FICAN science webinar series

Wednesday 8.5.2024 at 15-16

Precision Therapy for Childhood Leukemia: Improving Outcomes and Reducing Toxicities

This time the seminar is organized by FICAN Mid. The seminar will be held online (Microsoft Teams) and is open to everyone interested in cancer research.
Chair: tba

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Speaker

prof. Olli Lohi

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Get to know the Speaker: https://www.tuni.fi/fi/olli-lohi

Abstract

Childhood acute lymphoblastic leukemia (ALL), the most common cancer among children, has traditionally been managed with chemotherapy regimens. While these treatments are effective, they often lead to significant toxicities and long-term side effects for survivors. The implementation of response-based risk grouping has been crucial in customizing therapies, thereby significantly enhancing outcomes and reducing treatment-related toxicities. The introduction of modern sequencing technologies has unveiled the complexity of the disease by identifying numerous genetically distinct subtypes, each with unique behaviors and responses to treatment. This shift towards personalized medicine is underscored by the exploration of immunotherapies and novel targeted agents for cases that relapse or show poor response, representing a considerable departure from conventional chemotherapy methods.

Our recent discovery involves the application of the general tyrosine kinase inhibitor dasatinib as a targeted treatment for both T-cell and B-cell ALL. In particular, the effectiveness of a combination therapy that included dasatinib and temsirolimus for T-ALL was shown in patient samples and preclinical animal models. Additionally, the sequential treatment of B-ALL with an inhibitor of Wee1, a cell cycle regulator, and dasatinib was effective in eliminating an escape pathway for residual leukemic cells. Furthermore, in collaboration with European partners, we have begun to delineate the genetic landscape of slow responding leukemias within the second common subtype of ALL, expected to have a favorable outcome.

The importance of international collaboration is critical in hastening the development of novel treatments for childhood leukemias. The advent of immunotherapies as a frontline therapy modality represents the next frontier, with high hopes for achieving greater efficacy and reduced harm simultaneously.

Relevant references for this talk:

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More information: The Hemato-Oncology Research Group, HemoRes

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