PEMBROLIZUMAB IN THE TREATMENT OF RELAPSED/REFRACTORY HODGKIN LYMPHOMA AT A CANCER REFERRAL CENTER IN COLOMBIA

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Introduction

Classical Hodgkin Lymphoma (HL) is highly curable disease with first-line conventional chemotherapy. The ABVD regimen achieves complete response (CR) rates of 80–90%, while the combination of brentuximab vedotin with AVD (A+AVD) has demonstrated improved progression-free survival (PFS) previously reported in the ECHELON-1 trial. However, 20–30% of patients experience relapse or disease progression. There is no standardized salvage chemotherapy regimen, but pembrolizumab are currently demonstrated in the KEYNOTE-087 study, with an overall response rate (ORR) of 72% and a CR rate of 28%.

Objective

To describe the clinical characteristics and outcomes of patients aged 18 years or older diagnosed with relapsed/refractory Hodgkin lymphoma (R/R HL) and treated with pembrolizumab at the National Cancer Institute of Colombia – South America, between July 2019 and July 2024.

Results

A total of 18 patients with R/R HL were evaluated. Their characteristics are detailed in Table 1. The median age was 32 years (range: 20–77), with no gender predominance. The most frequent histological subtype was nodular sclerosis (77.8%). Half of the patients had a Hasenclever index score of 2–3, and 66% had extranodal involvement. ABVD was the most common first-line chemotherapy (83%), followed by A+AVD, with an overall response rate of 55.6% and a primary refractory rate of 44% (Table 1).

The most frequent immune-related adverse event was hypothyroidism (22.2%). The overall response rate was 94.4%, with CR achieved in 44.4% of patients. Table 2.

The median follow-up duration was 17.5 months. The median PFS was not reached, with 60% of patients remaining progression-free at 36 months (Figure 1). The median OS was 30 months (95% CI: 22.6–37.3), with three deaths due to disease progression and one due to an unrelated cause. There was no statistically significant difference in OS (p=0.86) or PFS (p=0.553) between patients receiving pembrolizumab as monotherapy versus those receiving it in combination with other chemotherapy regimens (Figure 2, Figure 3).

CLINICAL CHARACTERISTICS		(n=18)	PERCENT (%)
Age	Median	32	
	Range	(20-77)	
Gender	Female	9	(50)
	Male	9	(50)
Histological Subtype	Nodular Sclerosis	14	(77.8)
	Lymphocyte-Rich	0	(0.0)
	Mixed Cellularity	4	(22.2)
Hassenclever IPS Score	0-1	2	(11.1)
	2-3	9	(50.0)
	4-7	4	(22.3)
	Unknown	3	(16.7)
Extranodal Involvement	Yes	12	(66.7)
	No	6	(33.3)
Prior Hematopoietic Stem Cell Transplant (HSCT)	Yes	2	(11.1)
	No	16	(88.9)
Disease Status After First-Line Therapy	Primary Refractory	8	(44.4)
	Relapse < 12 months	2	(11.1)
	Relapse > 12 months	8	(44.4)
First-Line Trearment	A+AVD	3	(16.7)
	ABVD	15	(83.3)
Response to First-Line Therapy	Complete Response (CR)	5	(27.8)
	Refractory	8	(44.4)
	Partial Response (PR)	5	(27.8)
Previous Lines of Therapy Before Pembrolizumab	<3	7	(38.9)
	>3	11	(61.2)
Prior Brentuximab Vedotin	Yes	13	(72.2)
	No	5	(27.8)
Prior Radiotherapy	Yes	3	(16.7)
	No	15	(83.3)

Table 1. Clinical and Sociodemographic Characteristics

RESPONSE TO PEMBROLIZUMAB	(n=18)	PERCENT (%)
Overall Response	17	(94.4)
Complete Response (CR)	8	(44.4)
Refractory Disease	1	(5.6)
Partial Response (PR)	9	(50.0)

