

# Visibility & education

## Introduction: What is Precision Therapy



26-09-2024 Josef Vormoor

# **Precision Therapy: How to create awareness and continuous education**

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- 16:55 17:05 "What do we need for educating health care professionals? (short introductory talk with slides, incl. questions) J-P Bourquin (Switzerland)
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- Targeted Therapy Refers to treatments that specifically target genetic mutations or molecular markers in cancer cells.
- Molecularly Targeted Therapy Emphasizes the molecular basis of the therapy.
- Genomic Medicine Focuses on the use of genomic information to guide treatment decisions.
- Biomarker-Driven Therapy Based on the use of specific biomarkers to guide treatment.
- Stratified Medicine Involves grouping patients based on genetic or molecular characteristics to tailor treatment.
- **Personalized Medicine** Tailoring treatment to the individual characteristics of each patient.
- Individualized Therapy Highlights the customization of treatment for each patient.

#### **Precision medicine**

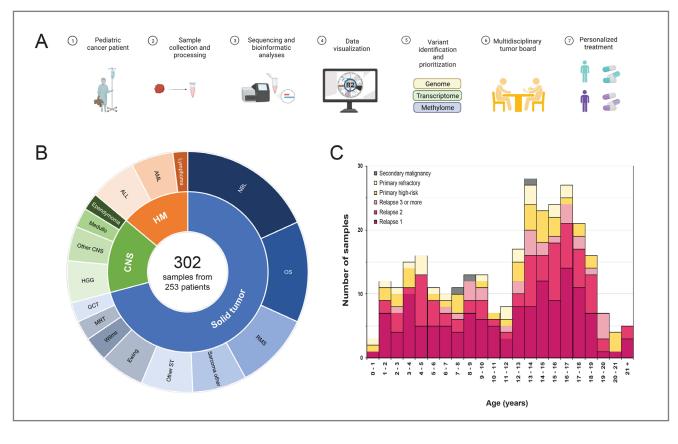
A form of medicine that uses information about a person's genes, proteins, environment, and lifestyle to prevent, diagnose, or treat disease.

#### In cancer,

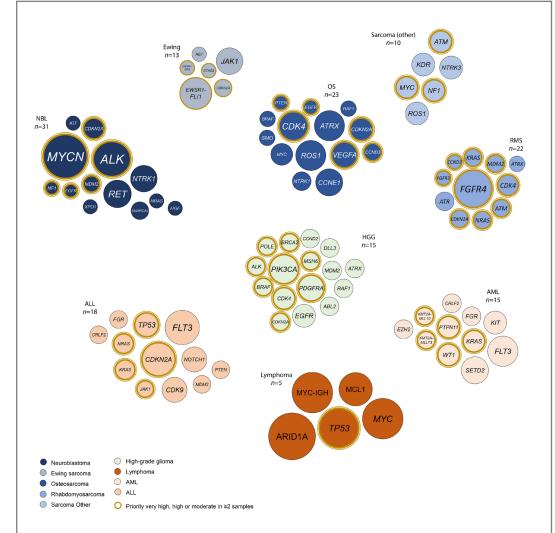
- precision medicine uses specific information about a person's tumor to help make a diagnosis, plan treatment, find out how well treatment is working, or make a prognosis.
- Precision medicine may also be used to help determine a person's risk of developing certain types of cancer.
- Examples of precision medicine include using targeted therapies to treat specific types of cancer, such as HER2-positive breast cancer, or using tumor marker testing to help diagnose cancer. Precision medicine is sometimes called personalized medicine.

