OncoDNA
THE CANCER THERANOSTIC COMPANY

INFORMATIVE CARD - JULY 2017

Non Small Cell Lung Cancer

Tests usually made in routine

- Sequencing of EGFR for EGFR-TKI therapies (erlotinib, gefitinib, afatinib and osimertinib)
- IHC or NGS or FISH for ALK translocation (crizotinib)
- PD-1 or PD-L1 expression (pembrolizumab)

How to treat metastatic Non Small Cell Lung Cancer?

- Chemotherapies (paclitaxel, docetaxel, pemetrexed, cisplatin, carboplatin, gemcitabine, ramucirumab, bevacizumab and etoposide)
- Targeted or immuno therapies (erlotinib, gefitinib, afatinib, osimertinib, crizotinib, nivolumab, pembrolizumab and atezolizumab)

HOW CAN ONCODNA BE USEFUL?

• For Approved Treatments

OncoSTRAT&GO™

DNA / RNA

EGFR - *extended mutations*
To predict sensitivity/resistance to EGFR-TKIs (erlotinib, gefitinib, afatinib and osimertinib).

ALK / ROS1 - *translocation testing & extended mutations*
To predict sensitivity/resistance to anti-ALK therapies (crizotinib, alectinib and ceritinib).

ERBB2 (HER2) - *extended mutations & copy number testing*
To predict response to anti-HER2 therapies (traztuzumab*, lapatinib* and afatinib).

cMET - *extended mutations & copy number testing*
To predict (1) response to crizotinib and cabozantinib* and (2) resistance to EGFR TKIs.

JAK2/JAK3 - *extended mutations*
To predict resistance to immunotherapy treatments.

BRAF - *extended mutations*
To predict response to dabrafenib+trametinib treatment.

KRAS - *extended mutations*
To predict resistance to EGFR TKIs.

RET - *translocation testing*
To predict good prognosis to anti-RET treatments (cabozantinib and vandetanib)*.

MAP2K1 & MAP2K2 - *extended mutations testing*
To predict good prognosis to MEK inhibitors (trametinib and cobimetinib*).

PROTEINS

TUBB3 - *over-expression*
To predict poor prognosis to taxane-based therapies (docetaxel and paclitaxel).

RRM1 - *over-expression*
To predict poor prognosis to gemcitabine.

TS - *over-expression*
To predict resistance to 5-FU-based therapies (pemetrexed).

PROTEINS + DNA

Tumor Burden - *testing* + **PD-L1 & CD8** - *over-expression* + **MSI** - *testing* + **POLE, POLD1** - *mutations & copy number testing*
To predict good prognosis to anti-PDL1 / anti-PD1 treatments (pembrolizumab, atezolizumab, nivolumab and durvalumab*).

CDK4 / CDK6 / RB1 / CDKN2A - *mutations & copy number testing* + **pRB1** - *expression*
To predict good prognosis to anti-CDK4/6 treatments (palbociclib and ribociclib)*.

** : Drugs FDA approved for other indications.* *** : Drugs in development*

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• For Drugs in Development

DNA / RNA

FGFR1/2/3 - *extended mutations, copy number and translocation testing*
To predict (1) good prognosis to anti-FGFR1 treatments (AZD4547), (2) resistance to anti-estrogen therapies (22% incidence) and (3) good prognosis to FGFR inhibitors (BAY1163877 and TAS-120).

ERBB2/3/4 - *extended mutations and copy number testing*
To predict good prognosis to anti-ERBB2/3/4 therapies (seribantumab).

JAK2 - *extended mutations testing*
To predict good prognosis to JAK2 inhibitor (pacritinib).

NTRK1/2/3 - *translocation testing*
To predict good prognosis for anti-NTRKx treatments (entrectinib and LOXO-101).

PROTEINS OR DNA

TP53 - *extended mutations testing* + **VEGFA** - *over expression*
To predict good prognosis to anti-VEGFR2 treatments (fruquintinib, ramucirumab*, anlotinib and tesevatinib).

* : *Drugs FDA approved for other indications.*

WHY AND WHEN A PERSONALIZED LIQUID BIOPSY COULD BE MADE ?

OncoTRACE™

• Neoadjuvant Settings

The evaluation of the response to anti-tumor therapies for solid tumors is based on the monitoring of the size of lesions and must be accurately measured in at least one dimension (longest in plane diameter is to be recorded) (RECIST criteria).

LIMITATIONS OF THIS APPROACH:

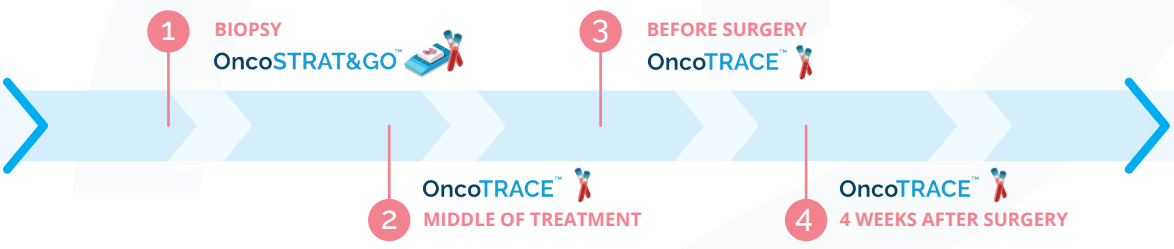
- ✗ Early evaluation after treatment start is difficult because tumor shrinkage can only be detected after several therapeutic cycles.
- ✗ Response is non-evaluable when disease is not measurable (liquid effusion, follow-up post complete tumor resection...)

OUR SUGGESTED ALTERNATIVE:

ctDNA can be used as a non-invasive tool to monitor the disease evolution during treatment. But which mutations must be followed and how many ?

Our solutions are able to:

- ✓ Predict a relapse sooner than conventional imaging technologies
- ✓ Detect resistance mutations to anticipate therapy changes
- ✓ Predict sensitivity to new therapies



• Adjuvant / Systemic settings

2 weeks before the scheduled visit with the patient.

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