Digital tools for precision oncology

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The case for digital drug assignement in precision oncology

- Cancers harbor multiple drivers (4-5), and the efficacy of most drugs is influenced by multiple predictive parameters.

- Low concordance of treatment recommendations by MTBs based on the same molecular test results*

- Single biomarker paradigm → Multi-parametric approach

+ Limited access to expertise provided by MTBs in remote regions and nonacademic centers

* e.g. Rieke et al. 2018, Kage et al. 2021, Rieke et al. 2020

Multiparameter-based digital drug-assignment for treatment planning in precision oncology

RealTime Oncology Treatment Calculator

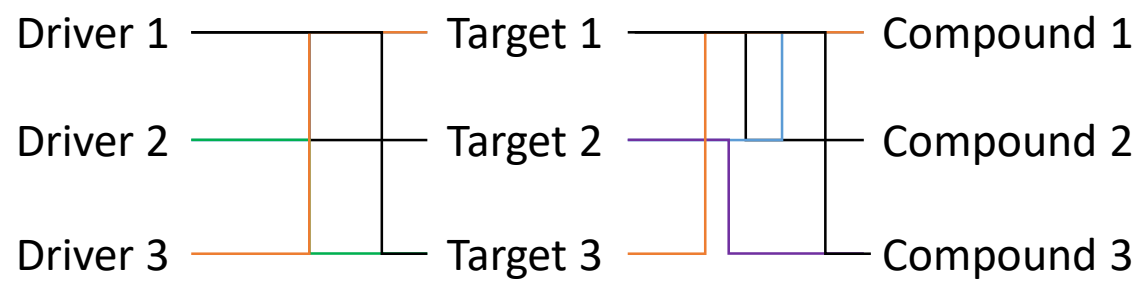Tumor type, molecular alterations (SNV, CNV, TMB, MSI, IHC, FISH)

Any NGS Panels e.g. FMI reports

Evidence-based network of associations and algorithms

Personalized, prioritized list of compounds

- ✓ **Explainable**
- ✓ **Evidence-based**
- ✓ **Reproducible**

Driver 1 — Target 1 — Compound 1

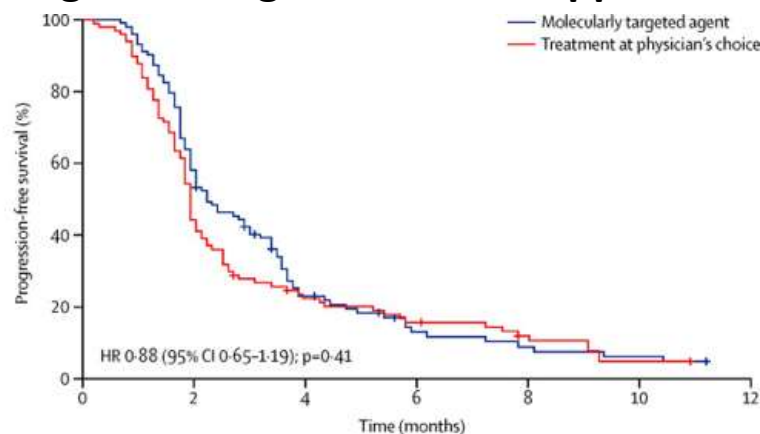Driver 2 — Target 2 — Compound 2

Driver 3 — Target 3 — Compound 3

AEL

Aggregated Evidence Level

represents the number, scientific impact and clinical relevance of evidence relations connecting tumor types, molecular alterations, targets and compounds
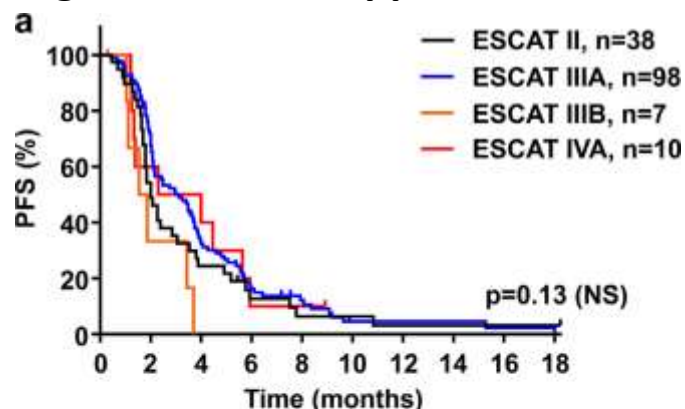
HNN3.0
HEALTH-NCP-NET

