THE PATHCARE NEWS

Advances in molecular oncology: Liquid biopsy for non-small cell lung cancer

In recent years, liquid biopsies have emerged as a promising tool in the fields of molecular oncology and precision medicine. Liquid biopsy methodology typically analyses genomic DNA isolated from circulating tumour cells (CTCs) or circulating cell-free tumour DNA (cfDNA/ctDNA) in a peripheral blood sample, to gain insight into the genomic profile of the patients' tumour. Since liquid biopsy only requires a routine blood draw, it can overcome many of the limitations associated with tissue biopsies, such limited accessibility to tumour tissue or risks of adverse effects due to invasive sampling methods[3].

PathCare is pleased to announce that ctDNA analysis (liquid biopsy) for all the **targetable EGFR mutations** is now available **in-house at our Cape Town molecular laboratory.** This test is run on **our Idylla platform** which allows for an excellent turnaround time of 24-48 hrs.

This is currently limited to EGFR and not other targetable genes/mutations. This test is also not appropriate for molecular residual disease surveillance (Signatera being the appropriate send away option in this regard).

What is the role of testing for circulating cell-free DNA for lung cancer patients?

(current College of American Pathologists Guidelines[1])

- Physicians may use ctDNA methods to identify EGFR T790M mutations in lung adenocarcinoma patients **with secondary clinical resistance to EGFR-targeted TKI.**
- In some clinical settings in which **tissue is limited and/or insufficient** for molecular testing, physicians may use a ctDNA assay to identify EGFR mutations.
- There is currently **insufficient evidence** to support the use of circulating ctDNA molecular methods for the **diagnosis** of primary lung adenocarcinoma.
- The test has a **high specificity (83.3-99%)**, however only has **intermediate sensitivity (60 -80%)[2]**. A **negative result** must therefore **always be followed by an attempt at a tissue biopsy** for EGFR analysis before the patient is accepted as being negative.

How to arrange an EGFR liquid biopsy test:

- Complete the PathCare molecular oncology request form and email to **molecular@pathcare.co.za**
- Our laboratory will arrange for special Streck blood collection tubes to be sent to the PathCare depot on a day and time most convenient for your patient.
- Alternatively, please call **021 596 2150** to arrange.

If you require any additional information, please email molecularoncology@pathcare.co.za , or contact the following:

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2. Sacher AG et al. Prospective Validation of Rapid Plasma Genotyping for Detection of EGFR and KRS Mutations in Advanced Lung Cancer. JAMA Oncol. 2016 Aug;2(8):1014-22.
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