Childhood Hodgkin Lymphoma in a Low-Middle-Income Country: Clinical Outcomes and Prognostic Factors from Pakistan

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Background

Childhood Hodgkin lymphoma (HL) accounts for 5% of pediatric malignancies, but data from low-middle-income countries (LMICs) on patient characteristics and outcomes remain scarce. This study evaluates clinical presentation, treatment results, and prognostic factors in a Pakistani cohort treated with standardized protocols.

Methods

A prospective study was conducted at the Pediatric Oncology Department of Combined Military Hospital Rawalpindi, Pakistan from January 2012 to December 2024. Newly diagnosed HL patients (aged 1–15 years) were treated per the EuroNet-PHL-C1 trial's standard arm (OEPA and COPDAC chemotherapy ± involved-field radiotherapy). Demographics, staging, histopathology, treatment response, and survival outcomes were analyzed.

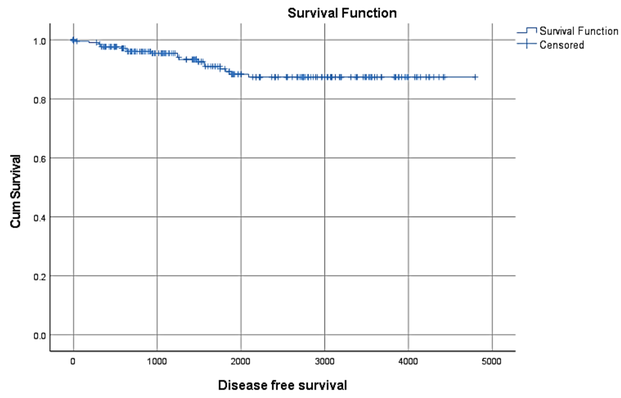
Keywords

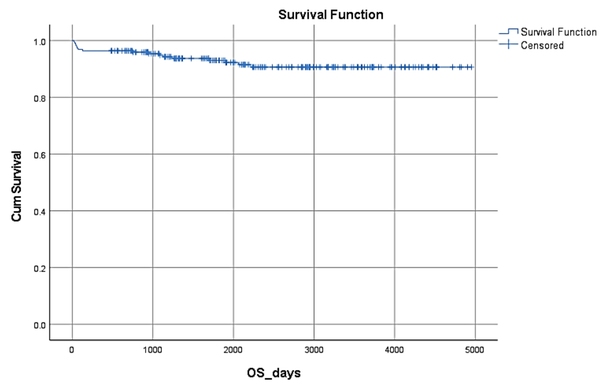
Hodgkin lymphoma, pediatric oncology, survival outcomes, LMIC, prognostic factors

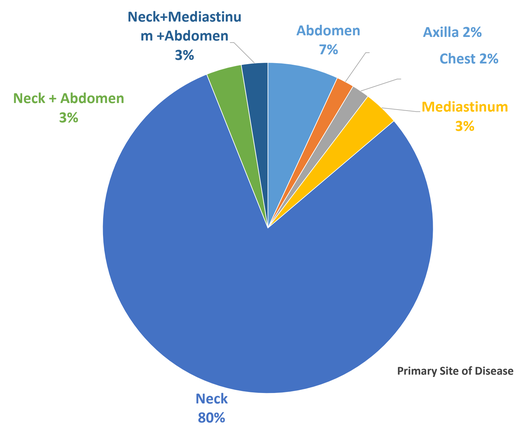
Results

Among 221 patients (76.9% male, mean age 7.0±2.99 years), cervical lymphadenopathy (83.1%) and B symptoms (48.9%) were common. Stage of the disease was stage I (13.8%), II (28.9%), III (40.8%), IV (16.5%). Mixed cellularity subtype predominated (75.1%).

Poor early responders (8.6%) received radiotherapy. Univariate analysis identified delayed oncologist referral (P=0.001), bone marrow involvement (P=0.062), elevated LDH (P=0.058), and poor nutritional status (P=0.026) as adverse prognostic factors; delayed referral remained significant in multivariate analysis (P=0.08). At median follow-up of 12.5 years, 5-year overall survival (OS) and disease-free survival (DFS) were 92.3% and 91.4%, respectively.







Conclusion

Childhood HL in Pakistan achieves outcomes comparable to high-income countries when treated with standardized protocols. Delayed referral to pediatric oncologists was the strongest predictor of inferior survival, underscoring the need for public awareness and early diagnosis in LMICs.

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