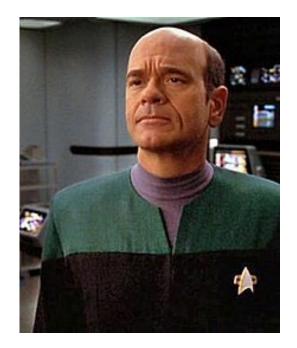
#### NCI definition

#### **Implementation of paediatric precision oncology into clinical practice:** The Individualized Therapies for Children with cancer program 'iTHER'



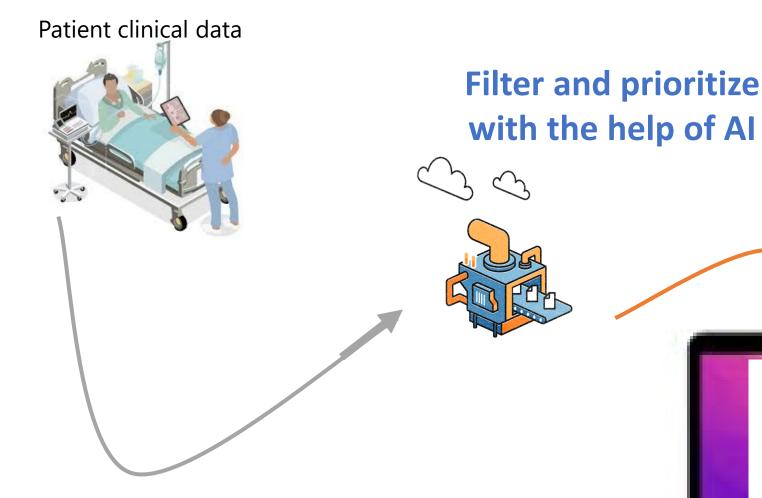
Eur J Cancer 2022 Nov:175:311-325





Artificial Intelligence to support our molecular tumour boards ?

> Emergency Medical Hologram (EMH) Start Trek: Voyager



### Search in 22 millions abstracts



Uri Ilan

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#### Tumor Board Recommendation: 14 y/o Boy with Stage IV B-LBL, BCR::ABL1 Fusion

This is a complex case of stage IV B-LBL with a BCR::ABL1 fusion presenting unique challenges due to the patient's young age and the identified PDGFRA overexpression. While the patient initially responded to the LBL 2018 protocol with imatinib, the slow response necessitates a change in treatment strategy.

Current Status:

- Diagnosis: Stage IV B-LBL, CNS negative, with vertebral, kidney, and bone involvement.
- Actionable Events:
- BCR::ABL1 fusion (t(9;22)(q34;q31))
- PDGFRA overexpression
- Treatment History:
  - LBL 2018 protocol + Imatinib (Day 15)
  - $\circ$   $\;$  Switched to BFM-HR1 (March 2023) due to slow response  $\;$
- Response to Treatment:
  - Initial reduction in BM FC-MRD and BCR::ABL1 qPCR-MRD, but slow.
- Persistent bone disease on MRI

Ask me anything!

There is more to Precison Therapy than molecular targeting

#### Precision therapy refers to

- a personalized approach to treatment, primarily in the context of medical care, where therapies are tailored to an individual's genetic makeup, lifestyle, environment, and specific characteristics of their disease.
- It focuses on customizing treatments to target the unique molecular and genetic profiles of a patient, leading to more effective and efficient care.
- This approach is commonly used in fields like oncology, where precision medicine allows treatments like targeted therapies or immunotherapies to be directed at specific mutations or pathways involved in cancer development.

Key components of precision therapy include:

**1. Genomic profiling**: Identifying specific genetic mutations or abnormalities that can guide treatment decisions.

**2. Targeted treatments**: Developing medications or therapies aimed at these specific genetic markers, rather than using a one-size-fits-all approach.

**3. Personalized care**: Considering an individual's overall health, environment, and lifestyle to create a more effective treatment plan.

**4. Ongoing monitoring**: Continuously assessing the patient's response to therapy to adjust the treatment plan as needed.

