ROLE OF TARGETED IMMUNE THERAPIES IN RELAPSED/REFRACTORY HODGKIN LYMPHOMA: A MULTICENTRE EXPERIENCE FROM TRANSPLANT CENTRES IN PAKISTAN — A LOWER-MIDDLE-INCOME COUNTRY PERSPECTIVE

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BACKGROUND

Relapsed/refractory Hodgkin lymphoma (R/R HL) remains challenging, especially in lower-middle-income countries (LMICs) with limited access to novel therapies and transplant. Targeted agents like brentuximab\ vedotin and nivolumab have proven efficacy in high-income settings, but real -world LMIC data is limited.

AIM

To evaluate real-world treatment outcomes of brentuximab vedotin ± nivolumab in relapsed/refractory Hodgkin lymphoma across multiple transplant centres in Pakistan — including PET-assessed response, CTCAE v5.0 toxicity, overall and progression-free survival, and the feasibility and outcomes of autologous stem cell transplantation (ASCT).

METHODS

Retrospective, multicentre study of 56 heavily pretreated patients with R/R Hodgkin lymphoma treated 2018–2025.

All patients received brentuximab vedotin; a subset additionally received nivolumab.

Response assessed by PET imaging; toxicity graded by CTCAE v5.0; survival (OS/PFS) analyzed by Kaplan-Meier methodology.
Feasibility of ASCT and associated transplant outcomes (mobilization, engraftment, Day+100 PET) were systematically analyzed.

CONCLUSIONS

Brentuximab vedotin and nivolumab are both effective and well tolerated in a young, heavily pretreated R/R Hodgkin lymphoma cohort in a lower-middle-income country.

These therapies achieved meaningful response rates, favorable survival, and manageable toxicity — and served successfully as bridging treatment prior to ASCT, with encouraging post-transplant results.

Their feasibility in a resource-limited LMIC setting supports broader application in routine clinical practice.

RESULTS AND TRANSPLANT OUTCOMES

Median age 30.4 years (13–56), 62.5% male, 37.5% advanced (stage IV) disease, 55.6% with ≥3 prior lines of therapy. End-of-treatment PET: CR 26.8%, PR 32.1%, SD 30.4%, PD 10.7% (ORR 58.9%). 67.2% of patients had no severe (grade ≥3) toxicity. 47/56 (83.9%) proceeded to ASCT — successful mobilization in 91.1% with G-CSF alone; successful engraftment in 98.2%. Day+100 post-transplant PET: CR 46.4%, PD only 7.1%. Survival: OS 98% at 1 year and 88% at 3/5/7 years; PFS 80% at 1 year and 68% at 3/5/7 years — with outcomes compared between transplanted and non-transplanted patients (5 deaths due to progressive disease and other medical conditions, 2 lost to follow-up through Dec 2025).

Figure 1. Stage of Disease at Diagnosis (n = 56)

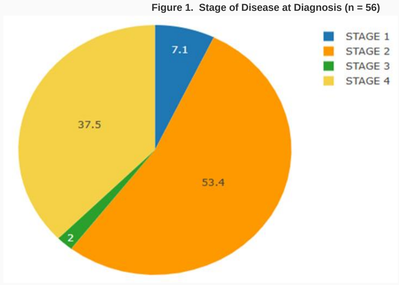
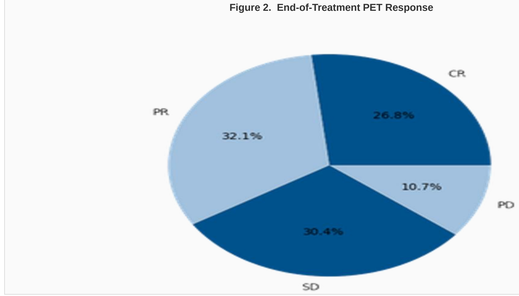


