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CHARACTERISTICS AND OUTCOMES IN PATIENTS WITH MARGINAL ZONE LYMPHOMA TREATED AT A LARGE TERTIARY ACADEMIC MEDICAL CENTER

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INTRODUCTION

- Marginal zone lymphoma (MZL) is a clinically indolent subtype of B-cell non-Hodgkin lymphoma that is thought to arise from post-germinal center B-cells[1]
- Three primary subtypes are recognized: nodal MZL (NMZL), splenic MZL (SMZL), and extranodal MZL (ENMZL), with treatments varying based on subtype and stage
- Given rarity of MZL, we sought to characterize demographics and outcomes of patients with MZL

METHODS

- Single-center retrospective cohort study of adults (age ≥18 yrs) with biopsy-proven MZL seen at the Siteman Cancer Center of Washington University from 1/1-2010-1/31/2023
- Data were collected regarding demographics, laboratory, clinical characteristics, and treatment
- Survival rates were estimated by Kaplan Meier method and univariate outcome associations were derived with logistic regression and $\chi 2$ or Fisher's exact test for categorical variables andM ANOVA/unpaired t-test for continuous variables.

RESULTS

Table 1. Baseline demographic/clinical data

Variable	Number
Median age at diagnosis (n=183)	64 (24-90)
Gender (n=183)	
Male	74 (40.4)
Female	109 (59.6)
ECOG PS at diagnosis (n=151)	
0	96 (63.6)
1	41 (27.2)
2	12 (7.9)
3	2 (1.3)
Stage at diagnosis (n=183)	
I	73 (39.9)
II	15 (8.2)
III	8 (4.4)
IV	87 (47.5)
MZL subtype (n=183)	
Nodal	49 (26.8)
Splenic	33 (18.0)
Extranodal	101 (55.2)
B symptoms at diagnosis (n=174)	
No	141 (77.0)
Yes	33 (18.0)
LDH at diagnosis (n=170)	196 (101-525)
Hb at diagnosis (n=176)	12.9 (7.0-17.9)
WBC at diagnosis (n=176)	6.5 (1.7-46.9)
LDH higher than ULN (n=170)	
No	142 (77.6)
Yes	28 (15.3)
Bone marrow involvement at diagnosis (n=88)	
No	41 (22.4)
Yes	47 (25.7)
2+ sites of disease (n=183)	
No	89 (48.6)
Yes	94 (51.4)

- 183 pts were identified (Table 1)
- EMZL was the most common subtype (n=101, 55.2%), followed by NMZL (n=49, 26.8%) and SMZL (n=33, 18.0%)
  - Comparison of baseline characteristics between subtype is shown in Table 2
- 42 pts (23.0%) were observed as their initial treatment for a median of 44 months (range 5-158)
  - Of these, 16 pts later progressed requiring treatment after a median of 18 months
  - Advanced stage (p=0.009), multiple extranodal sites (p<0.001), and nodal MZL (p=0.05) were most predictive of disease progression
- Most common frontline treatments are shown in Table 3
  - 43 pts (23.5%) later progressed requiring second-line treatment
  - Factors associated with disease progression are shown in Table 4
- 11 pts (6.0%) had primary refractory disease

Table 2. Comparison of characteristics by subtype

Variable	NMZL	SMZL	ENMZL	P-value
Gender				0.324
Male	22 (44.9%)	16 (48.5%)	36 (35.6%)	
Female	27 (55.1%)	17 (51.5%)	65 (64.4%)	
ECOG PS at diagnosis				**0.047**
0	32 (72.7%)	15 (57.7%)	49 (60.5%)	
1	10 (22.7%)	10 (38.5%)	21 (25.9%)	
2	1 (2.3%)	0 (0.0%)	11 (13.6%)	
3	1 (2.3%)	1 (3.8%)	0 (0.0%)	
Stage at diagnosis				**<0.01**
I	8 (16.3%)	3 (9.1%)	73 (39.9%)	
II	9 (18.4%)	0 (0%)	15 (8.2%)	
III	6 (12.2%)	1 (3.0%)	8 (4.4%)	
IV	26 (53.1%)	29 (87.9%)	87 (47.5%)	
B symptoms at diagnosis				0.146
No	37 (75.5%)	22 (73.3%)	82 (86.3%)	
Yes	12 (24.5%)	8 (26.4%)	13 (13.7%)	
LDH higher than ULN				**0.02**
No	39 (84.8%)	20 (66.7%)	83 (88.3%)	
Yes	7 (15.2%)	10 (33.3%)	11 (11.7%)	
2+ sites of disease				**<0.001**
No	10 (20.4%)	12 (36.4%)	89 (48.6%)	
Yes	39 (79.6%)	21 (63.6%)	94 (51.4%)	
Age at diagnosis, mean (σ)	63.8 (11.8)	66.0 (9.6)	62.4 (12.7)	0.32
LDH at diagnosis, mean (σ)	208.4 (84.1)	234.6 (84.9)	199.5 (52.3)	0.052
Hb at diagnosis, mean (σ)	12.7 (1.9)	11.5 (2.3)	12.9 (2.1)	**0.003**
WBC at diagnosis, mean (σ)	7.0 (2.8)	8.9 (9.4)	7.0 (2.8)	0.13

Figure 1. 5-year progression-free survival (A) and 5-year overall survival (B) by Kaplan-Meier analysis

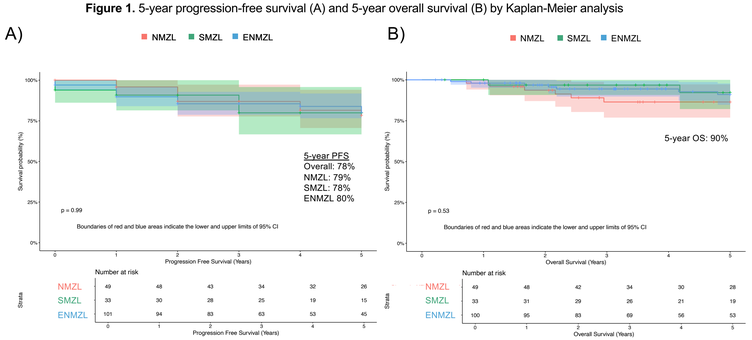


Table 3. Frontline treatment regimen by descending order of frequency

Regimen	n (%)	ORR
Radiotherapy	60 (32.8)	90%
Bendamustine with rituximab	45 (24.6)	82.20%
Rituximab monotherapy	31 (16.9)	64.50%
None/observation alone	26 (14.2)	–
R-CHOP	10 (5.5)	60%
Other	8 (4.4)	75.00%
R-CVP	3 (1.6)	66.70%

Table 4. Factors predictive of progression on univariate analysis

Factor	P-value
Age at diagnosis	0.467
MZL subtype	0.535
ECOG performance status at diagnosis	0.128
Stage at diagnosis	0.228
B symptoms at diagnosis	0.227
LDH higher than ULN	0.495
Bone marrow involvement at diagnosis	0.562
2+ sites of disease	**<0.001**
Frontline treatment regimen	**<0.01**

CONCLUSIONS

- Over half of patients had advanced stage disease
- Most commonly utilized treatments across subtype were BR and rituximab monotherapy, and XRT was utilized frequently in extranodal MZL; all had high response rates
- Long PFS was seen regardless of disease subtype
- Increased number of extranodal sites and use of R monotherapy as frontline therapy are associated with disease progression.

REFERENCES

1. Alaggio R, et al. The 5th edition of the World Health Organization Classification of Haematolymphoid Tumours: Lymphoid Neoplasms. *Leukemia* 2022; 36;; 1720-1748.

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