

## **Abstract**

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Title of diploma thesis: Prognostic significance of atypical leukemic cell morphology in chronic lymphocytic leukemia

The aim of this thesis is to evaluate the prognostic significance of atypical cell morphology and smudge cells in patients with untreated chronic lymphocytic leukemia. We performed differential leukocytes count and classified lymphocytes as typical and atypical in a cohort of 101 patients (median age, 66 years; males, 69%, Rai III/IV stages, 18%). For atypical CLL, we used the 15% threshold and 59% of patients were classified as atypical CLL (aCLL). For smudge cells, we chose the 30% threshold and 33% of patients were classified as smudge cells positive. Patients in early clinical Rai stage (0) had significantly higher number of smudge cells ( $p=0.04$ ). We didn't find a significant association between aCLL / smudge cells with modern prognostic indicators. We didn't find a relationship between aCLL and the time to first-line therapy ( $p=0.394$ ). However, patients with aCLL had a significantly shorter overall survival ( $p=0.0397$ ). There was a trend toward shorter time to first-line therapy ( $p=0.22$ ) and shorter overall survival ( $p=0.16$ ) of patients with fewer smudge cells. The results of the present thesis support the adverse prognostic impact of atypical morphology and a lower number of smudge cells in chronic lymphocytic leukemia.

**Key words:** morphology, peripheral blood, chronic lymphocytic leukemia, prognosis