



Identifying the Right Treatment for the Right Patient

Reimbursement of biomarkers and genomic profiling

Angeliki Angeli, Chief Portfolio Value Officer, Roche

March 2021



Transforming oncology care to personalized therapy

Need for Comprehensive Genomic Profiling (CGP) of patients

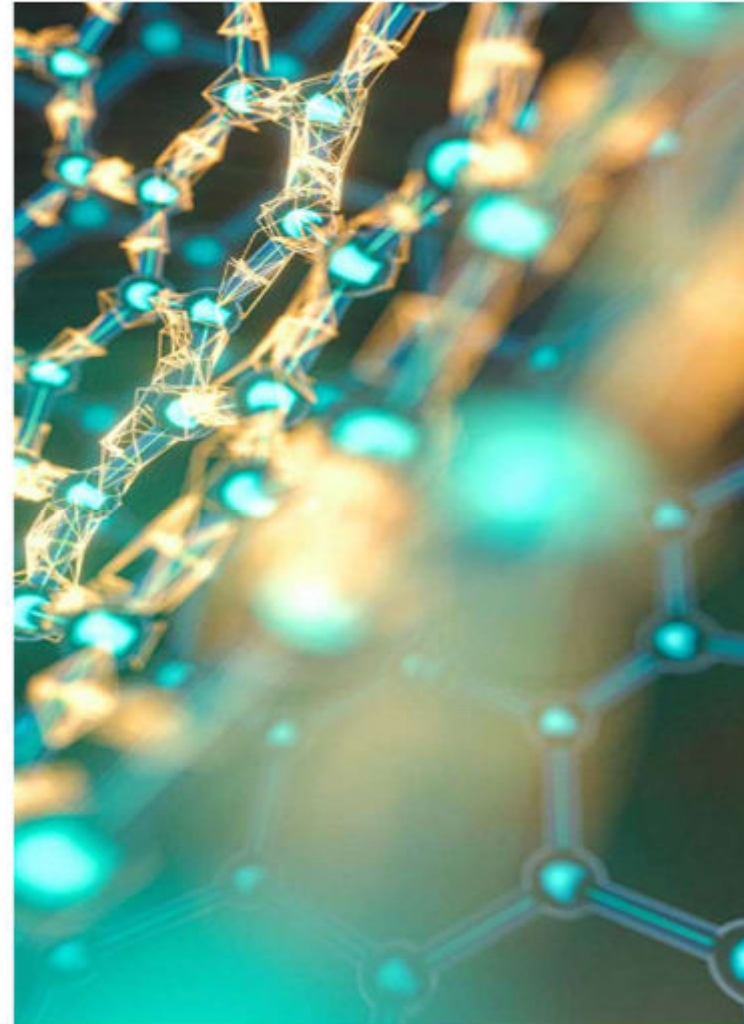
What Is Comprehensive Genomic Profiling?

Detect Multiple Biomarkers in a Single Assay



Comprehensive genomic profiling (CGP)

- + ***... is a next-generation sequencing (NGS) approach that uses a single assay to assess relevant cancer biomarkers, as established in guidelines and clinical trials, for therapy guidance.***
- + Achieve comprehensive coverage of pan-cancer content
- + Perform tests on different sample types, such as tissue or liquid biopsies
- + Save time and samples with a multiplex assay
- + Reduce costs by avoiding iterative testing
- + Address the needs of the oncology community both today and tomorrow



Transforming oncology care to personalized therapy

Identification of genomic alterations through Comprehensive Genomic Profiling (CGP) as starting point

