



Review of Advance Staged Bronchoal Adenocarcinomas for EGFR- ALK Molecular Testing

Topic: For 2017 the National Cancer Institute SEER has estimated there would be over 222,500 new lung cancer cases reported. This correlates to approximately 6.4% of men and women will be diagnosed with lung cancer during their lifetime. During 2016 Facility reported 41 new cases of lung cancer. It is vital to have adequate testing and diagnoses of lung primaries to provide the best care to patients. The cancer committee understands the importance of having a clear diagnosis and completion of molecular testing of lung cancers. The committee would like to review molecular testing completed at Facility to insure all treatment options are available to the patients and treating physicians.

Problem Statement: The cancer committee has expressed concern that some molecular tests have not been performed on adenocarcinomas of the lung.

Criteria for Evaluation:

Conduct a compressive analysis of EGFR and ALK testing of advanced stage four bronchial adenocarcinomas with biopsies at Facility.

Goals:

1. To offer complete testing of evidence-based recommendations for the molecular analysis of lung cancers that are required to guide EGFR and ALK directed therapies.
2. To report the results of the study to the Cancer Committee and physicians involved in the diagnosis and care of lung cancer patients.
3. To implement quality improvements if the study shows a lack of compliance with benchmarks



Data Sources:

1. Hospital EMR
2. Pathology
3. Physician Records
4. Cancer Registry Data

Background for Study: The College of American Pathologist, International Association for the Study of Lung Cancer, and Association for Molecular Pathology published an article “Molecular Testing for Guideline for Selection of Lung Cancer Patients for EGFR and ALK Tyrosine Kinase Inhibitors” recommending the use of EGFR mutations and ALK fusions to guide therapy with an epidermal growth factor receptor (EGFR) or anaplastic lymphoma kinase (ALK) inhibitor, respectively, in all patients with advanced-stage adenocarcinoma regardless of sex, race, smoking history, or other clinical factors. The American Society of Clinical Oncology (ASCO) staff reviewed the CAP/IASLC/AMP guideline for EGFR and ALK testing. The ASCO panel concurred with the recommendations in that all patients with advance staged lung adenocarcinomas or tumors with an adenocarcinoma component, irrespective of characteristics should be completed.

Benchmark Comparison: CAP, IASLC, AMP, and ASCO

Summary of Data Findings:

2016

- 41 newly diagnosed lung cancer patients, excluding small cell lung cancer diagnoses
- 16 of the 41 were stage IV
- Of the 16 stage IV patients 25% had EGFR testing completed either alone or with ALK testing
- Of the 25 remaining patients of various stages, 2 patients were tested.

2017



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- 42 newly diagnosed lung cancer patients, excluding small cell lung cancer diagnoses
- 17 of the 42 were stage IV
- Of the 17 stage IV patients, 71% had EGFR testing completed either alone or with ALK testing
- Of the remaining 25 patients of various stages, 3 patients were tested.

Outcomes of the Study Reported to the Cancer Committee:

According to the BMH Pathology department, it has evolved into becoming the standard of care to routinely order a full lung panel which includes EGFR, BRAF, PD-L1 and ALK/ROS for all stage IV lung adenocarcinomas unless otherwise stated in orders from the physician. Non-stage IV adenocarcinomas and squamous cell lung cancers get PD-L1 and BRAF only. Significant improvements in the data support this evolution and compliance with national standards.

Follow Up:

Given that this is now considered standard of care from our Pathology standpoint, it would be beneficial to follow up to determine how well we are complying with the standard as well as ASCO recommendations. Considering the trend from 2016-2017, the expectation would be that we should be in greater than the 80th percentile for the year 2018 once data collection is complete.