted therapies is associated with improved overall survival.

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