Historically

Organ-based



Therapy selected based on organ, stage and histology

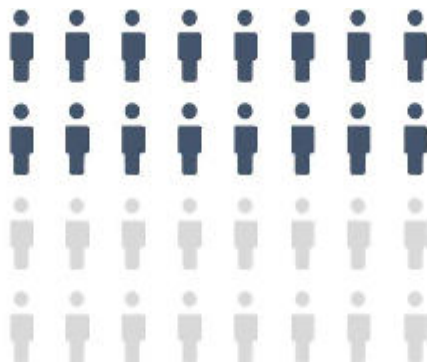


More Recently

Biomarker Stratified



Therapy selected based on single or multiple biomarkers



Now

Genomic Profiling



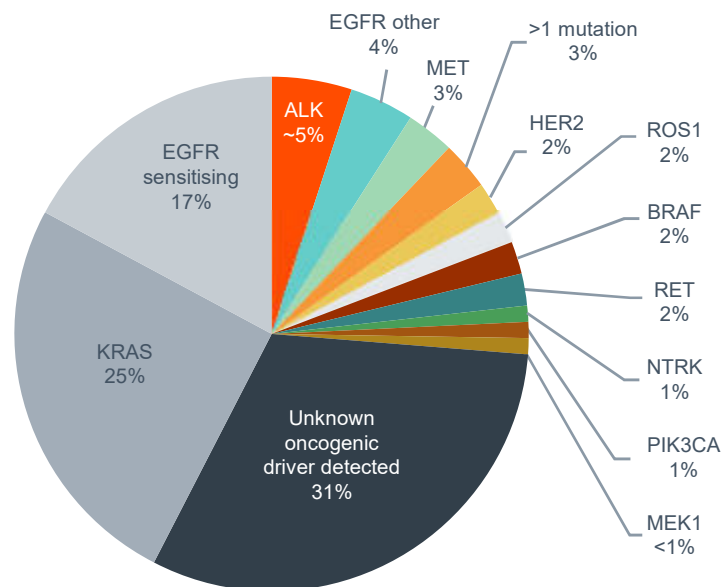
Personalized Therapy



In Lung Cancer a CGP approach is required

Due to high frequency of actionable targets, available treatment options and limited tissue

Common mutations in lung cancer¹



Identifying actionable mutations with broad molecular profiling²

EGFR sensitising	ALK	MET
<ul style="list-style-type: none"> Afatinib Erlotinib Erlotinib + bevacizumab ▼ Gefitinib Necitumumab ▼ Osimertinib ▼ JNJ-372 U3-1402 	<ul style="list-style-type: none"> Alectinib ▼ Brigatinib ▼ Ceritinib ▼ Crizotinib Ensartinib Lorlatinib ▼ Repotrectinib 	<ul style="list-style-type: none"> Cabozantinib ▼ Crizotinib Capmatinib Savolitinib Tepotinib
	RET	HER2
	<ul style="list-style-type: none"> Apatinib Cabozantinib ▼ Lenvatinib ▼ LOXO-292 Ponatinib ▼ Pralsetinib Vandetanib ▼ 	<ul style="list-style-type: none"> Afatinib Dacomitinib ▼ Pertuzumab TAK-778 Pozotinib Trastuzumab emtansine
BRAF		PIK3CA
<ul style="list-style-type: none"> Dabrafenib Dabrafenib / trametinib Vemurafenib 		<ul style="list-style-type: none"> LY3023414
NTRK	ROS1	MEK1
<ul style="list-style-type: none"> Cabozantinib ▼ DS-6051b Entrectinib Larotrectinib ▼ Repotrectinib Selitrectinib 	<ul style="list-style-type: none"> Ceritinib ▼ Crizotinib DS-6051b Entrectinib Lorlatinib ▼ Repotrectinib 	<ul style="list-style-type: none"> Cobimetinib ▼ Selumetinib Trametinib

Slide includes investigational drugs that are not approved in any indication. Some drugs are not approved for use in specific indications in Europe and / or USA. Therapies marked with ▼ are subject to additional monitoring. Reporting suspected adverse reactions after authorisation of the medicinal product is important. Adverse events should be reported to your respective local office Amgen Europe B.V.: Bevacizumab; AstraZeneca AB: Osimertinib; Bayer AG: Larotrectinib; Celltrion Healthcare Hungary Kft.: Trastuzumab; Eli Lilly Nederland B.V.: Necitumumab; Eisai Europe Limited: Lenvatinib; Genzyme Europe B.V.: Vandetanib; Incyte Biosciences Distribution B.V.: Ponatinib; Ipsen Pharma: Cabozantinib; Novartis Europharm Limited: Ceritinib; Pfizer Europe MA EEIG: Lorlatinib, Dacomitinib; Roche Registration GmbH: Alectinib, Cobimetinib; Takeda Pharma A/S: Brigatinib. 1. Adapted from Tsao, A.S., et al. (2016) J Thorac Oncol 11(5):613-38; 2. NSCLC NCCN Guidelines Version 5.2019; NCT03037385; NCT03693339; NCT02967692; NCT02767804 NCT02568267; NCT02609776; NCT03834961; NCT03899792; NCT02132949; NCT03318939 NCT03091192; NCT02716116; NCT02864992; NCT00444587; NCT03260491.



