Clinical Characteristics and Treatment Response in Double Expressor vs Double HIT/Triple HIT DLBCL: A Prospective Study in a Tertiary Care Center in South India

Smitha C Saldanha[1], Akkamahadevi Patil [2] , Suresh Babu [1], Lokesh K N[1], Rudresha A H[1], Rajeev L K[1] , Linu A J [1]

1.Department of Medical Oncology, Kidwai Memorial Institute of Oncology

2.Department of Pathology, Kidwai Memorial Institute of Oncology

INTRODUCTION

- Double Expressor Lymphomas (DEL) and Double HIT/Triple HIT Lymphomas (DHL/THL), are known to be more aggressive than standard DLBCL and are pivotal in stratifying DLBCL patients based on prognosis and treatment response.
- While standard DLBCL is often managed effectively with R-CHOP, DEL and DHL/THL may require more intensive treatment regimens and closer monitoring for CNS involvement and DLBCL and are pivotal in stratifying DLBCL patients based on prognosis and treatment response.

AIMS &OBJECTIVES

•To evaluate the demographic, clinical, histopathological, and molecular features of DEL and DHL/THL DLBCL patients.

•To analyze treatment responses, event-free survival, and overall survival in these high-risk subgroups.

METHODS

•Prospective observational cohort study

•**Sample size** – 97 patients

•**Place of study**– Kidwai Memorial Institute of Oncology (KMIO)

•**Definitions:**

- DEL – MYC and BCL2 protein overexpression (IHC)
- DHL/THL – MYC with BCL2 and/or BCL6 rearrangements (FISH)

- **Data collected:**
- Stage, extra nodal involvement, GCB/non-GCB phenotype, IPI score

•**Treatment**: All patients received R-CHOP

•**Study period** – July 2019 to December 2022

•**Outcomes assessed**: Treatment response, progression, survival

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RESULTS

Table 1: Clinical Characteristics of the DLBCL Cohort:

Total Number of patients	97
Median Age(Max-Min)(y)	55(17-82)
Sex Distribution M:F	1.2:1
Performance Status(ECOG)	
0-1	86(88.6%)
≥2	11(11.4%)
Comorbid Condition	
Present	18(18.6%)
Absent	79(81.4%)
Disease Stage	
Stage I	9(9.2%)
Stage II	32(33%)
Stage III	28(28.9%)
Stage IV	28(28.9%)
Extra Nodal Involvement	
Present	46(47.4%)
Absent	51(52.6%)
Median LDH U/L	276
Median IPI score	2
Median Ki-67 Index	70%(40-89%)
Cell of Origin	
Non GCB	60(61.8%)
GCB	37(38.2%)
DLBCL Subtypes	
Double Expressor Lymphoma(DEL)	51(52.6%)
Double HIT Lymphoma(DHL)	14(14.4%)
Triple HIT Lymphoma(THL)	1(1%)
Normal	31(32%)

RESPONSE RATES

	CMR	PR	SD	PD	TOTAL
Normal	12 (30.8%)	17 (43.6%)	6 (15.4%)	4 (10.3%)	39
Double expressor	22 (43.1%)	12 (23.5%)	7 (13.7%)	10 (19.6%)	51
Double HIT	2 (15.4%)	6 (46.2%)	1 (7.7%)	4 (30.8%)	13
Triple HIT	1 (100.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	1

DISCUSSION

In this cohort of 97 DLBCL patients, treatment responses varied significantly by molecular subtype. Double expressor lymphomas demonstrated a higher complete metabolic response (CMR) rate (43.1%) compared to normal phenotype (30.8%), although partial responses (PR) were lower (23.5% vs. 43.6%). Patients with double-hit lymphoma showed the very less CMR (15.4%) and highest progressive disease (PD) rate (30.8%), exhibiting their aggressive nature. The single triple-hit patient achieved CMR, though sample size limits interpretation. Notably, "not normal" cases had higher PD (20.7%) and lower PR (27.6%) than normal Standard DLBCL Subtypes ones, suggesting a biologically resistant subgroup. However, none of these differences reached statistical significance ($p > 0.05$), underscoring the need for larger studies to validate the conclusions.

CONCLUSION

- This study underscores the clinical complexity and poorer outcomes associated with DEL/DHL/THL. While our findings provide insight into the disease profile and treatment response of these subgroups, further large-scale studies are warranted to validate and optimize therapeutic strategies.