Figure 2. End-of-Treatment PET Response



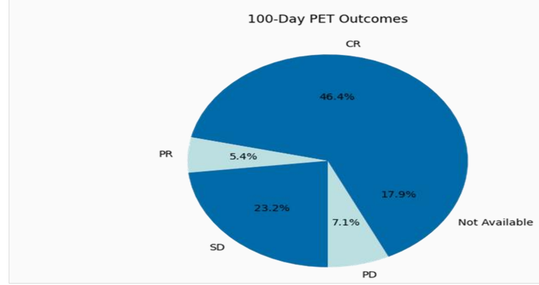


Figure 4. Overall Survival — Whole Cohort

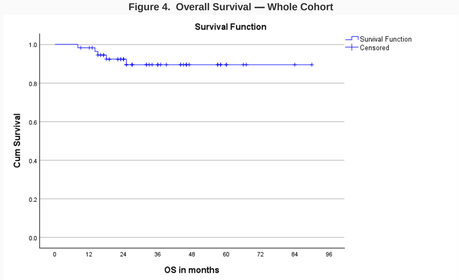


Figure 5. Progression-Free Survival — Whole Cohort

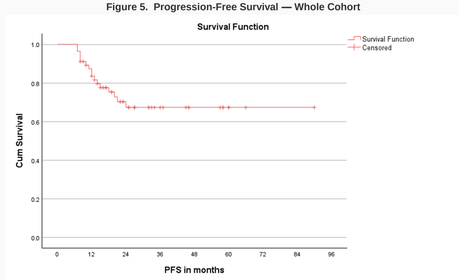


Figure 6. OS by Transplant Status

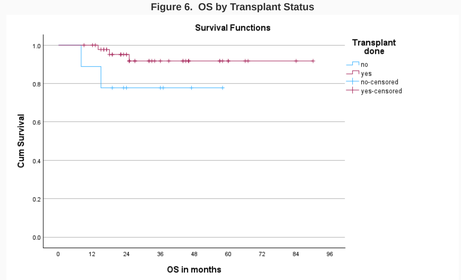


Figure 7. PFS by Transplant Status

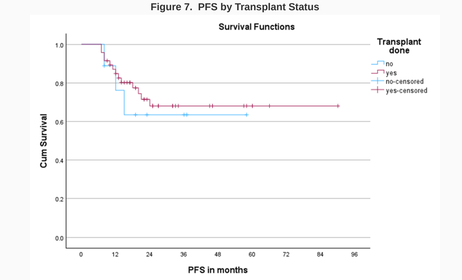
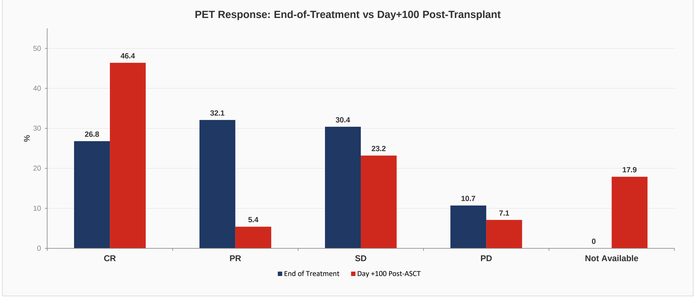
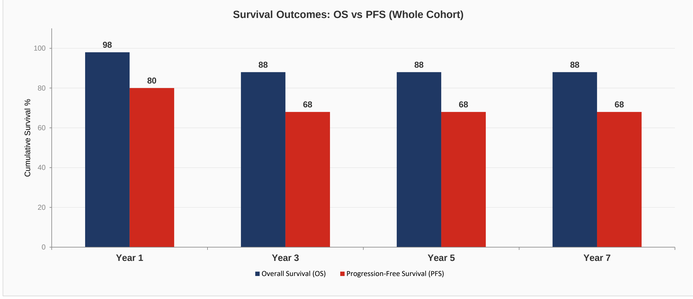


Table 1. Stem Cell Mobilization & Engraftment (n = 47 transplanted patients)

Variable	Category	n	%
Mobilization Method	G-CSF Alone	41	91.1%
	G-CSF + Plerixafor	5	11.1%
Engraftment Status	Successful engraftment	44	98.2%
	Engraftment failure	1	1.8%

Of 56 patients, 47 (83.9%) proceeded to autologous stem cell transplantation (ASCT).





ACKNOWLEDGEMENTS

The authors thank the transplant hematology, and nuclear medicine (PET-CT) teams at SKMCH&RC Lahore and AFBMTC Rawalpindi for their contributions to patient care and data collection for this multicentre collaboration.

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