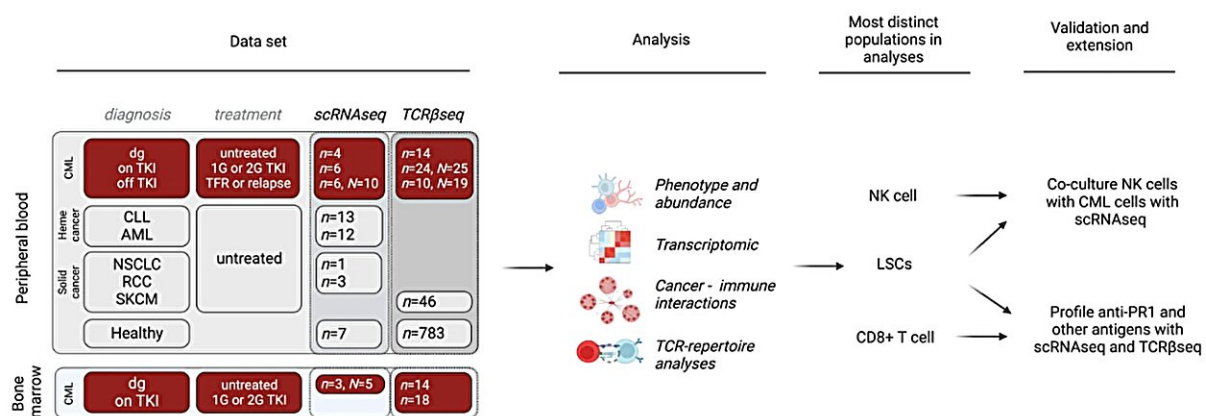


Boosting immune system in chronic myeloid leukemia may lead to discontinuation of blood cancer drugs

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Schematics showing the overview of data sets, analysis, and validation and extensions. Picture created with biorender.com. Credit: *Leukemia* (2023). DOI: 10.1038/s41375-023-02074-w

In a recent study [published](#) in *Leukemia*, Finnish researchers investigated why some patients with chronic myeloid leukemia (CML) can discontinue their daily medication safely.

CML, one of the four main types of blood cancer, affects the blood-forming cells in the bone marrow. Each year, some 50 Finns are diagnosed with CML, mostly in people of working age.

Because the onset mechanism of the disease has been accurately identified, targeted drugs ([tyrosine kinase inhibitors](#)) now ensure that only a few [patients](#) die of disease.

Researchers aim to develop the treatment of CML so that patients can discontinue their medication after a certain period. In such cases, the cancer may be considered cured.

In their recent study, the researchers compared such patients with others. Attempts at medication discontinuation succeeded more often if the patient had a favorable [immune system](#).

"Even before attempting to discontinue treatment, the successful patients had more [natural killer cells](#), or NK cells, and T cells able to detect cancer. We also explored the mechanisms of these cells for detecting tumors and found new medication potential," explains Jani Huuhtanen, a doctoral researcher and doctor specializing in hematology at the University of Helsinki, Aalto University and the HUS Comprehensive Cancer Center.

Immune system can be boosted

The results can be used to develop new treatment solutions for medication discontinuation. In fact, the research group already has experience in such trials.

"Last year, we [published](#) an article on our trial involving not only targeted treatment but also interferon-alpha treatment activating the body's immune system. Patients achieved better responses with this [combination therapy](#), which could enable a drug free life for more patients," says Huuhtanen.

"Based on these and our previous results, we believe the body's own

immune response to [cancer cells](#) must first be triggered to allow more patients to stop taking their medication," notes Satu Mustjoki of the University of Helsinki, who heads the Translational Immunology Research Program.

At present, some 40% of all CML patients have an excellent response to treatment and can thus discontinue their [medication](#).

Next, the researchers aim to further examine the mechanisms of drug discontinuation and find out whether the body's immune system can be boosted in other cancer types as well.

More information: Jani Huuhtanen et al, Single-cell analysis of immune recognition in chronic myeloid leukemia patients following tyrosine kinase inhibitor discontinuation, *Leukemia* (2023). [DOI: 10.1038/s41375-023-02074-w](#)

Provided by University of Helsinki

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