Table 2. Response Evaluation to Pembrolizumab

Conclusions

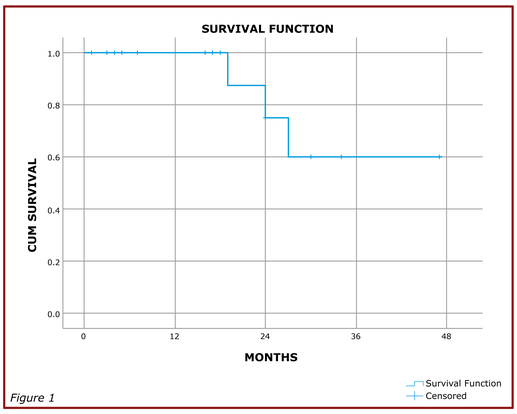
Pembrolizumab demonstrated efficacy and a favorable safety profile in this setting, with a median PFS not reached. OS may have been influenced by one unrelated death. No uncontrolled immune-mediated adverse effects were observed, supporting pembrolizumab as an active therapy for relapsed/refractory Hodgkin lymphoma patients.

Materials and Methods

This is a retrospective, observational, descriptive study based on a review of medical records. A total of 18 patients aged >18 years diagnosed with R/R HL and treated with pembrolizumab over five years at the National Cancer Institute of Colombia were included. Sociodemographic characteristics and clinical outcomes, such as overall, complete, and partial response rates, were described.

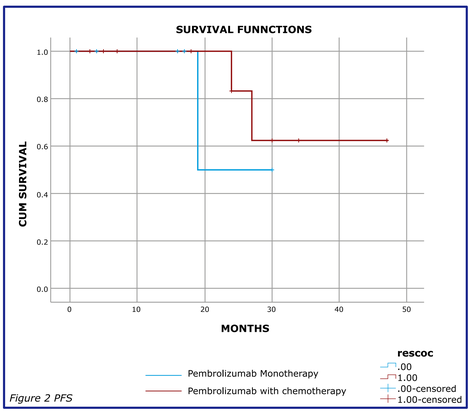
Statistical analysis was conducted using SPSS version 25. Patients were selected via non-probabilistic sampling, reviewing medical records of those meeting the inclusion criteria: HL diagnosis, age >18 years, and complete clinical data. Patients with concurrent diagnoses that could interfere with survival evaluation were excluded. Descriptive statistical analysis was performed for qualitative and quantitative variables. Qualitative variables were expressed as frequencies and percentages, while quantitative variables were described using standard deviation (SD) and confidence intervals (CIs). Overall survival (OS) was calculated using the Kaplan-Meier method, and group comparisons were analyzed with the log-rank test. Statistical significance was defined as $p<0.05$. The study was approved by the institutional ethics committee.

Figure 1: Progression-Free Survival (PFS) in Patients with Relapsed/Refractory Hodgkin Lymphoma (R/R HL) Treated with Pembrolizumab



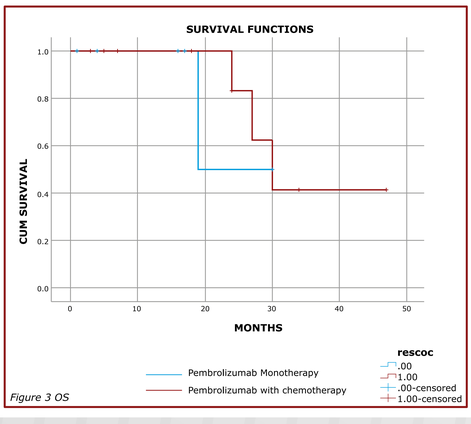
Kaplan-Meier curve showing cumulative probability of remaining progression-free over time (months) following initiation of pembrolizumab in patients with R/R HL.

Figure 2: Progression-Free Survival (PFS) According to Pembrolizumab Treatment Regimen (Monotherapy vs. Combination Therapy)



Kaplan-Meier curves comparing PFS between patients receiving pembrolizumab as monotherapy and those treated with combination regimens. Statistical comparison performed using the log-rank test.

Figure 3: Overall Survival (OS) in Patients with Relapsed/Refractory Hodgkin Lymphoma (R/R HL) Treated with Pembrolizumab



Kaplan-Meier curve illustrating overall survival over time (months) in patients with R/R HL treated with pembrolizumab. Median OS was 30 months (95% CI: 22.6–37.3).