

ONCOLOGY: Molecular Testing in NSCLC – Clinical Aspects in Small Specimen

Pre-Procedural Evaluation

- Choose the best biopsy method to optimize yield (EBUS-TBNA for large mediastinal adenopathy, TTNA for peripheral nodule, etc.)
- Identify reason for biopsy
 - Initial diagnosis
 - Known diagnosis but need additional tissue for molecular testing
- Optimize pre-procedural imaging to maximize procedural yield

Specimen Collection

- Image guidance to improve sample acquisition
- Utilize ROSE to confirm adequate tissue for testing needs
- Needle gauge (procedure dependent)
- Number of passes
- Operator skill and technique

Specimen Handling

- Utilizing ROSE to triage specimen
- Collection of specimen within appropriate media (formalin/non-formalin fixatives)
- Perform additional passes for cell block
- Communicate case details with pathology to optimize specimen triage

Initial biopsy reveals adenocarcinoma

PD-L1 immunohistochemistry

Test for actionable mutations (NGS panel testing favored over individual tests*)

Initial biopsy reveals adenocarcinoma, but limited tissue remains after diagnostic workup

Communicate presence of limited testing material to the ordering provider and prioritize testing based on discussion. Consider ordering circulating tumor DNA test (ctDNA) (informative, if positive)

Consider repeat biopsy, communicate “molecular priority” protocol for known diagnosis

Patients progressing on initial EGFR TKI

Test for actionable mutations such as T790M, *MET* amplification, *ERBB2*/Her-2 amplification

Circulating tumor DNA test (informative, if positive), otherwise repeat tissue biopsy

Patient progressing after immunotherapy: biopsies remain experimental in this situation.

See online supplement for references and abbreviations: www.amp.org/PocketGuides

* if the sample is too small to do mutation testing, reflex to fluorescence *in situ* hybridization (FISH) for rearrangements of *ALK*, *ROS1*, *RET*, and *MET* amplification.

See Reverse

ONCOLOGY: Molecular Testing in NSCLC – Laboratory Aspects in Small Specimen Processing

