Comparison of Clinical, Immunohistochemical, and Treatment Factors in Mantle Cell Lymphoma Relapse – Experience of a North Indian Tertiary Care Center

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Context

Mantle cell lymphoma (MCL) is a rare, aggressive variant of non-Hodgkin lymphoma. There is paucity of data with regards to relapse in MCL and factors affecting it, from Indian sub-continent.

Objectives

To assess relapse rate in MCL patients and compare clinico-pathological, immunohistochemical and treatment characteristics between relapsers and non-relapsers.

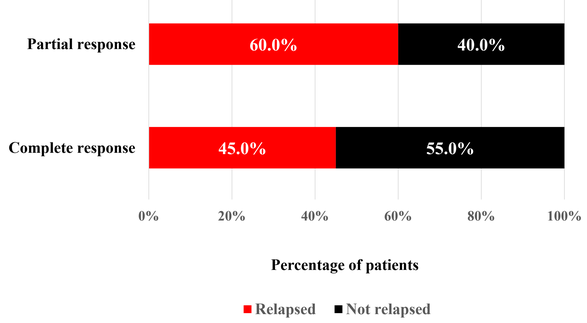
Study design

Ambispective data of 96 transplant-ineligible MCL patients, treated between January'2013 to December'2024 at IRCH-AIIMS, New Delhi, India was analysed.

Outcome measure

Primary outcome was progression free survival (PFS). Response assessed by modified Cheson's lymphoma response evaluation criteria. STATA 13.0 was used to evaluate PFS by Kaplan-Meier analysis and log rank test. Effect of rituximab maintenance (RM) on PFS was adjusted for other factors in multivariate analysis by Cox proportional hazards model; expressed as adjusted hazard ratio (aHR), 95% confidence interval (CI). *p*-value <0.05 defined statistical significance.

Figure 1: Comparison of relapse in complete vs partial responders after induction chemotherapy.



Results

Median age 60.0 years; male-female ratio 3:1. Overall, 43 (45.0%) patients relapsed with median follow-up of 63.0 months. Following induction chemotherapy, relapse rate was higher in partial (60.0%) compared to complete responders (45.0%), without statistical significance (*p*=0.31) (Figure 1). Relapse rate was significantly lower in low (23.0%) vs high-risk (56.0%) MCL International Prognostic Index (MIPI) categories (*p*=0.04). Use of rituximab-based induction was proportionately higher in non-relapsers [50/53 (94.0%) vs 34/43 (79.0%), *p*=0.03]. Differences in histological sub-types and CD3, CD5, CD10, CD20, CD23, BCL-2, BCL-6, Cyclin D1 expression did not statistically contrast between two groups. Median PFS was 43.5 (interquartile range, IQR: 25.0-49.0) months; 25.0 (IQR: 14.0-43.5) months in non-RM group and 80.0 (IQR: 33.5-not reached) months in RM group. Estimated 1.0-, 2.0-, 3.0-year PFS were 90.0%, 79.0%, 69.0% vs 85.0%, 51.0%, 40.0%, respectively in RM vs non-RM groups (log-rank *p*<0.01). RM was significantly associated with better PFS [aHR (95%CI): 0.26 (0.11-0.63), *p*=0.003]. At presentation, B-symptoms [aHR (95%CI): 2.44 (1.24-4.81), *p*=0.01], advanced stage [aHR (95%CI): 4.84 (1.25-18.69), *p*=0.02] and leucocytosis [aHR (95%CI): 2.28 (1.13-4.61), *p*=0.02] were associated with poor PFS.

Conclusions

Relapse was significant in MCL patients from this part of the world. Pathological and immunohistochemical factors did not predict relapse. However, use of RM conferred better PFS, translating to improved clinical outcomes.

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