

## Flow cytometric immunophenotyping of clinically diagnosed chronic lymphocytic leukaemia in a Bangladeshi patient population

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**Introduction:** Chronic Lymphocytic Leukaemia (CLL) is a clonal B-cell neoplasm of mature cells whose diagnosis is based on clinical manifestations, cell morphology and Immunophenotyping. It is generally accepted that any lymphocytosis superior to 5000/cmm in an adult person and without any other evident cause, must raise the suspicion of a CLL diagnosis. The most reliable methodology for the diagnosis of CLL is Immunophenotyping by Flow Cytometric.

**Objective:** The aim of this study was to evaluate the application of multipara metric Flow Cytometry Immunophenotyping (FCI) as a standard methodology for the confirmation of or exclusion of CLL diagnosis in clinically suspected CLL patients.

**Patients and Methods:** Four colour flow cytometry multipara metric immunophenotyping method was used in EDTA peripheral blood samples taken from 25 consecutive patients diagnosed preliminary as CLL through clinical data, complete blood count, peripheral blood film and bone marrow examination. The following fluorescent monoclonal antibodies were used: CD19, CD5, CD20, CD22, CD23, CD79b, CD79a, FMC7, Kappa and Lambda light chains, CD10, CD11c, CD3, CD7, CD25, CD30, CD56, CD95, BCL2, and CD34. Marker of immaturity CD34 was added to exclude blast cells. The flow cytometric analysis was performed on a Beckman coulter cytomics FC500 flow cytometer using software CXP to analyze data. Appropriate isotype control studies to determine background fluorescence were also used.

**Result :** Among 25 patients, 4(16%) showed normal T-cell population (CD3+,CD5+,CD7+), while 21(84%) showed pathological B-cell lines. From these, 16(64%) of 25 patients expressed typical CLL markers (CD19+,CD5,CD23, FMC7-, Kappa or Lambda light chain restriction) whilst 5(20%) of them showed B-cell prolymphocytic leukaemia profile (CD19+,CD5+/-,CD23-,FMC7+, Kappa or Lambda light chain restriction).

**Conclusion :** Flow cytometry immunophenotyping is a fundamental laboratory method without which final diagnosis of CLL cannot be established.