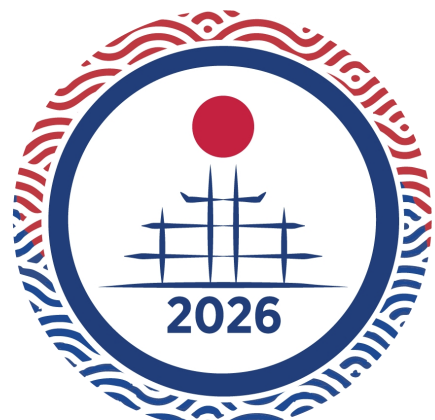


P1.380: Impact of Quality Improvement Project on Physicians’ Perceptions of Diagnosis and Treatment in Metastatic NSCLC

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**IASLC 2026 World
Conference on Lung Cancer**
SEPTEMBER 12 – 15, 2026
SEOUL, REPUBLIC OF KOREA

INTRODUCTION

- Changes in the physicians' perceptions of diagnosis and treatment are critical to driving improvements in clinical practice¹⁻².
- Quality improvement (QI) aims to improve the patient experience³. Whether educational interventions delivered through Quality Improvement Project (QIP) can effectively enhance physicians' perceptions of diagnosis and treatment and consequently translate into changes in clinical practice for metastatic non-small cell lung cancer (NSCLC), remains to be elucidated⁴.
- The primary objective of the study (NCT06494241) is to assess the implementation of standardized diagnosis and treatment practice in oncology departments of small- and middle-tier cities and county hospitals, after standardized education and implementation of lung cancer clinical practice guidelines for oncology physicians. We present a questionnaire-based analysis of physicians' perceptions regarding metastatic NSCLC management in the pre-QIP and post-QIP intervention periods.

METHODS

- In this prospective, real-world study, physicians from 45 sites completed survey questionnaires before and after QIP intervention. QIP intervention includes structured educational training encompassing national guideline dissemination, reinforcement learning, and regular dynamic feedback.
- The questionnaire assessed indicators including staging documentation, diagnostic modalities, first line (1L) biomarker testing and turnaround time, 1L treatment preferences for actionable genomic alterations (AGA) positive and AGA negative patients, and perceived barriers to molecular testing, targeted therapy, and immunotherapy (IO). Only the physicians who completed the survey questionnaires both before and after QIP will be included this descriptive analysis.

CONCLUSION

- These findings suggest the QIP can be an effective solution to improve physicians’ perception of diagnosis and treatment and strengthen physicians’ standardized care orientation for metastatic NSCLC disease.
- Whether these improvements of physicians’ perception can translate into clinical practice changes and durable patient outcome gains requires longer follow- up.

RESULTS

Baseline characteristics

- A total of 457 physicians completed survey questionnaires both pre-QIP and post-QIP. Among them, 80.5% were at Grade III-A tertiary hospitals, 45.7% were chief/associate chief physicians, 74.0% were from small- and middle-tier cities, and 44.0% were from the Eastern region, with other hospital levels, professional titles, city tiers, and geographic regions having respective percentages as detailed (Table 1).

Table 1. Baseline Characteristics

Characteristic	Overall (n=457)
Hospital level, n (%)	
Grade III-A tertiary hospital	368 (80.5)
Grade III-B tertiary hospital	62 (13.6)
Grade II-A hospital	27 (5.9)
Professional title, n (%)	
Chief or associate chief physician	209 (45.7)
Attending physician	175 (38.3)
Resident physician	73 (16.0)
City tier, n (%)	
Small- and middle-tier cities	338 (74.0)
County	119 (26.0)
Geographic region, n (%)	
East	201 (44.0)
West	59 (13.0)
South	53 (11.6)
North	65 (14.2)
Middle	79 (17.2)

Changes in physicians’ perceptions before and after the QIP

- Compared with pre-QIP, multiple physicians’ perceptions indicators related to guideline adherence showed improvement post-QIP (Table 2).
- The proportion of reporting routine TNM staging for newly diagnosed metastatic NSCLC increased from 97.6% to 100%. Routine recommendation of 1L molecular testing increased from 96.9% to 100%, with inclusion of EGFR mutation in the testing panel from 99.8% to 100% and routine PD-L1 testing from 81.6% to 85.8%. Recommendation of 1L targeted therapy for AGA-positive patients reached 100% post-QIP, while 1L IO recommendation for AGA-negative patients increased from 90.4% to 98.2% (Table 2).