Validation by SHIVA01 clinical trial data

Original – single biomarker approach by picking

Legend: Molecularly targeted agent / Treatment at physician's choice

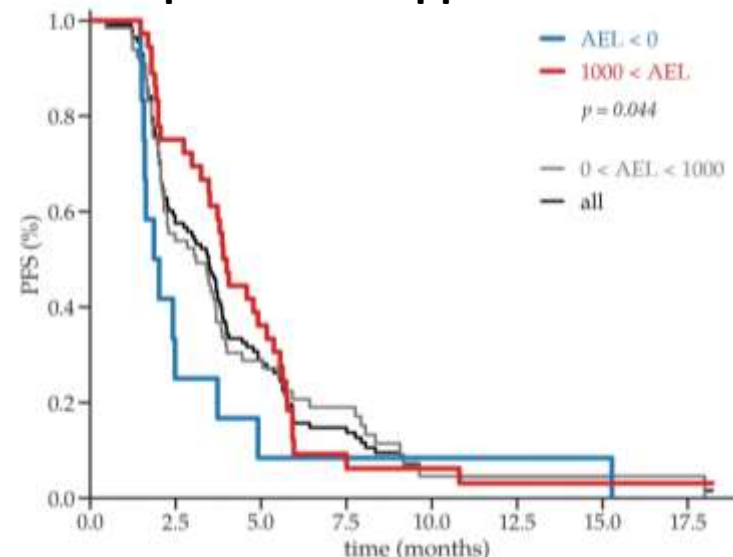*Le Tourneau et al. Lancet Oncol. 2015 Oct;16(13):1324-34.*

Reanalysis by ESCAT categories
- single biomarker approach

Moreira et al European Journal of Cancer, Volume 121, 202 – 209. 2019

RealTime Oncology TC
– multiparametric approach

Petak et al. NPJ Precis Oncol. 2021 Jun 23;5(1):59.

Patients with high AEL treatment had longer PFS

RealTime Oncology Treatment Calculator
a reporting method that correlates with outcome

Utility of RealTime Oncology today

ONCOMPASS™ Medicine

Winner of DIGITALEUROPE's Future Unicorn Award:
The most promising European technology company with a future value of more than $ 1 billion.

Future Unicorn Award

Winner of the GET IN THE RING Global Start Up competition, Health category 2020/21

- **Decision between treatment options at the same evidence level**
(e.g. with same ESCAT category)

- **Decision between multiple <u>on-label</u> molecularly targeted agents registered in the same indication**

- **Decision between <u>off-label</u> molecularly targeted agents at the same evidence level**
(e.g. salvage therapy, pediatric cancers in combination with chemotherapy)

Utility is increasing with new approvals, and with the increasing complexity of input data.

Our expertise is digital tools for precision oncology

Oncompass develops an end-to-end workflow for precision oncology. We seek partners interested in developing new molecular diagnostic tools, bioinformatic solutions.

We can contribute with **our proprietary AI system for targeted therapy matching**. This system enables multiparameter-based digital drug-assignment for treatment planning in precision oncology.

HORIZON-MISS-2023-CANCER-01-03: Pragmatic clinical trials on minimally invasive diagnostics

HORIZON-HLTH-2023-IND-06-07: Development and harmonisation of methodologies for assessing digital health technologies in Europe

HORIZON-HLTH-2023-IND-06-04: Modelling and simulation to address regulatory needs in the development of orphan and paediatric medicines

HORIZON-HLTH-2023-TOOL-05-04: Better integration and use of health-related real-world and research data, including genomics, for improved clinical outcomes

HORIZON-HLTH-2023-TOOL-05-03: Integrated, multi-scale computational models of patient patho-physiology ('virtual twins') for personalised disease management

HORIZON-HLTH-2023-IND-06-02: Expanding the European Electronic Health Record exchange Format to improve interoperability within the European Health Data Space

HORIZON-HLTH-2023-TOOL-05-05: Harnessing the potential of real-time data analysis and secure Point-of-Care computing for the benefit of person-centred health and care delivery

HORIZON-MISS-2023-CANCER-01-04: Establish best practices and tools to improve the quality of life for childhood cancer patients, survivors and their families in European regions

HORIZON-MISS-2023-CANCER-01-01: Addressing poorly-understood tumour-host interactions to enhance immune system-centred treatment and care interventions in childhood, adolescent, adult and elderly cancer patients