Transforming oncology care to personalized therapy

Medical knowledge about clinically relevant genomic alterations is continually increasing

328 abstracts from ASCO 2018 contained the keywords 'profiling' or 'targeted therapy' in combination with 'clinical study' or 'clinical trial'¹

260 variants of genes are associated with cancer therapies

- Approved by PDA
- Used as standard of care or
- With demonstrated clinical evidence²

125 unique targeted therapies are approved across a range of cancers³

At least **31** unique therapies are being assessed in pan-tumour basket trials⁴



Clinical studies presented at major congresses



Clinically relevant genomic alterations



Available targeted Therapies

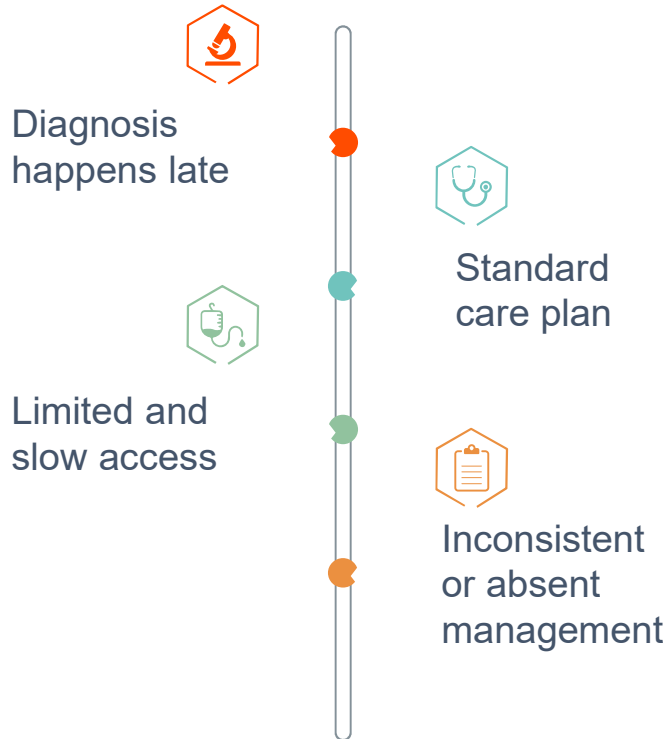


Therapies in development

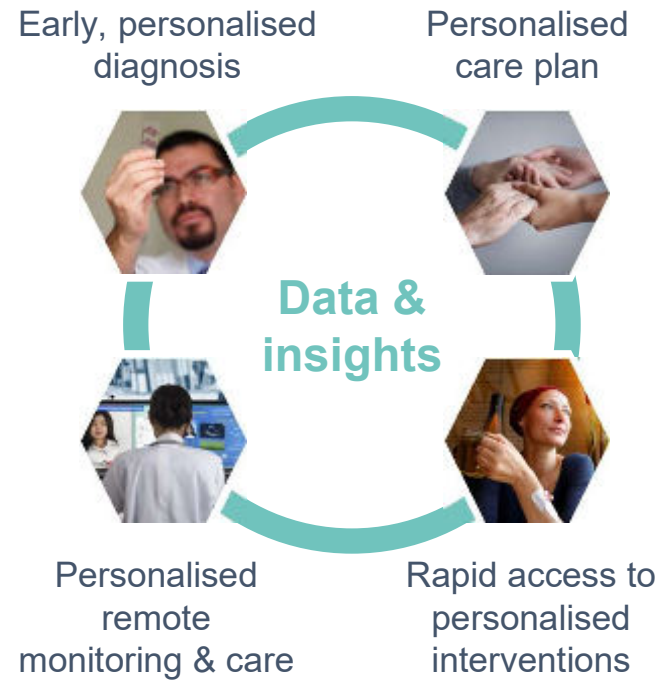
1. ASCO Meeting Library. Available at: <https://www.embase.com> using the search string ('clinical trial' OR 'clinical study') AND ('profiling' OR 'targeted therapy') AND '2018 annual meeting of the american society of clinical oncology, asco':nc. (Accessed October 2019). ; 2. Precision Oncology Knowledge Base. Available at: <http://oncokb.org/#/actionableGenes>. (Accessed October 2019). 3. National Cancer Institute. Targeted cancer therapies. Available at: <https://www.cancer.gov/about-cancer/treatment/types/targeted-therapies/targeted-therapies-fact-sheet#what-targeted-therapies-have-been-approved-for-specific-types-of-cancer>. Accessed October 2019. ; 4. Trinity partners. 'Oncology Basket Trials: An Emerging Paradigm Shift in Trial Design & Treatment Approach?' May 2018. Available at: http://trinitylifesciences.com/wp-content/uploads/2019/05/Oncology_Basket_Trials_-_Trinity_Partners.pdf. Accessed October 2019).

Transforming the oncology patient journey...

