# An audit of the Epidermal Growth Factor Receptor Tyrosine Kinase (EGFR-TK) mutation testing request pathway

**Descriptor:**

This audit will identify the median number of working days taken to obtain EGF-TK mutation results and any resulting impact on first-line treatment decisions by the lung oncology teams, in particular whether EGFR-TK mutation status is available prior to commencing systemic therapy.

**Background:**

Approximately 10% of all patients with non-small cell lung cancer (NSCLC) will have activating mutations in the TK domain of the EGFR, conferring sensitivity to oral TK inhibitors. Gefitinib is recommended for first-line treatment of NSCLC as an alternative to platinum-based chemotherapy if EGFR-TK mutation testing is positive [1]. Timely reporting of mutation status by centralised genetics laboratories is vital in ensuring patients have access to all available treatments and is of increasing importance as personalised oncological healthcare develops.

## The Cycle

**The standard:**

NICE technology appraisal guidance 192 recommends that all patients suitable for systemic therapy should have EGFR-TK mutation testing prior to any treatment, ensuring those eligible for gefitinib are appropriately identified.

Tumour samples should be adequately prepared by local histology departments prior to being sent to the genetics laboratory for mutation testing.

Results should be reported within a time period defined by the genetics department.

**Target:**

100% of patients suitable for systemic therapy should have mutation testing for their EGFR-TK status prior to any treatment.100% of tumour samples should be prepared according to instructions detailed by the genetics laboratory.100% of mutation results should be obtained within 5 working days of the genetics laboratory receiving the specimen.

## Assess local practice

**Indicators:**

• Number of patients tested for EGFR-TK mutation status

• Percentage of specimens adequately prepared by local histology departments prior to dispatch to genetics laboratory

• Percentage of results obtained within 5 working days

• Percentage of patients whose mutation status results were available at the first oncology consultation and prior to commencing systemic therapy

• Percentage of patients suitable for treatment with TK inhibitors but did not receive them because of delays in obtaining EGFR-TK status

**Data items to be collected:**

• Age

• Hospital

• Disease stage

• Date of mutation status request

• Requester name

• Date request received by local histology department

• Method of specimen preparation by histology department

• Date specimen sent to genetics lab

• Number of working days taken to prepare specimen locally

• Date specimen received by genetics

• Further histological preparation required by genetics, Y/N

• Number of working days taken to complete further histological preparation prior to mutation status testing

• Date mutation status result obtained by genetics lab. Number of working days for genetics lab to obtain result

• EGFR-TK mutation status result

• Date results sent to oncology team

• Number of working days from initial request to receipt of mutation result by oncology team

• Method of results communication to oncology team eg computerised results system/email

• Date of first patient consultation with oncology team

• Systemic therapy received, Y/N

• Treatment received

• Start date of systemic treatment

**Suggested number:**

EGFR-TK mutation status requests over a period of 6 months

**Suggestions for change if target not met:**

• Identify delays in request pathway by analysis of indicators as detailed above

• EGFR-TK mutation requests to be sent to local histology departments within one working day of lung MDT by nominated member(s) of staff e.g. clinical nurse specialist

• Tumour samples to be sent to genetics laboratory by nominated member(s) of histology staff within 2 working days of request

• Develop local protocol to ensure tumour specimen preparation is adequate for genetic analysis

• If not possible, tumour specimen preparation to be performed by genetics department to ensure consistency in technique

• Results to be communicated to oncologist by agreed method e.g. secure/confidential email

• Re-audit in 12 months

The above should reduce the time taken to establish mutation status and ensure results are available to oncologists prior to commencing any treatment.

**Resources:**

Personnel: Audit lead, audit facilitator, oncologist, geneticist, histologist

Data collection: Patient notes, EGFR-TK mutation request forms, results reporting systems, genetics and histology specimen log records

**References:**

1. National Institute for Health and Clinical Excellence. NICE technology appraisal guidance 192. Gefitinib for the first-line treatment of locally advanced or metastatic non-small-cell lung cancer. London: NICE, 2010

**Editor's comments:**

None

**Submitted by:**

Samantha Cox

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