Table 2. Overall Changes in Physicians’ Perceptions Before and After the QIP

	Pre-QIP (n=457)	Post-QIP (n=457)
Routine TNM staging for mNSCLC, n (%)	446 (97.6)	457 (100)
Routine recommendation of 1L molecular testing, n (%)	443 (96.9)	457 (100)
Inclusion of EGFR testing in 1L testing pane, n (%)	456 (99.8)	457 (100)
Routine recommendation of 1L PD-L1 testing, n (%)	373 (81.6)	392 (85.8)
1L targeted therapy recommendation for AGA positive patients, n (%)	454 (99.3)	457 (100)
1L IO recommendation for AGA negative patients, n (%)	413 (90.4)	449 (98.2)

Physicians’ perceptions of molecular testing recommendations and barriers

- Recommendations for EGFR, ALK, and ROS1 testing remained consistently high (> 90%) before and after QIP implementation, while recommendations for other AGAs increased substantially (> 10%), albeit remaining lower than those for EGFR, ALK, and ROS1 (Figure 1).
- After QIP, recommendation rates for EGFR, ALK, and ROS1 testing were similar between county and small- and middle-tier cities. While recommendations for other AGAs increased in both regions, the improvement was more pronounced in county (Figure 2).
- After QIP, top three barriers to 1L molecular testing were economic factors (82.7%), insufficient tissue samples (68.5%), and low mutation rate in certain subtypes (48.1%) (Table 3).