Past Patient Journey



PHC Patient Journey



Molecular diagnostics – CGP provides important treatment decision insights

Molecular diagnostic in general

Conventional molecular diagnostics overview

Conventional molecular diagnostic can't address increasing complexity of oncology care

Immunohistochemistry (IHC) ^{1,5}	In situ hybridisation (ISH) ²⁻⁸	Polymerase chain reaction (PCR)-based tests ⁷⁻¹¹	Pyrosequencing and Sanger sequencing ^{7,8,12,13}
<ul style="list-style-type: none">+ Used in research and pathological laboratories	<ul style="list-style-type: none">+ Copy number variation: amplification / deletion	<ul style="list-style-type: none">+ Point mutations	<ul style="list-style-type: none">+ Point mutations
<ul style="list-style-type: none">+ Low cost and high benefit	<ul style="list-style-type: none">+ Structural alterations: gene rearrangements	<ul style="list-style-type: none">+ Small deletions	<ul style="list-style-type: none">+ Small deletions
<ul style="list-style-type: none">- The interpretation is qualitative and subjective	<ul style="list-style-type: none">- May miss some alterations (e.g. base substitutions, indels)	<ul style="list-style-type: none">- Sensitive to contamination	<ul style="list-style-type: none">- Assesses specific hotspots with short reads (pyrosequencing)
<ul style="list-style-type: none">- Can only evaluate one or a small number of targets at a time	<ul style="list-style-type: none">- More expensive than IHC	<ul style="list-style-type: none">- Short reads	<ul style="list-style-type: none">- Pure DNA sample required (Sanger)

IHC: immunohistochemistry; ISH: in situ hybridisation; PCR: polymerase chain reaction.

1. de Matos, L.L., et al. (2010) *Biomark Insights* 5:9-20; 2. To, K.F., et al. (2013) *J Thorac Oncol* 8:883-91; 3. Wolff, D.J., et al. (2007) *J Mol Diagn* 9:134-43; 4. Ross, J.S., et al. (2016) *Cancer* 122: 2654-62; 5. Frampton, G.M., et al. (2013) *Nat Biotechnol* 31:1023-31; 6. Hu, L., et al. (2014) *Biomarker Res* 2:1-13; 7. NCCN NSCLC Guidelines V4.2019; 8. U.S Food and Drug Administration. List of Cleared or Approved Companion Diagnostic Devices. Available at: <https://www.fda.gov/MedicalDevices/ProductsandMedicalProcedures/InVitroDiagnostics/ucm301431.htm> (Accessed June 2019); 9. Garibyan, L. and Avashia, N. (2013) *J Invest Dermatol* 133:e6; 10. Hempelmann, J.A., et al. (2018) *J Immunother Cancer* 6:29; 11. Debode, F., et al. (2017) *Biotechnol Agron Soc Environ* 21:3-11; 12. Harrington, C.T., et al. (2013) *Arch Pathol Lab Med* 137:1296-303; 13. Stranneheim H., et al. (2012) *Biotechnol J* 7:1063-1073.

Genomic profiling & the alternative liquid biopsy

Liquid biopsy



Liquid biopsy

e.g. blood, urine, saliva or cerebrospinal fluid^{1,2,4}

- **Not yet comparable to solid biopsy with respect to evidence for clinical utility and applicability in initial cancer diagnosis and management^{2,5,6}**
- + Less invasive than solid biopsy^{1,2}
- + May be used when tissue biopsies cannot be performed due to inaccessibility^{1,4}
- + Provides an option when tissue samples are limited or exhausted¹
- + Requires less surgical infrastructure and has shorter turn-around time than tissue biopsy^{9,5}
- + Is suitable for repeat sampling during longitudinal monitoring^{2,5}
- + Can capture the genomic heterogeneity of all cancerous lesions¹⁰



1. Francis, G. & Stein, S. (2015) *Int J Mol Sci* 16:14122-42; 2. De Rubis, G., et al. (2019) *Trends Pharmacol Sci* 40:172-86; 3. Chouaid, C., et al., (2014) *Lung Cancer* 86:170-3; 4. Bardelli, A., et al. (2017) *Cell* 171:172-9; 5. Wan, J.C.M., et al., (2017) *Nat Rev Cancer* 17:223-38; 6. Mattox, A.K. (2019) *Sci Transl Med* 11:eeay1984; 7. Kato, S., et al. (2017) *Cancer Res* 77:4238-46; 8. Stevenson, M., et al. (2014) *Cancer Invest* 32:291-8; 9. Temilola, D.O., et al. (2019) *Cells*, 8, 862; doi:10.3390/cells8080862; 10. Scherer, F. (2020) in *Recent Results in Cancer Research: Tumor Liquid Biopsies*. Springer.

