Precision Medicine in Solid Tumors

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Precision Medicine

The goal of matching the right patient to the right therapy at the right time is a reality, due to our improved understanding of tumor biology[1–3]

Diagnostic, prognostic, and predictive biomarkers inform treatment decisions[4,5]

The therapeutic landscape has been reshaped through an increase in the number of predictive biomarkers to inform therapy decisions, transforming patient care[6–8]

As of 2024, there are

83 biomarkers recognized by the US FDA or recommended in professional guidelines for predictive biomarker testing[6]

103 FDA-approved precision oncology therapies, including targeted therapies and ICIs[6,7]

11 ICIs approved[7]

1 in 3 patients with cancer may be eligible for biomarker-informed therapy[9,10]

Hurdles in the diagnostic journey prevent some patients from receiving recommended testing[11–14]

Common challenges and potential solutions throughout the diagnostic journey

Test Ordering*

	Challenge	Potential solution
Patient Presentation	• Initial biopsy not performed (patient medically unfit or tumor inaccessible)[14–16]	• Use liquid biopsy[17] • Use FNA and cytology[18]
Sample Acquisition	• Insufficient sample collected[11,14,19]	• Implement rapid on-site evaluation (ROSE)[17] • Involve pathologist during sample collection[11,13,17]
Sample Processing, Diagnostic Testing	• Sample degradation from inappropriate tissue handling/processing[11,17,18,20] • Overestimated tumor content[14]	• Consider downstream biomarker testing during initial tissue processing[11] • Utilize microdissections[17]
Biomarker Testing	• Appropriate test not ordered[4,14] • Long turnaround time[14] • Tissue exhaustion preventing further testing[14,18,20]	• Use NGS-based testing if possible[17] • Implement reflex testing[17] • Use minimal tissue for diagnosis[20] • Cut slides up front[20]
Testing Results Reporting	• Report missing information[21] • Report difficult to interpret[17,21,22]	• Complete report with essential elements included[21] • Clearly identify actionable biomarkers[22]
Treatment Decisions	• Treatment initiated before test results returned[14] • Treatment not matched to positive test results[14]	• Wait for test results[4,17,23] • Stay current with guideline recommendations[4,11,15]

Disparities in biomarker testing

Rates of biomarker testing may be impacted by:

- Academic vs community hospitals[24,25]
- Technology and resources[26]
- Geographic location[25]
- Race and ethnicity[27]
- Socioeconomic status[28]

Solutions start with a conversation

Take action and speak to J&J Precision Medicine

*Includes reflex testing.

FDA, Food and Drug Administration; ICI, immune checkpoint inhibitor; NGS, next-generation sequencing.

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