Figure 1. Perceptions of 1L Driver Alteration Testing in Metastatic NSCLC

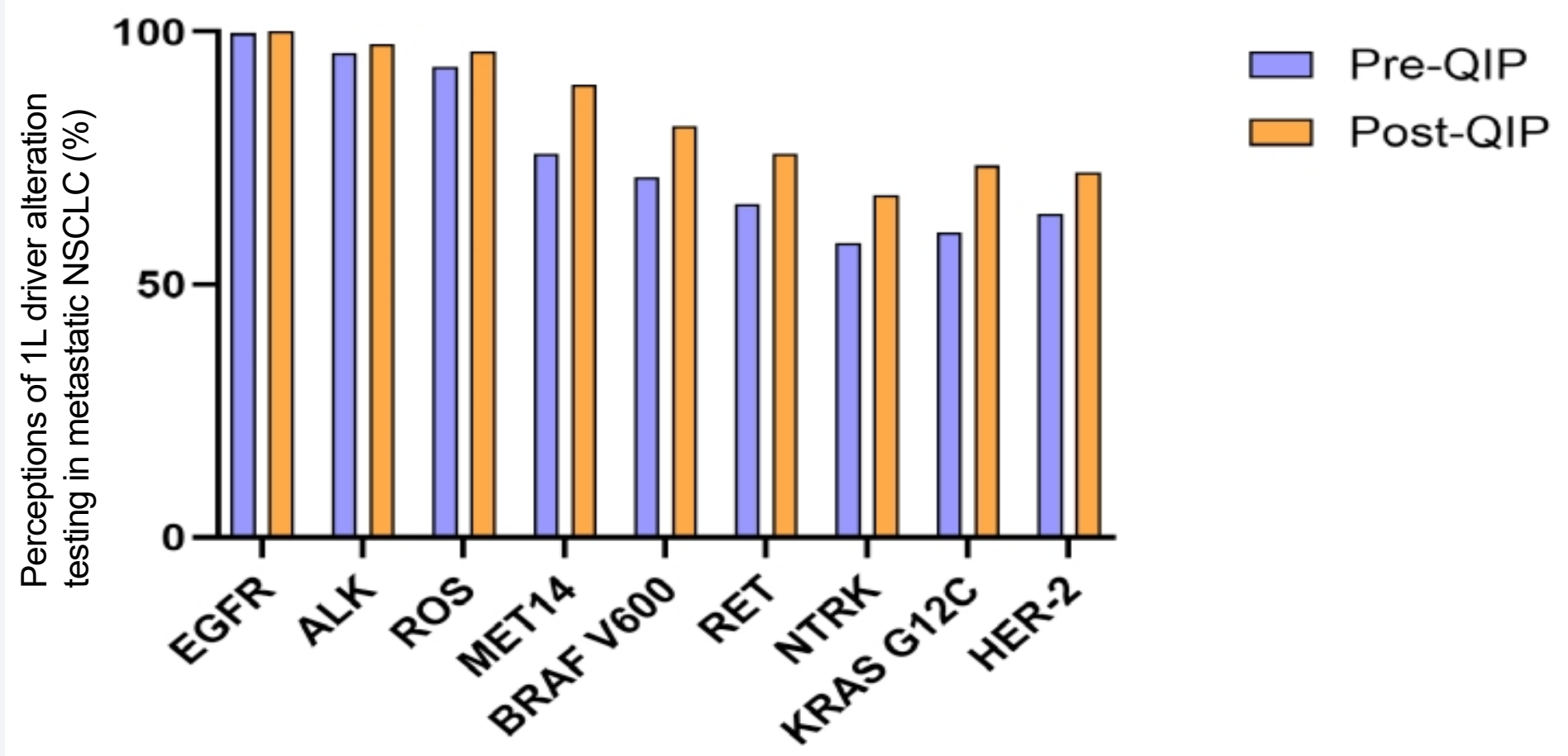


Figure 2. Physicians’ Recommendations for Molecular Testing in County (A) and Small- and Middle-Tier Cities (B)

