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POSTER TITLE

Authors, M. Khan[1], J. Khalid[2], H. Malik[1], M. Faisal[3], A. Ali[1], S. Baloch[1]

1. Shaukat Khanum Memorial Cancer Hospital and Research Centre, Peshawar, Pakistan
2. University of Houston, Texas, USA
3. Roswell Park Comprehensive Cancer Center, Buffalo, USA

Shaukat Khanum Memorial Cancer Hospital and Research Centre

INTRODUCTION

Background: Diffuse large B-cell lymphoma (DLBCL) is the most common subtype of non-Hodgkin lymphoma, accounting for one-third of cases. Despite advances with the R-CHOP regimen, a small proportion of patients suffer from central nervous system (CNS) relapse, which has a poor prognosis.

Current Practices: Intrathecal (IT) methotrexate has been the standard for CNS prophylaxis, but recent research suggests intravenous (IV) high-dose methotrexate (HD-MTX) might be more effective despite concerns about its side effects.

AIM

To evaluate the effectiveness of CNS prophylaxis in DLBCL patients at high risk for CNS relapse using IT-MTX alone versus IT-MTX plus HD-MTX.

METHOD

Study Design:

Retrospective analysis

Population:

Patients with DLBCL treated with first-line R-CHOP between 2010 and 2021 at Shaukat Khanum Memorial Cancer Hospital

Grouping:

Patients received either IT-MTX alone or IT-MTX combined with HD-MTX for CNS prophylaxis

Analysis:

Logistic regression was used to compare the risk of CNS relapse between the two groups, adjusting for clinically significant covariates.

RESULTS

Table 1. Baseline patient characteristics

Parameter	Total n (%)	IT-MTX n= 233 (%)	IT-MTX & HD-MTX n = 216 (%)
Age (years)	33.17 ± 10.36	32.8 ± 10.39	33.56 ± 10.34
Sex			
Male	301 (67.04)	152 (65.24)	149 (68.98)
Female	148 (32.96)	81 (34.76)	67 (31.02)
CNS Relapse			
No	415 (92.43)	226 (97)	189 (87.5)
Yes	34 (7.57)	7 (3)	27 (12.5)
Tumor Stage			
Stage I	35 (7.8)	18 (7.73)	17 (7.87)
Stage II	77 (17.15)	51 (21.89)	26 (12.04)
Stage III	39 (8.69)	31 (13.3)	8 (3.7)
Stage IV	298 (66.37)	133 (57.08)	165 (76.39)
IPI Score			
Low score (1-2)	142 (31.62)	84 (36.05)	58 (26.85)
High score (3-5)	307 (68.37)	149 (63.95)	158 (73.15)
Extranodal Involvement			
0	62 (13.81)	42 (18.03)	20 (9.26)
1	198 (44.1)	113 (48.5)	85 (39.35)
2	123 (27.39)	54 (23.18)	69 (31.94)
≥ 3	66 (14.7)	24 (10.3)	42 (19.44)
Presence of B-symptoms			
No	275 (61.25)	135 (57.94)	140 (64.81)
Yes	174 (38.75)	98 (42.06)	76 (35.19)
Bulky Tumor			
No	335 (74.61)	163 (69.96)	172 (79.63)
Yes	114 (25.39)	70 (30.04)	44 (20.37)

- **Participants characteristics:**

  449 patients (51.89% received IT MTX alone; 48.11% received IT-MTX plus HD-MTX)

- **CNS Relapse Rates:**

  IT-MTX alone: 3.0% | IT-MTX + HD-MTX: 12.5% (p-value = 0.001)

- **Adjusted Risk:**

  Patients receiving IT-MTX + HD-MTX had 5.10 times higher odds of CNS relapse compared to those receiving IT-MTX alone (p-value = 0.0006)

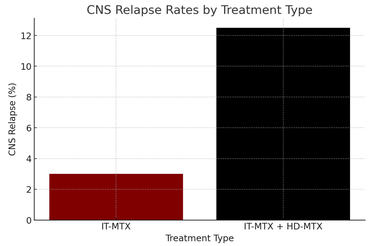


Table 2. Multivariate analysis of the risk of CNS relapse among patients receiving IT-MTX vs IT-MTX & HD-MTX

Parameter	Adjusted Odds Ratio	95% Confidence Limits	Pr > ChiSq
Age (years)	0.994	0.96-1.029	0.7449
Sex			
Male	Reference	-	-
Female	0.746	0.348-1.6	0.4515
Tumor Stage			
Stage I	Reference	-	-
Stage II	0.726	0.143-3.678	0.4756
Stage III	2.003	0.363-11.04	0.1588
Stage IV	0.699	0.184-2.659	0.2553
IPI Score			
Low score (1-2)	Reference	-	-
High score (3-5)	2.573	0.943-7.018	0.0649
Extra nodal Involvement			
0	Reference	-	-
1	0.69	0.225-2.119	0.6192
2	0.488	0.139-1.714	0.1575
≥ 3	1.203	0.337-4.291	0.2439
Presence of B-symptoms			
No	Reference	-	-
Yes	1.424	0.642-3.156	0.3843
Bulky Tumor			
No	Reference	-	-
Yes	0.548	0.19-1.585	0.2673
Treatment type			
IT-MTX	Reference	-	-
IT-MTX & HD-MTX	5.104	2.022-12.885	0.0006

CONCLUSIONS

Contrary to expectations, adding HD-MTX to IT-MTX for CNS prophylaxis in high-risk DLBCL patients may increase the risk of CNS relapse. Further research is necessary to determine the most effective CNS prophylactic regimens for this patient population.

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Shaukat Khanum research department

CONTACT INFORMATION

manzoorkhan@skm.org.pk

+447445734276