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New classification improves risk prediction in chronic leukemia

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If chronic lymphocytic leukemia patients with a good or poor prognosis could be identified already at the time of diagnosis, physicians would have better possibilities to adjust their therapeutic and follow-up strategies. Now researchers at Uppsala University, together with international colleagues, have discovered a new correlation between specific molecular features of the disease and subgroups of patients with different prognosis.

The results have been published in the journal *Lancet Haematology*.

Chronic lymphocytic leukemia (CLL) is an incurable tumour disease that can progress very differently in different patients. Some patients require therapy relatively soon after diagnosis whereas others can live for a long time with their disease, even without treatment. Thus, it is important to identify features of the disease that can be associated with a better or poorer prognosis. Ideally, these features would be present at diagnosis and remain stable throughout the evolution of the disease.

In the present study, researchers from Uppsala University have collaborated with international research groups and analysed samples from more than 8,500 CLL patients. These were classified into subsets based on the expression of very similar B-cell receptors in the white blood cells that grow uncontrolled in CLL. When they studied the disease course for patients in the different subsets they found a clear correlation.

"It was evident that patients within a specific subset followed the same clinical course and that this was different from patients in other subsets. For instance, patients in subset #2 showed an aggressive disease course, with an average time to first treatment of only two years. On the other hand, subset #4 patients had an indolent disease that did not require treatment until after, on average, eleven years", says Panagiotis Baliakas, MD/PhD student at the Department of Immunology, Genetics and Pathology, and one of the coordinators of the study.

Integrating the classification based on similar B-cell receptors with other prognostic markers will also refine the prognostication of CLL patients and increase the possibilities to identify patients that are at high risk already at the time of diagnosis.

"But it is also important, both for medical and psychosocial reasons, to be able to identify patients with the lowest probability of requiring treatment. Especially considering that these subsets are enriched for young patients who could be reassured about the indolent nature of their disease", says Panagiotis Baliakas.

Provided by Uppsala University

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