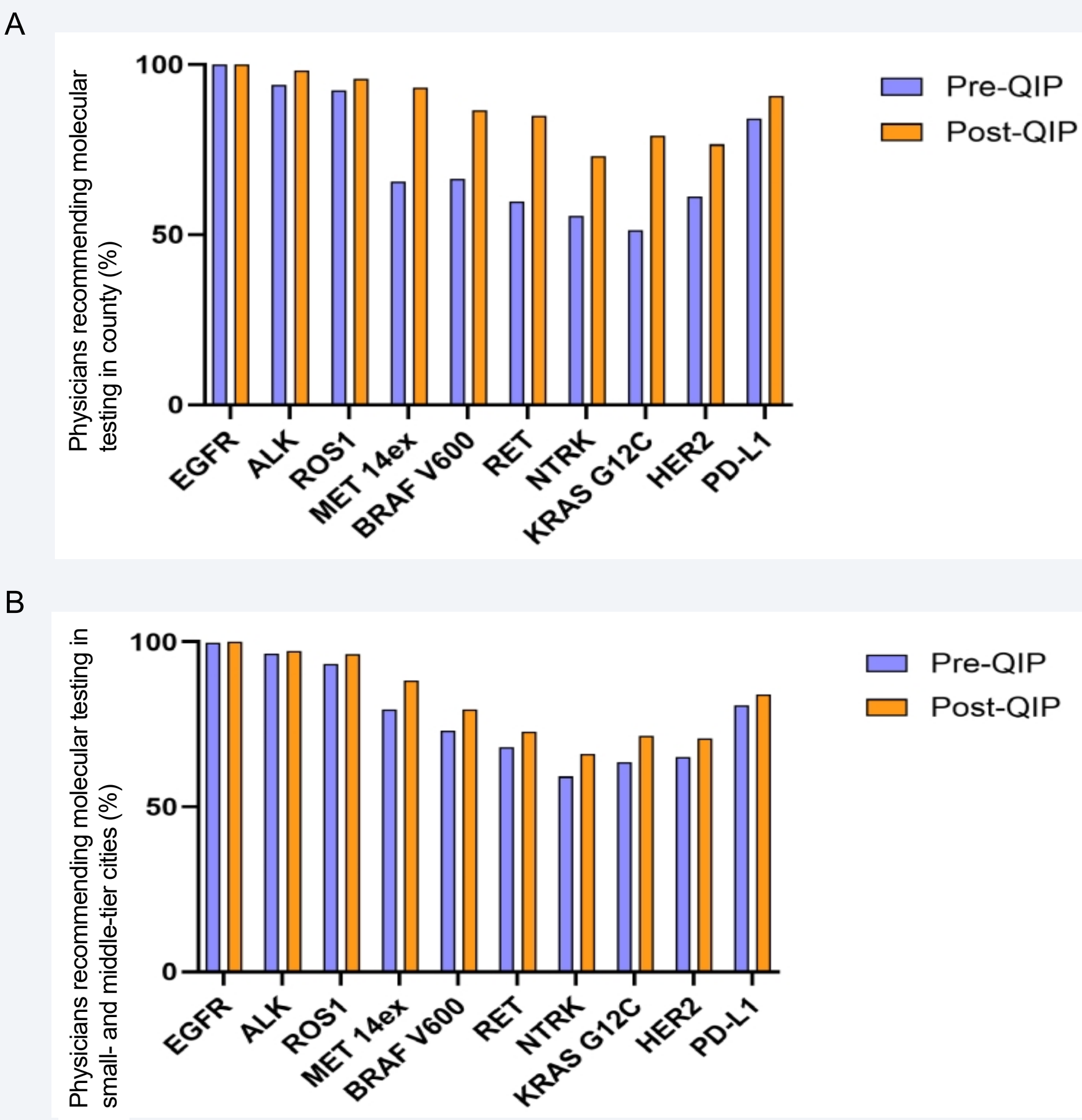


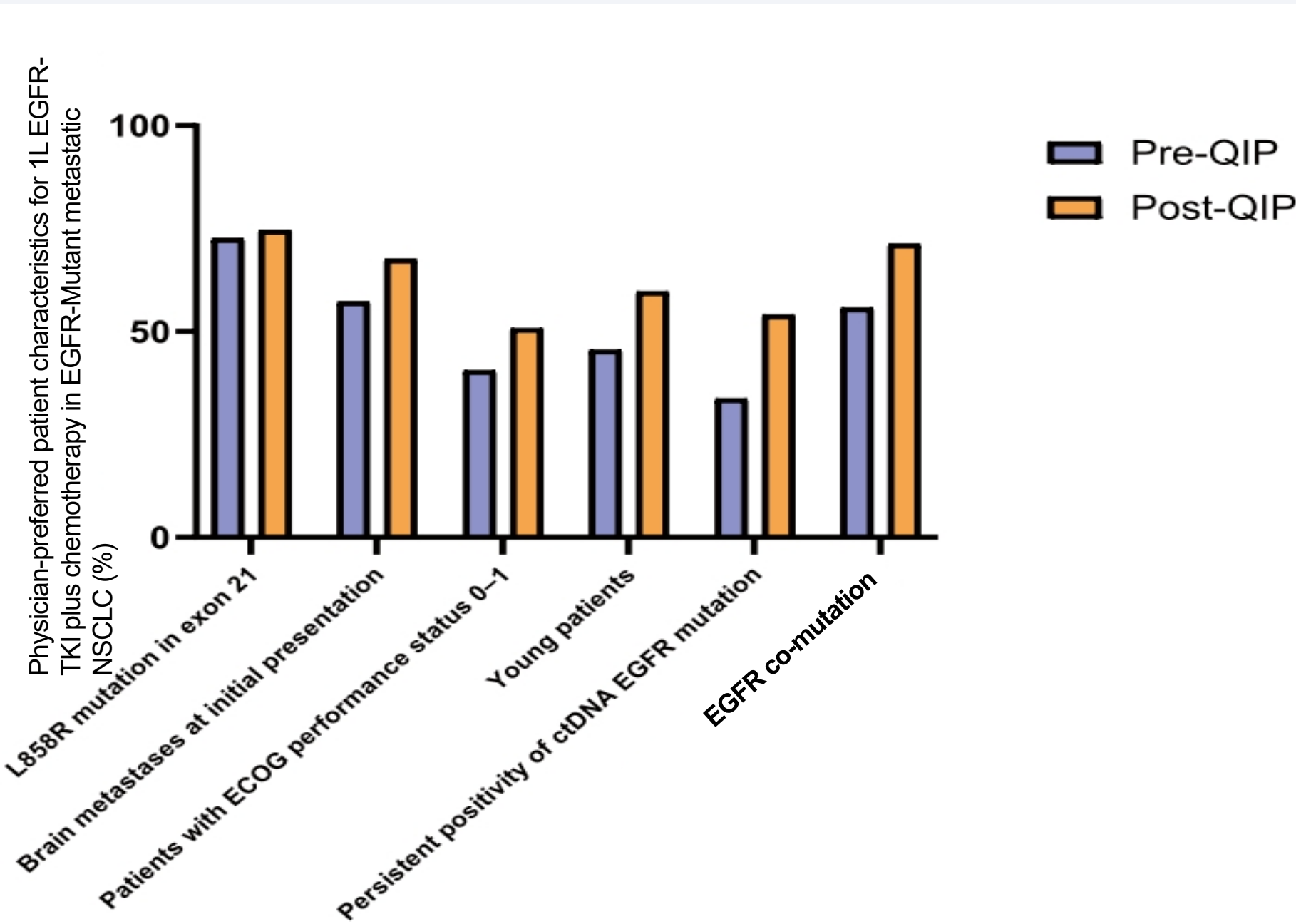
Table 3. Physicians’ Perceptions of Barriers to Routine 1L Molecular Testing for Metastatic NSCLC

	Pre-QIP (n=457)	Post-QIP (n=457)
Economic factors, n (%)	347 (75.9)	378 (82.7)
Insufficient tissue or cytological samples, or substandard tissue quality control, n (%)	300 (65.6)	313 (68.5)
Low mutation rates in certain pathological subtypes, n (%)	195 (42.7)	220 (48.1)
Excessively long turnaround time for molecular testing, n (%)	171 (37.4)	207 (45.3)
Lack of in-house testing platforms and capabilities, n (%)	252 (55.1)	207 (45.3)
Lack of compliant pathways for external sample referral, n (%)	122 (26.7)	90 (19.7)
Current testing methods fail to meet clinical needs, n (%)	84 (18.4)	89 (19.5)
Lack of standardized training pathways for molecular testing, n (%)	64 (14.0)	62 (13.6)
Absence or inadequacy of in-house biopsy capabilities with low puncture success rates, n (%)	29 (6.3)	46 (10.1)

Physician-preferred patient characteristics for 1L EGFR-TKI plus chemotherapy

After QIP, patients with L858R mutation in exon 21 maintained their first-place ranking in physician-preferred characteristics for 1L EGFR-TKI plus chemotherapy in EGFR-mutant metastatic NSCLC. Moreover, the preferred proportions for all patient categories exhibited an upward trend post-QIP, with particularly marked increases observed among patients with persistent positivity of ctDNA EGFR mutation and EGFR co-mutation (Figure 3).

Figure 3. Physician-Preferred Patient Characteristics for 1L EGFR-TKI plus Chemotherapy in EGFR-Mutant Metastatic NSCLC



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ACKNOWLEDGEMENTS

This study is sponsored by AstraZeneca; the authors thank all patients, investigators, and site staff contributing to the study.

DISCLOSURES

All authors have declared no conflicts of interest.