

CLINICAL OUTCOMES AND PREDICTORS IN PEDIATRIC AND ADOLESCENT ANAPLASTIC LARGE CELL LYMPHOMA

A single-centre experience from a lower-middle-income country

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25th Shaukat Khanum Cancer Symposium · November 6–8, 2026

BACKGROUND

- Anaplastic large cell lymphoma (ALCL) is a rare and aggressive mature T-cell lymphoma, accounting for **10–15% of pediatric non-Hodgkin lymphomas** and classified into **ALK-positive and ALK-negative**.^{1,2}
- Despite advances in therapy, outcomes remain heterogeneous, with **relapsed and refractory disease** contributing to treatment failure.^{2,3}
- While survival approaches **90% in high-income settings**, data from **lower-middle-income countries remain limited**.^{4,5}
- This study evaluated **event-free survival, overall survival, and predictors of outcome in pediatric and adolescent patients with ALCL treated at our tertiary cancer centre**.

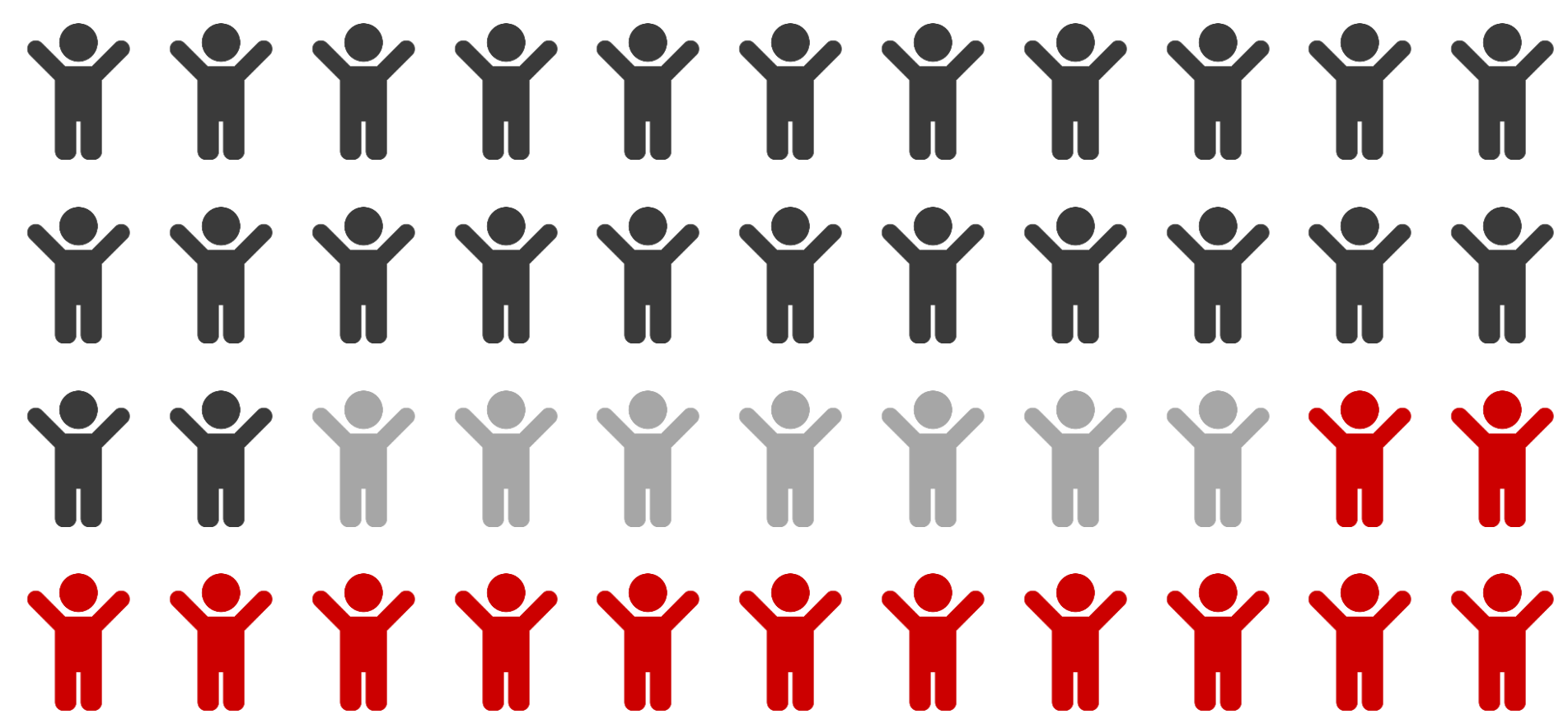
WHY THIS STUDY?

- ALCL is ~10% of pediatric non-Hodgkin lymphoma.
- 60–75% EFS reported with intensive protocols.
- Almost no outcome data from South Asia.

WHAT WE DID?

- Retrospective review, Jan 2017 – Jun 2025.
- Ages 6 months – 18 years, biopsy-proven ALCL.
- Kaplan–Meier and Cox regression. Nominal and Benjamini–Hochberg FDR-adjusted p-values were reported to account for multiple comparisons.

