**lek. Izabela Łapuć**

Temat pracy: *„Znaczenie zmian ilościowych subpopulacji monocytów w przewlekłej białaczce limfocytowej”*

## SUMMARY

Chronic lymphocytic leukemia is one of the most commonly diagnosed lymphoid malignancies, characterized by imbalance between the proliferation and apoptosis of mature, but functionally abnormal B-lymphocytes co-expressing CD5 and CD19 superficial antigens. Despite major advances in a last few years, pathogenesis remains still unclear. CLL is very heterogenous leukemia; observed with a paradoxical deregulation of each part of immune system, in particular monocytes and monocyte-derived cells.

To date, literature data indicate a crucial role of monocytes in the promotion and progression of cancer, especially in solid tumors. However, less data is available on the role of monocytes and especially their subclasses in hematological diseases including CLL.

Therefore, the main object of the current study was to perform quantitative and phenotypic assessment of three main monocyte subsets: classical CD14++CD16-, intermediate CD14++CD16- and non-classical CD14+CD16++ and levels of membrane-associated and soluble forms of CD163 in CLL patients, at the time of diagnosis and at different disease stages according to Rai classification and at the end of immune chemotherapy (FCR).

We recruited fifty-six newly diagnosed CLL patients with stable and progressive disease and age-matched healthy controls. Freshly obtained whole blood was tested using multi-color flow cytometry and ELISA. Statistical analysis was done and correlated with wildly known molecular, biochemical and cellular prognostic factors. The study was conducted at the Department of Hematology, Department of Hematological Diagnostic and Department of Regenerative Medicine and Immune Regulation of Medical University of Bialystok.

The study established lack of significant differences in absolute counts of monocyte subsets in patients at different stages of the disease according to Rai classification. Notably, in a group of patient qualified to “watch and wait” strategy, we found that lower baseline levels of classical CD14++CD16- monocytes may be negative predictive factors of time to initial treatment. Interestingly, following FCR immune chemotherapy, the study established significant reduction of

pro-inflammatory non-classical CD14+CD16++ monocytes and soluble form of CD163 as well as up-regulation of membrane-associated CD163.

Altogether, these data can help to explain potential relationship between monocytes and pathogenesis of CLL and response to anti-CLL treatment. Our data showed that enumeration of classical monocytes can potentially serve in CLL as a prognostic factor of disease progression. We also demonstrated that frequently underappreciated anti-inflammatory effects of immunochemotherapy warrant further investigation.