

Forefront Clinical Timeline on Chronic Lymphocytic Leukemia

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Abstract: Hematopoiesis is blood regulatory mechanism which is characterized by a rapid and continuous turnover of blood cells. If this mechanism is disrupted and blood cells can proliferate in uncontrolled manner called, hematopoietic malignancies which is coined leukemia. Leukemia is a kind of neoplastic proliferation of granulocytes or monocytes or lymphocytes or infrequently RBCs and most common type of leukemia is chronic lymphocytic leukemia (CLL). Annually, 15,000 patients are diagnosed for CLL and 5000 deaths due to CLL are reported in United States. Although its diagnostics and therapeutic choices were limited but its treatment has been well improved and clinical selective in the last decade to protracted its remissions or cure in patients.

Keywords: Leukemia, Hematopoiesis; Chronic lymphocytic leukemia (CLL)

1. INTRODUCTION

Chronic lymphocytic leukemia (CLL) is reported as the most common leukemia diagnosed in the Western world especially in United States. Chemoimmunotherapy is the only standard first-line option clinical accepted approach to treat symptomatic CLL in adults¹.

Improved cancer biology and molecular diagnostics have resulted in better risk stratification of CLL and to design the clinical strategy of its treatment especially, interpretation of expression of phosphoprotein CD-20 on the surface of B cells. Targeting of this molecule with immunotherapy has led to improved CLL survival rate when used with conventional chemotherapy treatments³.

Recently, that most of the CLL patients were observed to have a preceding Monoclonal B Lymphocytes (MBL) phase and with high initial lymphocyte counts that lead to progression to CLL with fast pace⁴. Chronic lymphocytic leukemia does not require any specific adulteration in treatment until associated symptoms develop or the disease progresses causing severe cytopenia⁵.

Various clinical and molecular characteristic features are noticed as the most predictive frame to study clinical course of CLL that can be better used for its risk stratification⁶. And these reported factors or agents were bruton tyrosine kinase inhibitor 'ibrutinib' and the phosphatidylinositol 3-kinase (PI3K) inhibitor 'idelalisib' which include drugs especially, targeting the antiapoptotic protein BCL-232 and anti-CD20 antibodies that lead better CLL cell killing^{7,8}.

As per the reported German guidelines, CLL Study Group is classified the CLL patients as fit or unfit based on their renal function on the basis of the cumulative illness rating scale and then, the treatment regimens are further adjusted for the patients⁸. Other recorded studies have been explored for the use of potent immunomodulatory agent e.g. lenalidomide to treat old aged CLL patients as lenalidomide monotherapy on an escalated dosing schedule in combination of geriatric and comorbidity assessments with median follow-up of 4 years which lead to overall survival of 82% in treated patients⁹.

As well as, accordingly, German CLL Study Group' has been conducted a prospective phase-3 randomized trial comparing chlorambucil alone or with chlorambucil plus either rituximab or obinutuzumab in CLL patients who had coexisting morbidities due to have defined decreased glomerular filtration rate¹⁰. Those CLL patients who were observed for less responding to the steroid treatment, the use of cyclosporine or mycophenolate with the moderate combination of rituximab, cyclophosphamide and dexamethasone were found to be proved effective to treat CLL patients those have associated unmanageable AIHA (Autoimmune Hemolytic Anemia)¹¹.

2. CONCLUSION

This precise short-review article can be very useful to define the clinical outline of Chronic lymphocytic leukemia (CLL) with expected clinical predictions of its associated prognostic factors and improved conventional treatment in future prospective clinical trials.

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