EVERY CHILD'S OUTCOME

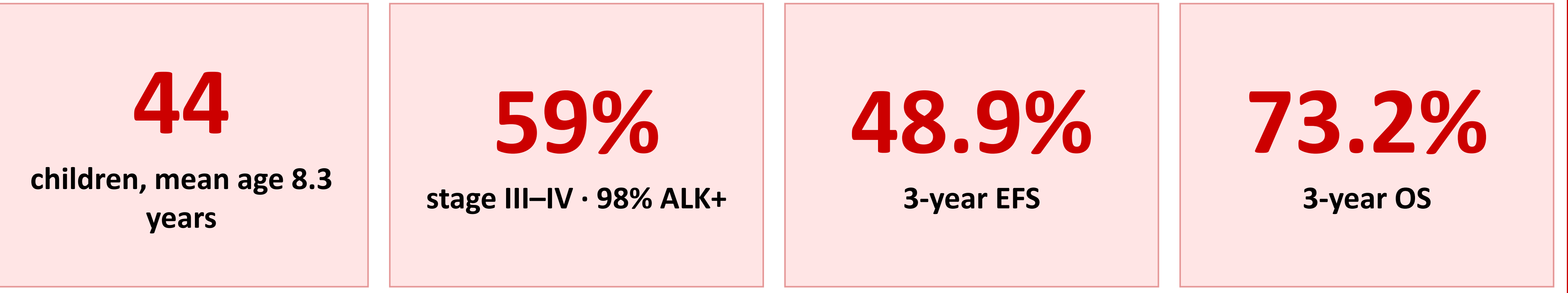


24 (54%) alive, event-free

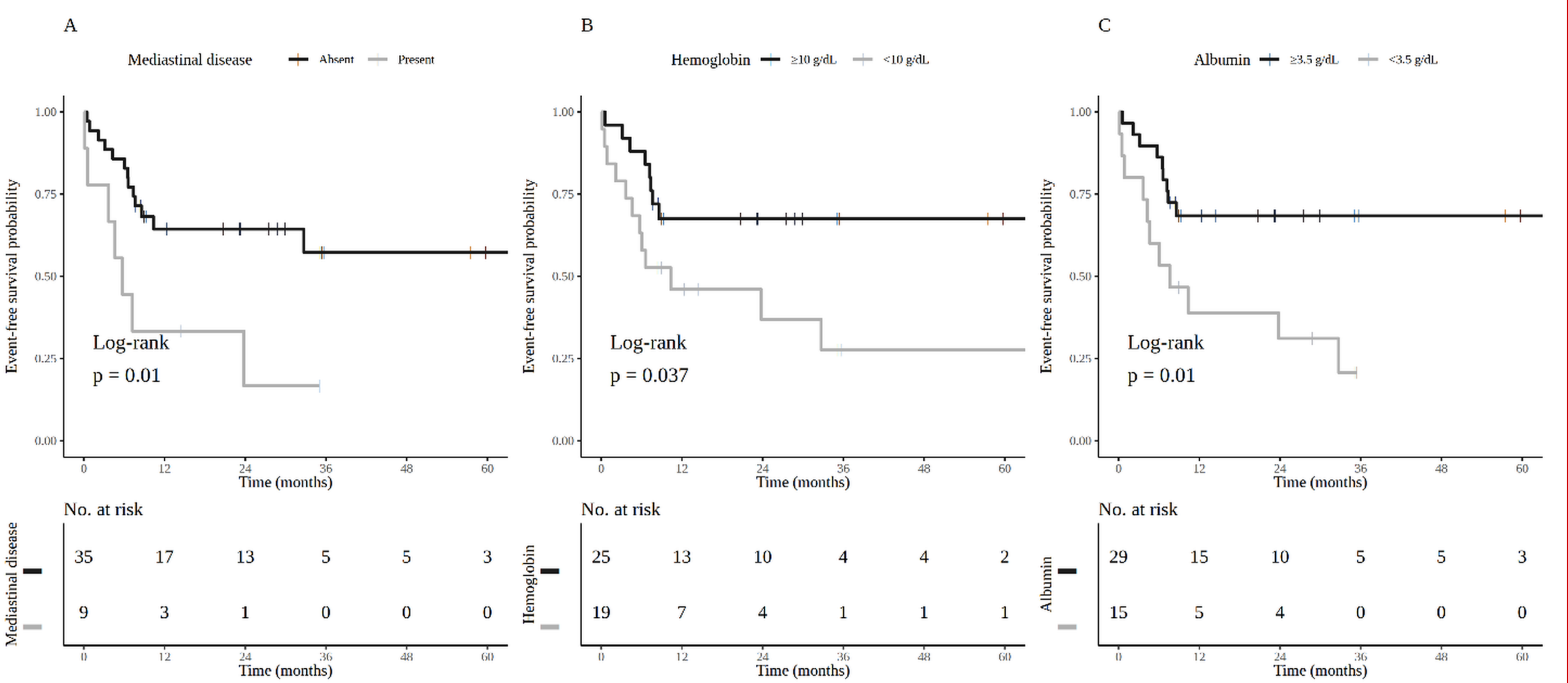
7 (16%) relapse, progression or abandonment

13 (30%) died

RESULTS AT A GLANCE



THE CURVES SPLIT EARLY



Event-free survival by (A) mediastinal disease, (B) Hb <10 g/dL and (C) albumin <3.5 g/dL. **Most events occur in the first year.**

WHO IS AT RISK?

× = times higher risk · **red = statistically significant**

Risk factor	Event (EFS)	Death (OS)
Mediastinal disease	3.2×	3.5×
Low albumin (<3.5)	3.0×	3.0×
Anemia (Hb <10)	2.5×	4.5×
CD3-positive	2.6×	1.8×
Low albumin, adjusted*	2.5×	—

*Accounting for mediastinal disease and CD3 together

PRINCIPAL FINDING

Low serum albumin at diagnosis was associated with poorer event-free survival.

Adjusted HR 2.53 (95% CI 1.02–6.29); nominal $p < 0.05$, not significant after FDR adjustment.

CONCLUSION

- Outcomes lag behind high-income centres (**EFS 48.9% vs 60–75%**).
- Check **albumin at diagnosis**: low levels flag higher-risk children.
- Nutrition and early supportive care are actionable targets to test.

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