CGP has low budget impact and potential to use healthcare resources more efficiently

In relation to cost and turnaround time

CGP may result in cost off-set

Through reduced hospitalization and emergency visits¹⁻²

Inpatient cost: - 47%¹

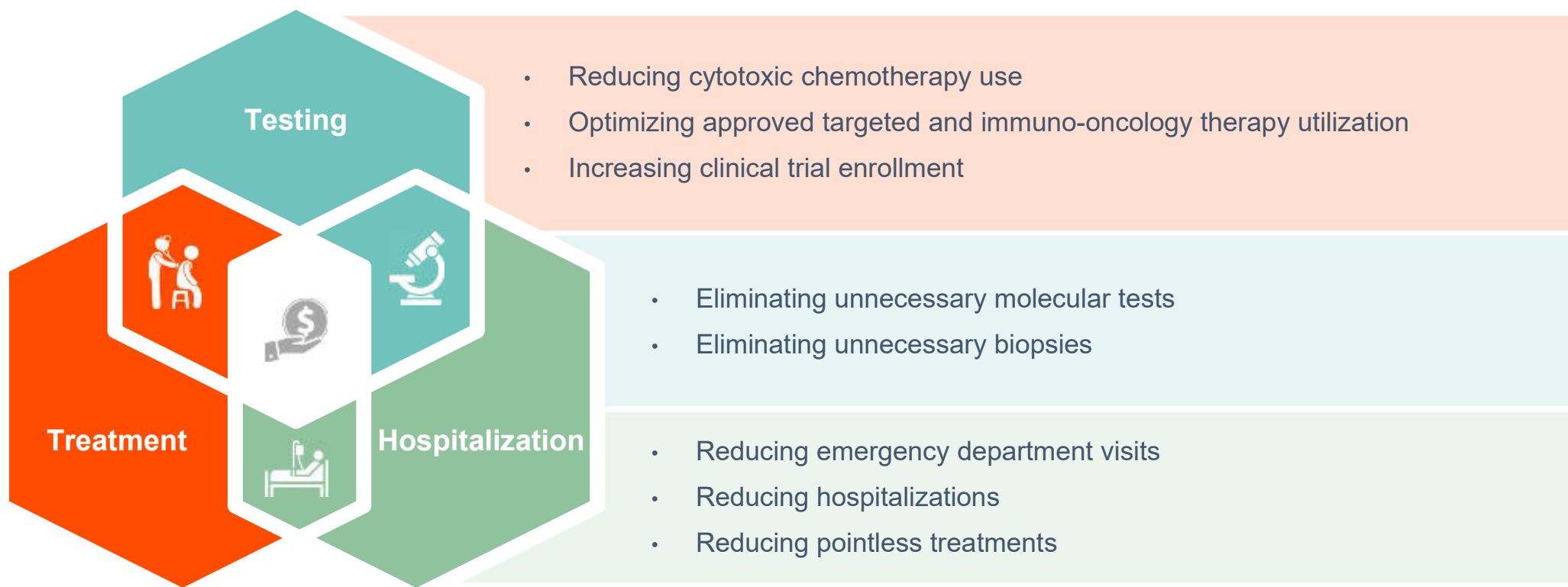


	Non-Precision therapy (%)	Precision therapy (%)	
Total patients²	138	45	
Patients with ER visits	23%	18%	↓ -22%
Patients hospitalized	44%	31%	↓ -29%
Number of ER visits	33%	22%	↓ -33%
Number of hospitalization events	62%	56%	↓ -10%

1. Haslem DS, et al. *Oncotarget* 2018 9:12316-12322. 2. Yencho SW (2020). Healthcare Utilization Impact of Precision Therapeutics: Hospitalization/Emergency visits. *Cancer Sci Res* 2020 Vol 3 Issue 2

CGP may result in cost savings ¹⁻⁷

Additional cost for CGP and testing off-set by healthcare system cost-effectiveness¹



1. Haslem DS, et al. Oncotarget 2018 9:12316–12322; 2. Pennell NA, et al. JCO Precision Oncol 2019;3; Available at: <https://ascopubs.org/doi/pdf/10.1200/PQ.18.00356>; Accessed June 2020; 3. Nesline MK, et al. Oncotarget 2019; 10:4616–4629; 4. Reitsma M. et al. J Manag Care Spec Pharm 2019; 25: 601–611; 5. Signorovitch J, et al. J Clin Oncol 2017; 35 (Suppl 15): 6599–6599; 6 Conway J and Marino I. Am J Manag Care 2016; 22 (Suppl 12): SP439–SP443; 7. Anhorn R, et al. Value Health 2017; 20: A575; 8. Herrero Fernandez M et al, Frontiers in Pharmacology 2019, 10:1210 9. Saiyed MM J of Clinical Pharmacy and Therapeutics, 2017 Jun;42(3):251-258.

Reimbursement of Biomarkers in Greece

The current situation, trends & prospects



Legal Framework in Greece

FEK 1511/b/06.06.2014



ΕΦΗΜΕΡΙΣ ΤΗΣ ΚΥΒΕΡΝΗΣΕΩΣ

ΤΗΣ ΕΛΛΗΝΙΚΗΣ ΔΗΜΟΚΡΑΤΙΑΣ

ΤΕΥΧΟΣ ΔΕΥΤΕΡΟ

Αρ. Φύλλου 1511

6 Ιουνίου 2014

ΑΠΟΦΑΣΕΙΣ

Αριθμ. 49516

Διατάξεις Συνταγογράφησης και Αποζημίωσης
Ογκολογικών Φαρμάκων.

