

The impact of single gene testing on subsequent comprehensive genomic profiling (CGP) success in community oncology practice for advanced non-small cell lung cancer (NSCLC)

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Population

- Guidelines recommend patients with advanced NSCLC have testing for *EGFR*, *ALK*, *ROS1*, *BRAF*, *NTRK 1/2/3*, *MET*, *KRAS*, *RET*, *ERBB2*, and PD-L1.
- Patients with advanced NSCLC who had not received CGP or had negative single gene testing results

Setting

Providers who ordered one or more single gene tests in >80 U.S. community oncology practices

Testing

Comprehensive genomic and immune profiling was performed using OmniSeq INSIGHT®, which includes DNA and RNA next-generation sequencing.

Testing was offered for those patients with negative results after single gene testing or who had not had CGP.

Primary Outcome

Characterize the effects of prior single gene testing on the success of CGP in patients with NSCLC.

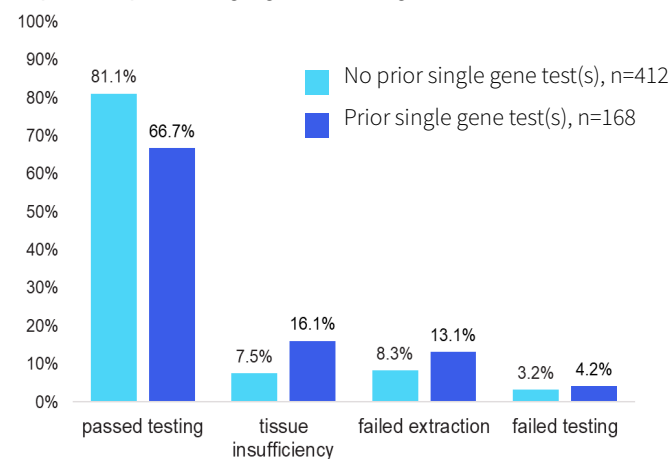
Bottom Line

- For patients with advanced NSCLC, negative single gene testing before CGP doubled subsequent CGP test cancelations and increased CGP DNA extraction failures.
- Given the number of actionable biomarkers that must be tested in advanced NSCLC where tissue is often limited, CGP must be prioritized to efficiently identify targetable alterations.
- Comprehensive genomic and immune profiling may be needed to develop the precision immunotherapy paradigm.

Key Findings

580 patients with advanced NSCLC received CGP

Impact of prior single gene testing on CGP success



- CGP order cancellation for tissue insufficiency occurred twice as often for cases with prior single gene testing
- DNA extraction failed more often for CGP orders with prior single gene testing

Impact of Prior SGT on CGP Results			
Prior Single Gene Testing	Turnaround time (Median)	Guideline-recommended CGP genomic variant detection rate	
		All orders (canceled, failed or completed)	Completed orders only
No	13 days	43%	52%
Yes	16 days	35%	51%

Single gene testing prior to CGP increased turnaround time and less actionable genomic variants were identified.

Reference:

- Nesline M, DePietro P, Cooper M, et al. The impact of single gene testing (SGT) on subsequent comprehensive genomic profiling (CGP) success in community oncology practice for advanced non-small cell lung cancer (NSCLC). *J Clin Oncol* 41, 2023 (suppl 16; abstr 6506)

View the full manuscript on oncology.labcorp.com or scan the QR code

