Chronic Lymphocytic Leukemia Diagnosis and Prognosis: A Descriptive Analysis for 41 Patients

Amina abd Alwahed[1], MD, Neemat Kassem[2], MD, Azza Sobeih[1], MD, Riham Abdalreheem[1], MD, Amr Ahmed[3], MD, Shaimaa Farouk[4], MD, Hatem Nasrat[3], MD, Basant Nagy[3], MD.*

** Department of Clinical Pathology*
(1) Section of Hematology
(2) Section of Immunology
(3) Section of Clinical Chemistry.
(4) Department of Clinical oncology
Kasr Alaini School of Medicine , Cairo University , Egypt

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Background

The new guidelines from the International Workshop on Chronic Lymphocytic Leukaemia (IWCLL) have important implications for diagnosis, identification of prognostic factors and assessment of the patient's response to treatment, and demonstrate the increasing importance of the haematopathology laboratory in the management of individual patients with chronic lymphocytic leukemia (CLL) (**Hallek M, Cheson BD, Catovsky D et al; 2008**).They emphasize the key role played by a range of investigations, such as Flow cytometric immunophenotyping and fluorescence in situ hybridization (FISH) analysis. Immunophenotyping (IPT) is indispensable for the diagnosis of mature B-cell lymphoid neoplasms through the identification of phenotypically abnormal cells belonging to the B-cell lineage and recognition of phenotypes characteristic of separate disease entities. In addition, flow cytometry can be used to identify expression of targets for potential antibody-directed therapy such as CD52, CD23 and CD80 and provide some additional prognostic information such as CD38 expression in chronic lymphocytic leukemia/small lymphocytic lymphoma (CLL/SLL) (**Fiona E. Craig and Kenneth A. Foon, 2008**). In 2000, Döhner and colleagues used FISH analysis to demonstrate del 13q14, del 11q22 and del 17p13 in patients with CLL. Del 13q14, appeared to define patients with favourable-risk CLL but del 11q22 and del 17p13 (loss of p53) were associated with significantly adverse outcomes. Trisomy 12 is also common in CLL (about 16% of patients), but it seems to have a relatively neutral effect on outcome.

Aim

Prognostic factors analysis (IPT and FISH) should be used to identify patients who are likely to have a good outcome as well as those expected to have an adverse outcome.

Patients and Methods

We retrospectively analyzed IPT of 41 CLL patients presented to our unit from February 2006 through March 2009. Flow cytometry was performed for all CLL cases using the standard protocols (CD 5/19, CD23, FMC7, CD79b, kappa/lambda and CD38). Florescence labeled antibodies were obtained from (Becton Dickinson, U.S.A) and run on FACSCALIBER using CELLQUEST software.
Chromosomal cultures was available for 10 CLL patients on which FISH analysis was done to detect del 13q14, del 17p13 and Trisomy 12.Twenty four (58.8%) patients were Males and 17(41.5%) Females; Median age 55(range 44-71).

Results

According to the CLL scoring system 38(92.3%) patients were in score 5 and 3(7.3%) in score 4. CD38 was expressed in 19(46.4%) out of 41 patients and 22(53.4%) were negative. Del 13q14; del 17p13 (P53) ; Trisomy 12 done by FISH on the available cultures was found positive in 6 (60%); 2(20%) and 4(40%) out of 10 patients respectively and were found negative in 4(40%),8(80%),6(60%) respectively.