Ο ΥΠΟΥΡΓΟΣ ΥΓΕΙΑΣ

(1)



20445

ΒΙΟΔΕΙΚΤΗΣ	ΕΙΔΟΣ ΚΑΡΚΙΝΟΥ ΤΟΥ ΟΠΟΙΟΥ Η ΘΕΡΑΠΕΙΑ ΕΞΑΡΤΑΤΑΙ ΑΠΟ ΤΟ ΑΠΟΤΕΛΕΣΜΑ ΤΟΥ ΒΙΟΔΕΙΚΤΗ	ΤΙΜΗ (ΕΥΡΩ)
ΑΝΙΧΝΕΥΣΗ ΜΕΤΑΛΛΑΣΕΩΝ ΚΡΑΣ (ΕΞΩΝΙΑ 2,3,4) ΣΕ ΙΣΤΟΛΟΓΙΚΟ (ΚΥΒΟΣ ΠΑΡΑΦΙΝΗΣ) Η ΚΥΤΤΑΡΟΛΟΓΙΚΟ ΥΛΙΚΟ	ΚΑΡΚΙΝΟΣ ΠΑΧΕΟΥ ΒΝΤΕΡΟΥ ΚΑΙ ΜΗ-ΜΙΚΡΟΚΥΤΤΑΡΙΚΟ ΚΑΡΚΙΝΩΜΑ ΠΝΕΥΜΟΝΟΣ	160
ΑΝΙΧΝΕΥΣΗ ΜΕΤΑΛΛΑΣΕΩΝ ΝΡΑΣ (2,3,4) ΣΕ ΙΣΤΟΛΟΓΙΚΟ Η ΚΥΤΤΑΡΟΛΟΓΙΚΟ ΥΛΙΚΟ	ΚΑΡΚΙΝΟΣ ΠΑΧΕΟΥ ΒΝΤΕΡΟΥ	160
ΑΝΑΛΥΣΗ ΜΙΚΡΟΔΡΥΦΟΡΙΚΗΣ ΑΣΤΑΘΕΙΑΣ DNA ΟΓΚΟΥ (MSI)	ΚΑΡΚΙΝΟΣ ΠΑΧΕΟΥ ΒΝΤΕΡΟΥ	120
ΑΝΟΣΟΣΤΟΧΗΜΙΚΗ ΜΕΛΕΤΗ ΜΙΚΡΟΔΡΥΦΟΡΙΚΗΣ ΑΣΤΑΘΕΙΑΣ ΣΕ ΙΣΤΟΛΟΓΙΚΟ ΥΛΙΚΟ (4 ΑΝΤΙΣΩΜΑΤΑ)	ΚΑΡΚΙΝΟΣ ΠΑΧΕΟΥ ΒΝΤΕΡΟΥ	80
ΑΝΙΧΝΕΥΣΗ ΜΕΤΑΛΛΑΣΕΩΝ ΓΟΝΙΔΙΟΥ Ε3F8 (ΕΞΩΝΙΑ 18,19,20,21) ΣΕ ΙΣΤΟΛΟΓΙΚΟ ΥΛΙΚΟ	ΜΗ-ΜΙΚΡΟΚΥΤΤΑΡΙΚΟ ΚΑΡΚΙΝΩΜΑ ΠΝΕΥΜΟΝΟΣ	160
ΑΝΙΧΝΕΥΣΗ ΑΝΤΙΜΕΤΑΘΕΣΗΣ ΓΟΝΙΔΙΟΥ ALK ΣΕ ΙΣΤΟΛΟΓΙΚΟ ΥΛΙΚΟ ΜΕ IN SITU ΙΒΡΙΔΙΣΜΟ	ΜΗ-ΜΙΚΡΟΚΥΤΤΑΡΙΚΟ ΚΑΡΚΙΝΩΜΑ ΠΝΕΥΜΟΝΟΣ	120
ΑΝΙΧΝΕΥΣΗ ΑΝΤΙΜΕΤΑΘΕΣΗΣ ΓΟΝΙΔΙΟΥ ALK ΣΕ ΙΣΤΟΛΟΓΙΚΟ ΥΛΙΚΟ ΜΕ ΑΝΟΣΟΣΤΟΧΗΜΕΙΑ	ΜΗ-ΜΙΚΡΟΚΥΤΤΑΡΙΚΟ ΚΑΡΚΙΝΩΜΑ ΠΝΕΥΜΟΝΟΣ	40
ΑΝΙΧΝΕΥΣΗ ΜΕΤΑΛΛΑΣΗΣ ΒΡΑΦ V600E (εξώνια 11,15) ΣΕ ΙΣΤΟΛΟΓΙΚΟ ΥΛΙΚΟ	ΜΕΛΑΝΩΜΑ	130 (το ένα 79)
ΑΝΙΧΝΕΥΣΗ ΥΠΕΡΕΚΦΡΑΣΗΣ Η ΜΕΤΑΛΛΑΣΕΩΝ ΣΤΑ ΓΟΝΙΔΙΑ C-KIT/PDGFR	ΣΤΡΩΜΑΤΙΚΟΙ ΟΓΚΟΙ ΓΑΣΤΡΕΝΤΕΡΙΚΟΥ	70 ΑΝΑ ΜΕΤΑΛΛΑΞΗ
ΑΝΟΣΟΣΤΟΧΗΜΙΚΗ ΜΕΛΕΤΗ ΥΠΕΡΕΚΦΡΑΣΗΣ HER2 ΓΟΝΙΔΙΟΥ	ΚΑΡΚΙΝΟΣ ΜΑΣΤΟΥ ΚΑΙ ΣΤΟΜΑΧΙ	40
ΜΕΛΕΤΗ ΥΠΕΡΕΚΦΡΑΣΗΣ HER2 ΓΟΝΙΔΙΟΥ ΜΕ IN SITU ΙΒΡΙΔΙΣΜΟ (ISH, FISH)	ΚΑΡΚΙΝΟΣ ΜΑΣΤΟΥ ΚΑΙ ΣΤΟΜΑΧΙ	150
