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627.AGGRESSIVE LYMPHOMAS: CLINICAL AND EPIDEMIOLOGICAL**Prognosis of Patients with Diffuse Large B Cell Lymphoma with Central Nervous System Relapse: USC Experience**Lucas Avalon Kaplan, MD¹, Julian Hardy McLain, MD², Amir Ali, PharmD, BCOP³, Zaw Win Myint, MD², Anil Tulpule, MD²¹Department of Medicine, University of Southern California/Los Angeles General Medical Center, Los Angeles, CA²Division of Hematology, University of Southern California, Norris Comprehensive Cancer Center, Los Angeles, CA³Norris Comprehensive Cancer Center, University of Southern California, Los Angeles, CA**Introduction:**

Diffuse large B cell lymphoma (DLBCL) is the most common form of lymphoma and a potentially curable disease with systemic immunochemotherapy regimens. Involvement of the central nervous system (CNS) in patients with DLBCL is a relatively rare event which occurs in approximately 2-5% of patients overall, but the CNS relapse rate can be as high as 10-12% in high-risk patients. Unfortunately, CNS relapse confers poor prognosis with some studies estimating median survival of 2.5 months from relapse. Our study evaluates prognostic factors and outcomes in this patient population.

Methods:

This study is a retrospective review of patients diagnosed with DLBCL who then developed CNS relapse and were treated at Los Angeles General Medical Center (LAGMC) and Norris Comprehensive Cancer Center (NCCC) from 2016-2023. Information regarding patient demographics, prognostic factors to calculate NCCN-IPI scores, pathologic characterization, therapy, clinical course, and survival were collected. CNS relapse was defined as pathologic or imaging diagnosis of CNS involvement after initial treatment was received.

Results:

A total of 29 patients with CNS relapse of DLBCL were identified with a median age of 60 (range 43-86). The median time from initial diagnosis to CNS relapse was 9 months. The patients were 72.4% male (N=21), 79.3% Hispanic (N=23), and 17.2% (N=5) HIV positive. NCCN-IPI scores were calculated for all patients and divided into NCCN-IPI risk groups. The low-risk group (NCCN-IPI 0-1) made up 10.3% (N=3), low-intermediate risk group (NCCN-IPI 2-3) 48.3% (N=14), high-intermediate risk group (NCCN-IPI 4-5) 34.5% (N=10), and high-risk group (6-8) 6.90% (N=2). Pathologic analysis revealed 41.4% (N=12) of patients had germinal center type lymphoma, 44.8% (N=13) were BCL-2/c-myc double expressors, 13.8% (N=4) were BCL-2/c-myc double hit, and 13.8% (N=4) were BCL-6/c-myc double hit (Table 1). Overall survival (OS) for the entire cohort was 18.5% at five years after CNS relapse of DLBCL with a median survival of 12 months. Patients with a low or low-intermediate NCCN-IPI score (0-3) had an OS of 57.4% at 12 months and 29.1% at five years. Patients with a high-intermediate or high NCCN-IPI score had an OS of 35.7% at 12 months and 0% by 33 months. OS at 12 months for the HIV negative group was 70.4% compared to 40.0% in the HIV positive group, but OS at 5 years was similar in both groups at 19.4% and 20.0%, respectively (Figure 1).

Conclusions:

CNS relapse in patients with DLBCL is a rare but devastating complication. In our largely male and Hispanic patient population, prognosis at five years was very poor for those with CNS relapse, but higher NCCN-IPI scores demonstrated a trend that conferred a higher likelihood of death at both the one year and five year time points compared to those with lower scores. Survival after CNS relapse in our cohort is longer compared to prior studies, indicating possible improvements in the prognosis of patients with CNS relapse of DLBCL. Given the overall poor prognosis of CNS relapse of DLBCL, improved prognostic stratification is of the utmost importance in this highly curable disease.

Disclosures No relevant conflicts of interest to declare.

Table 1. Patient Characteristics at Initial Diagnosis of DLBCL Who Later Developed CNS Relapse

Demographics	No.	%	Lymphoma Characteristics	No.	%
Total Cohort	29		NCCN-IPI Score		
Age at Dx Range (Median)	43-86 (60)		Low (0-1)	3	10.3
Sex			Low-Intermediate (2-3)	14	48.3
Female	8	27.6	High-Intermediate (4-5)	10	34.5
Male	21	72.4	High (6-8)	2	6.9
Ethnicity			Histologic/Genetic Profile		
Hispanic	23	79.3	Germinal Center	12	41.4
Non-Hispanic	6	20.7	Non-Germinal Center	17	58.6
HIV Status			BCL-2/c-myc Double Expressor	13	44.8
(+)	5	17.2	BCL-2 Double Hit	4	13.8
(-)	24	82.8	BCL-6 Double Hit	4	13.8

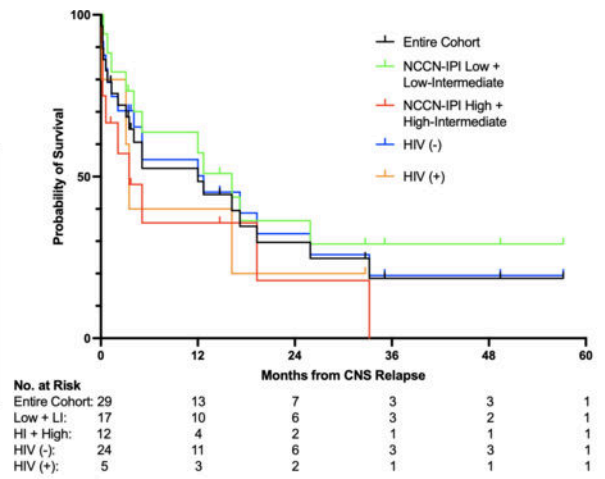


Figure 1. Overall survival of patients with CNS relapse of DLBCL. Entire cohort (N=29) survival from time of relapse is shown, as well as survival for subgroups by NCCN-IPI score and HIV status.

Figure 1

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