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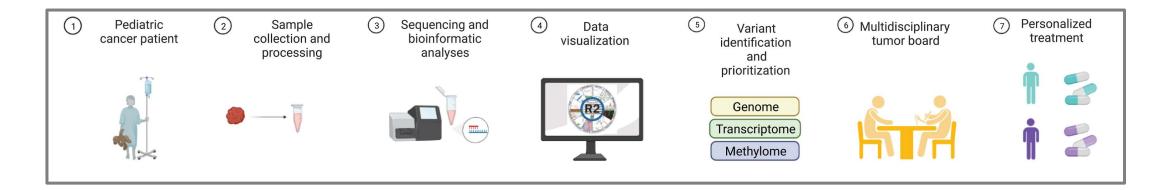
## Why precision therapy?

By focusing on individual differences in genetics, environment, and lifestyle, **precision therapy** promises

- more effective,
- efficient,
- and humane healthcare solutions.

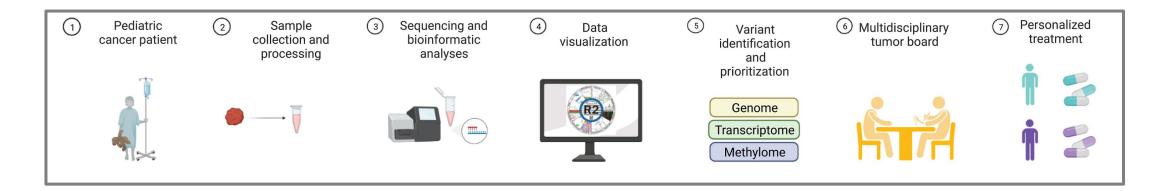
Its implementation represents a significant step forward in transforming healthcare from a generalized approach to one that prioritizes the individual.





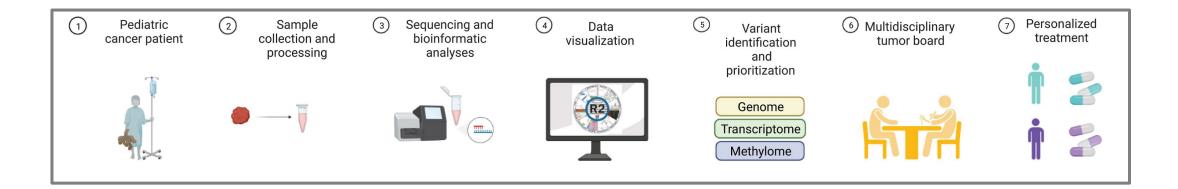
## **Precision Therapy - Bottlenecks / Challenges**

- Availability / funding for in depth molecular characterisation
- Access to specialised medical care
  - o Inequalities across Europe
  - o Social inequalities
  - o Up-to-date information on open clinical trials
  - Barriers towards patient referrals
- Access to molecular tumour boards with the right expertise (rare diseases)
- Limited availability and efficacy of targeted drugs

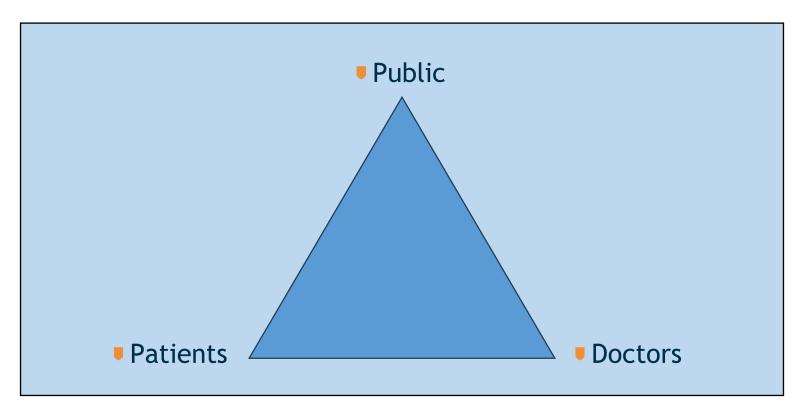


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# Thank you