ΑΝΟΣΟΣΤΟΧΗΜΙΚΗ ΜΕΛΕΤΗ ΟΙΣΤΡΟΓΟΝΙΚΩΝ ΚΑΙ ΠΡΟΓΕΝΕΣΤΟΝΙΚΩΝ ΥΠΟΔΟΧΕΩΝ	ΚΑΡΚΙΝΟΣ ΜΑΣΤΟΥ ΚΑΙ ΩΘΗΚΩΝ	40
ΑΝΙΧΝΕΥΣΗ ΑΝΤΙΜΕΤΑΘΕΣΗΣ Bcr-Abl ΜΕ RT-PCR	ΧΡΟΝΙΑ ΜΥΕΛΟΓΕΝΗΣ ΛΕΥΧΑΙΜΙΑ	120
ΑΝΟΣΟΣΤΟΧΗΜΙΚΗ ΑΝΙΧΝΕΥΣΗ (6 ΑΝΤΙΔΡΑΣΤΗΡΙΑ) ΛΕΜΦΩΜΑΤΩΝ	ΛΕΜΦΩΜΑΤΑ	120 ΟΛΑ (ΓΙΑ ΚΑΘΕ ΕΝΑ ΞΕΧΩΡΙΣΤΑ 20)
ΑΝΙΧΝΕΥΣΗ ΧΙΜΑΙΡΙΚΩΝ ΜΕΤΑΓΡΑΦΩΝ BCR/ABL ΜΕ ΠΟΣΟΤΙΚΗ PCR	ΧΡΟΝΙΑ ΚΑΙ ΟΞΕΙΑ ΜΥΕΛΟΓΕΝΗΣ ΛΕΥΧΑΙΜΙΑ, ΜΥΕΛΟΥΠΕΡΠΛΑΣΤΙΚΑ ΝΕΟΠΛΑΣΜΑΤΑ, ΟΞΕΙΑ ΛΕΜΦΟΒΛΑΣΤΙΚΗ ΛΕΥΧΑΙΜΙΑ	80
ΑΝΙΧΝΕΥΣΗ ΧΙΜΑΙΡΙΚΩΝ ΜΕΤΑΓΡΑΦΩΝ BCR/ABL ΜΕ ΠΟΣΟΤΙΚΗ REAL-TIME PCR	ΧΡΟΝΙΑ ΚΑΙ ΟΞΕΙΑ ΜΥΕΛΟΓΕΝΗΣ ΛΕΥΧΑΙΜΙΑ, ΜΥΕΛΟΥΠΕΡΠΛΑΣΤΙΚΑ ΝΕΟΠΛΑΣΜΑΤΑ, ΟΞΕΙΑ ΛΕΜΦΟΒΛΑΣΤΙΚΗ ΛΕΥΧΑΙΜΙΑ	120
ΑΝΙΧΝΕΥΣΗ ΧΙΜΑΙΡΙΚΩΝ ΜΕΤΑΓΡΑΦΩΝ PML/RARA ΜΕ ΠΟΣΟΤΙΚΗ PCR	ΟΞΕΙΑ ΜΥΕΛΟΓΕΝΗΣ ΛΕΥΧΑΙΜΙΑ	80
ΑΝΙΧΝΕΥΣΗ ΧΙΜΑΙΡΙΚΩΝ ΜΕΤΑΓΡΑΦΩΝ PML/RARA ΜΕ ΠΟΣΟΤΙΚΗ REAL-TIME PCR	ΟΞΕΙΑ ΜΥΕΛΟΓΕΝΗΣ ΛΕΥΧΑΙΜΙΑ	120
ΑΝΙΧΝΕΥΣΗ ΜΕΤΑΛΛΑΣΕΩΝ JAK2/V617F ΜΕ ΑΛΗΘΟΕΙΔΙΚΗ PCR	ΜΥΕΛΟΥΠΕΡΠΛΑΣΤΙΚΑ ΝΕΟΠΛΑΣΜΑΤΑ	80
ΚΑΡΥΟΤΥΠΟΣ ΜΥΕΛΟΥΠΕΡΦΕΡΙΚΟΥ ΑΙΜΑΤΟΣ ΑΣΘΕΝΩΝ ΜΕ ΚΑΚΟΕΙΔΗ ΝΟΣΗΜΑΤΑ ΜΕ ΤΗ ΧΡΗΣΗ ΜΙΤΟΓΟΝΩΝ (καλ. 24, 48, 72 ώρες)	ΧΡΟΝΙΑ ΚΑΙ ΟΞΕΙΑ ΜΥΕΛΟΓΕΝΗΣ ΛΕΥΧΑΙΜΙΑ ΜΥΕΛΟΔΥΣΠΛΑΣΤΙΚΟ ΣΥΝΔΡΟΜΟ, ΜΥΕΛΟΥΠΕΡΠΛΑΣΤΙΚΑ ΝΕΟΠΛΑΣΜΑΤΑ	160
ΜΟΡΑΚΗ ΚΥΤΤΑΡΟΓΕΝΕΤΙΚΗ ΜΕΛΕΤΗ (FISH) ΜΕ ΧΡΗΣΗ ΜΟΝΑΔΙΚΟΥ ΑΝΙΧΝΕΥΤΗ	ΟΞΕΙΑ ΜΥΕΛΟΓΕΝΗΣ ΛΕΥΧΑΙΜΙΑ ΚΑΙ ΜΥΕΛΟΔΥΣΠΛΑΣΤΙΚΑ ΣΥΝΔΡΟΜΑ	150 (Για κάθε επιπέδον ανιχνευτή 80)



