HIV-associated Lymphoma at a Tertiary Care Center in Karachi, Pakistan: A Six-year Single-center Analysis

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INTRODUCTION

HIV-associated lymphomas (HAL) account for significant morbidity and mortality in people living with HIV (PLHIV).[1,2] Lymphomas such as diffuse large B-cell lymphoma, Burkitt lymphoma, primary CNS lymphoma, plasmablastic lymphoma, primary effusion lymphoma and Hodgkin lymphoma occur at significantly elevated rates in PLHIV compared to the general population.[3,4] While HAL has been extensively studied in high-income countries, data from South Asia are virtually absent. Despite a burgeoning HIV epidemic,[5] no data on HAL have been published from Pakistan to date. This study aimed to determine the prevalence, patient characteristics, and outcomes of HAL cases identified at a tertiary care center in Pakistan.

RESULTS

2,137 lymphoma cases were identified from the Aga Khan University Hospital cancer registry between January 2018 and December 2023. All 8 patients were male with a median age of 50.5 years (range, 24–58). Histological subtypes included diffuse large B-cell lymphoma (n=3), Burkitt lymphoma (n=2), classical Hodgkin lymphoma (n=2), and plasmablastic lymphoma (n=1). Most patients (n=6) presented with advanced-stage (III–IV) disease. HIV was diagnosed before lymphoma in 4 patients, after lymphoma in 1, and concurrently in 3. Overall, 7 patients received antiretroviral therapy (ART). Among these, 3 achieved complete metabolic response after chemotherapy, 2 expired during chemotherapy, 1 expired without receiving chemotherapy, and 1 was lost to follow-up after starting chemotherapy. The remaining patient expired without receiving ART or chemotherapy. Median follow-up was 2 months (range, 0–66).

Table 1. Patient characteristics and treatment outcomes

Case	Histology	Gender	Age	Comorbidities	Province	Primary Site	Stage	HIV Diagnosis	ART	Chemotherapy	Outcome
DLBCL-1	Diffuse large B-cell lymphoma	Male	53	None	Sindh	Liver	IV	Concurrent with lymphoma diagnosis	Yes	R-CHOP ×6	Complete response
DLBCL-2	Diffuse large B-cell lymphoma	Male	50	None	Sindh	Lung	IV	Concurrent with lymphoma diagnosis	Yes	CVP ×1	Expired
DLBCL-3	Diffuse large B-cell lymphoma	Male	51	None	Balochistan	Lymph nodes	III	Concurrent with lymphoma diagnosis	No	None	Expired
BL-1	Burkitt lymphoma	Male	57	DM, HTN, CKD, EPTB	Sindh	Lymph nodes	IV	Before lymphoma diagnosis	Yes	Rituximab, prednisone, vincristine ×1	Expired
BL-2	Burkitt lymphoma	Male	29	EPTB	Sindh	Soft tissue	IV	After lymphoma diagnosis	Yes	CODOX-M ×1	Lost to follow-up
cHL-1	Classical Hodgkin lymphoma	Male	24	None	Balochistan	Lymph nodes	I	Before lymphoma diagnosis	Yes	ABVD ×6	Complete response
cHL-2	Classical Hodgkin lymphoma	Male	42	Colon adenocarcinoma	Sindh	Colon	IV	Before lymphoma diagnosis	Yes	ABVD ×6	Complete response
PBL-1	Plasmablastic lymphoma	Male	58	COPD, CLD	Sindh	Lymph nodes	Not staged	Before lymphoma diagnosis	Yes	None	Expired

ART: antiretroviral therapy; DM: diabetes mellitus; HTN: hypertension; CKD: chronic kidney disease; EPTB: extrapulmonary tuberculosis; COPD: chronic obstructive pulmonary disease; CLD: chronic liver disease. R-CHOP: rituximab, cyclophosphamide, doxorubicin, vincristine, prednisone; CVP: cyclophosphamide, vincristine, prednisone; CODOX-M: cyclophosphamide, vincristine, doxorubicin, methotrexate; ABVD: doxorubicin, bleomycin, vinblastine, dacarbazine
Stage per Ann Arbor/Lugano classification.