A Biomarkers HTA procedure is necessary

As payers have become more critical and put more weight on examining the added value of a diagnostic when making coverage decisions, the need for HTA has increased.



Evaluating the health outcomes of biomarkers is **particularly challenging** because diagnostics themselves do not influence long-term outcomes directly but rather impact the subsequent care process



In examining the effectiveness of a diagnostic biomarker, one needs to take into account

-
- (1) the **accuracy** of the diagnostic test,
 - (2) the **impact** of the diagnostic on therapeutic decisions and
 - (3) the **effectiveness** of the therapies selected



An HTA can be characterized by 3 phases:

-
- Assessment:** critical review of scientific evidence
- Appraisal:** review of the assessment with consideration of all other (policy) factors make a recommendation
- Decision-making:** implementation of the recommendation

What are the main questions that we have to address towards to a “good” HTA process

A list of possible questions

Organization:

- How is the HTA body regulated?
- What is the relationship with MoH?
- Are there legal or policy constraints?



Methods & processes:

- What domains are assessed (e.g. clinical, ethical, economic)?
- How are analyses conducted?

Dissemination:

- In what timeframe?
- To whom are the recommendations given?
- What is the content of communication?



Area of Authority:

- What technologies require a decision?
- What assessments are required?
- How are third parties (e.g EOPE, PAGs) involved?
- What is the level of transparency and accountability?



Decision:

- Is an expert committee required?
- What is the link to the decision-maker?
- What are the values of the decision-maker?

Implementation:

- How are decisions implemented?
- What is the result of a recommendation?

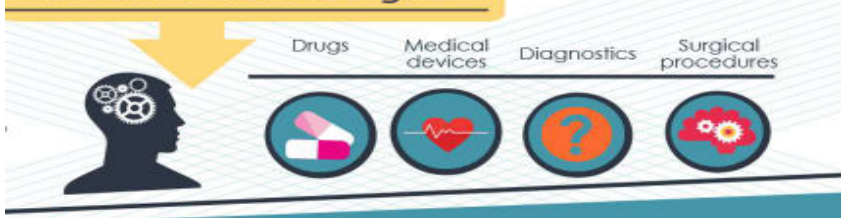


Impact:

- Who is being impacted?
- What is a relevant measure of impact?
- What are the decision outputs?



Health Technologies



Doing now what patients need next