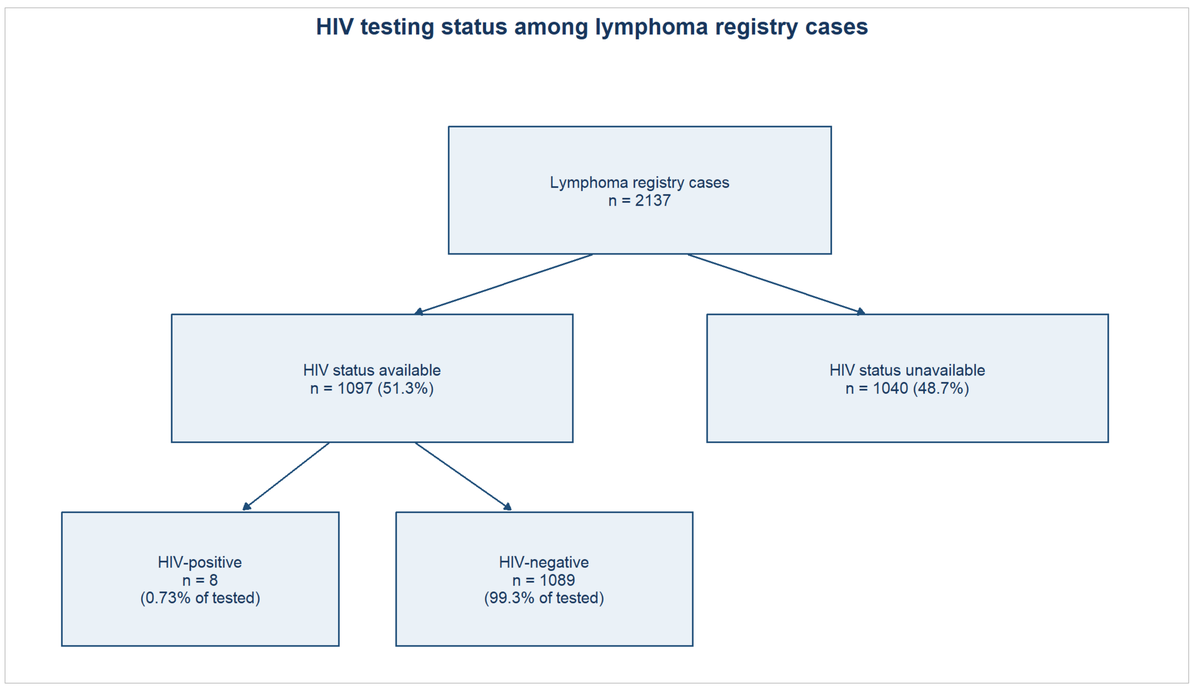

Figure 1. HIV testing status among lymphoma registry cases between 2018 and 2023 (N=2,137)

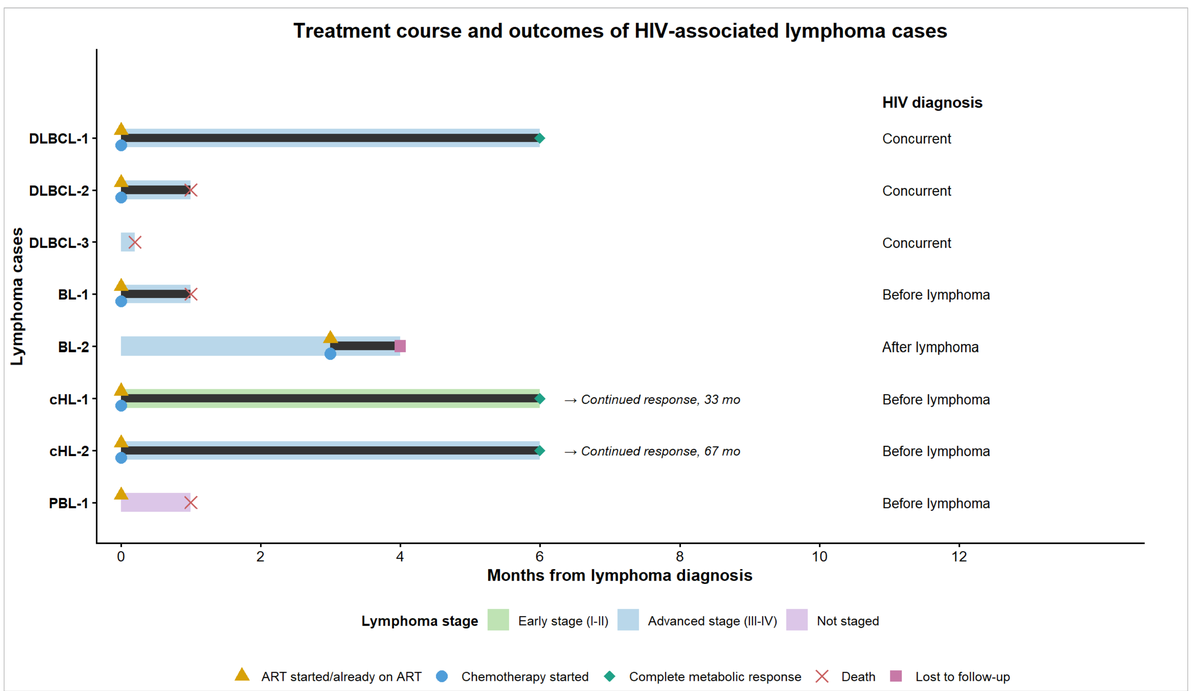

Figure 2. Treatment course and clinical outcomes of 8 patients with HIV-associated lymphoma

CONCLUSION

The HIV prevalence of 0.73% among tested lymphoma patients is approximately 7 times higher than Pakistan's estimated general population prevalence of ~0.1%,[6] consistent with the known elevated risk of lymphoma in PLHIV. The subtype distribution of predominantly aggressive B-cell lymphomas and classical Hodgkin lymphoma mirrors the established global spectrum of HAL. The short median follow-up of 2 months reflects the high early mortality seen in our patient cohort. Critically, HIV testing status was unavailable for 48.7% of lymphoma patients, suggesting that the true burden of HAL in Pakistan is likely underestimated. Our findings highlight the urgent need to increase physician awareness and improve documentation of HIV status among lymphoma patients in Pakistan.

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