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POSTER ABSTRACTS

623.MANTLE CELL, FOLLICULAR, AND OTHER INDOLENT B CELL LYMPHOMAS: CLINICAL AND EPIDEMIOLOGICAL

Trends in Survival Outcomes for Mantle Cell Lymphoma in the Era of Novel Therapies

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Introduction

Mantle Cell Lymphoma (MCL) is a rare malignancy, associated with aggressive features and poor outcomes. Previous treatment paradigms for MCL involved chemoimmunotherapy and stem cell transplant (SCT), though this has evolved in recent years with the introduction of novel treatments, including bruton's tyrosine kinase (BTK) inhibitors, chimeric antigen receptor T-cells (CAR-T) and immunomodulatory agents such as lenalidomide. Additionally, the incorporation of rituximab maintenance therapy following SCT has demonstrated improved progression-free (PFS) and overall survivals (OS) for MCL patients (pts). While the majority of these novel agents and treatments were FDA approved by demonstrating improved PFS, the benefits of these new treatments on OS trends for MCL pts are not well described. Therefore, to determine whether these advances have translated to OS improvement in the real-world setting, we performed a national analysis of OS trends through multiple treatment eras.

Methods

The National Cancer Database was used to identify pts diagnosed with MCL from 2004-2020. For pts receiving treatment, the use of front-line single or multiagent therapy, and upfront SCT was compared. Kaplan-Meier and Cox regression analysis was used to compare OS for all MCL pts. Survival was compared by year of diagnosis, with diagnosis in 2004-2013 considered to be managed in the era of chemoimmunotherapy, 2014 and later associated with the introduction of BTK inhibitors, and 2017 and later with the adoption of maintenance rituximab following SCT.

Results

A total of 31,284 pts with MCL were identified. The mean age at diagnosis was 67 years (yrs) [SD ±12], 93% of pts were White, and 70% had stage IV disease at diagnosis. Pts were increasingly more likely to have ≥2 comorbidities at MCL diagnosis (6.2% from 2004-2013, 8.6% from 2014-2016, and 10.8% from 2017-2020) and were increasingly managed at academic centers (40%, 44%, and 46%, respectively). Rates of pts managed with active surveillance significantly increased over time (4.7% from 2004-2013, 6.7% from 2014-2016, and 8.7% from 2017-2020). Regarding treatment, the rate of upfront multi-agent chemotherapy use decreased over time (67.7% from 2004-2013, 45.2% from 2014-2016, and 38.9% from 2017-2020), corresponding with an increase in single agent treatment (7.9%, 28.2%, and 32.4%, respectively). Notably, the rate of pts receiving SCT following front-line treatment remained similar in each time period (13.6%, 15.4%, and 14.1%, respectively).

With a median follow-up of 3.5 yrs, the median OS for all pts with MCL from 2004-2020 was 5.9 yrs (95% CI 5.8-6.0 yrs). The median OS was significantly increased when comparing pts who were diagnosed between 2004-2013 (5.5 yrs) to those diagnosed 2014-2016 (6.8 yrs), and median was not reached for pts diagnosed 2017-2020 (all $p<0.001$). The median 1-, 3-, and 5-year OS significantly increased following the availability of novel agents after 2014 (2004-2013: 1-year 80%, 3-year 63%, 5-year 52% vs. 2014-2016: 1-year 82%, 3-year 67%, 5-year 58%, $p<0.001$). Whereas, pts diagnosed from 2017-2020 had similar OS trends as pts diagnosed from 2014-2016 with 1-year 82%, 3-year 66%, 5-year 51% OS, respectively. When adjusted for age and comorbidity burden, the most recent time periods were associated with decreased risk of death (2014-2016: HR 0.81 [95% CI 0.78-0.85], and 2017-2020: HR 0.82 [95% CI 0.78-0.86]) when compared to 2004-2013 (all $p<0.001$).

Conclusions:

To our knowledge, this is the largest retrospective review evaluating treatment trends and OS outcomes in pts with MCL in recent decades. These data show that OS has significantly improved for pts diagnosed in the most recent time periods. We hypothesize this is due to the introduction of novel agents such as BTK inhibitors, which is supported by the increased rate of single agent treatment over time, which may be related to BTK inhibitors supplanting chemoimmunotherapy in the front-line setting. We also found that no additional OS improvement was observed during the time period following the adoption of

rituximab maintenance after transplant, which may be due to the limited number of pts receiving SCT through each time period. With more follow-up data, future studies may determine whether treatments such as CAR-T (FDA approved in 2020 with data not included in this cohort) have further improved OS outcomes for this incurable malignancy.

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Table 1: Demographics and treatment characteristics of Mantle Cell Lymphoma patients by year of diagnosis (N=31,284)

	All		2004-2013		2014-2016		2017-2020	
	N	%	N	%	N	%	N	%
Total	31,284	-	16,238	51.9%	6,145	19.6%	8,901	28.5%
Age (N=31,284)								
Mean (SD)	67.3 (11.7)		66.9 (11.9)		67.5 (11.6)		67.8 (11.3)	
Median	67		67		68		68	
Race (N=31,003)								
White	28,825	93.0%	15,088	93.7%	5,653	93.0%	8,084	91.6%
Black	1,330	1.3%	670	4.2%	247	4.1%	413	161.0%
Asian	466	1.5%	206	1.3%	99	1.6%	161	1.8%
Other	382	1.2%	132	0.8%	82	1.3%	168	1.9%
Charlson-Deyo Comorbidity Index (N=31,284)								
0	24,010	76.7%	12,638	77.8%	4,707	76.6%	6,665	74.9%
1	4,779	15.3%	2,594	16.0%	909	14.8%	1,276	14.3%
≥2	2,495	8.0%	1,006	6.2%	529	8.6%	960	10.8%
Facility type (N=30,950)								
Academic	13,113	42.4%	6,415	40.0%	2,679	44.0%	4,019	45.6%
Non-Academic	17,837	57.6%	9,627	60.0%	3,409	56.0%	4,801	54.4%
Stage (N=28,619)								
I	2,331	8.1%	1,348	9.2%	421	7.3%	562	6.8%
II	2,149	7.5%	1,157	7.9%	408	7.1%	584	7.1%
III	4,375	15.3%	2,129	14.6%	883	15.4%	1,363	16.5%
IV	19,764	69.1%	9,993	68.3%	4,034	70.2%	5,737	6960.0%
Treatment Characteristics	N	%	N	%	N	%	N	%
Systemic Treatment, 2010 and later (N=22,145)								
Not Treated	1,667	7.5%	530	7.4%	449	7.4%	688	7.8%
Treated	18,961	85.6%	6,315	87.9%	5,241	86.0%	7,405	83.5%
Active Surveillance	1,517	6.9%	337	4.7%	407	6.7%	773	8.7%
Chemotherapy (N=30,906)								
No	7,195	23.3%	3,279	20.5%	1,472	24.3%	2,444	27.7%
Single Agent	5,841	18.9%	1,270	7.9%	1,714	28.2%	2,857	32.4%
Multi Agent	17,032	55.1%	10,854	67.7%	2,746	45.2%	3,432	38.9%
Transplant (N=31,064)								
Yes	4,383	14.1%	2,191	13.6%	940	15.4%	1,252	14.1%
No	26,681	85.9%	13,896	86.4%	5,158	84.6%	7,627	85.9%

SD: Standard Deviation

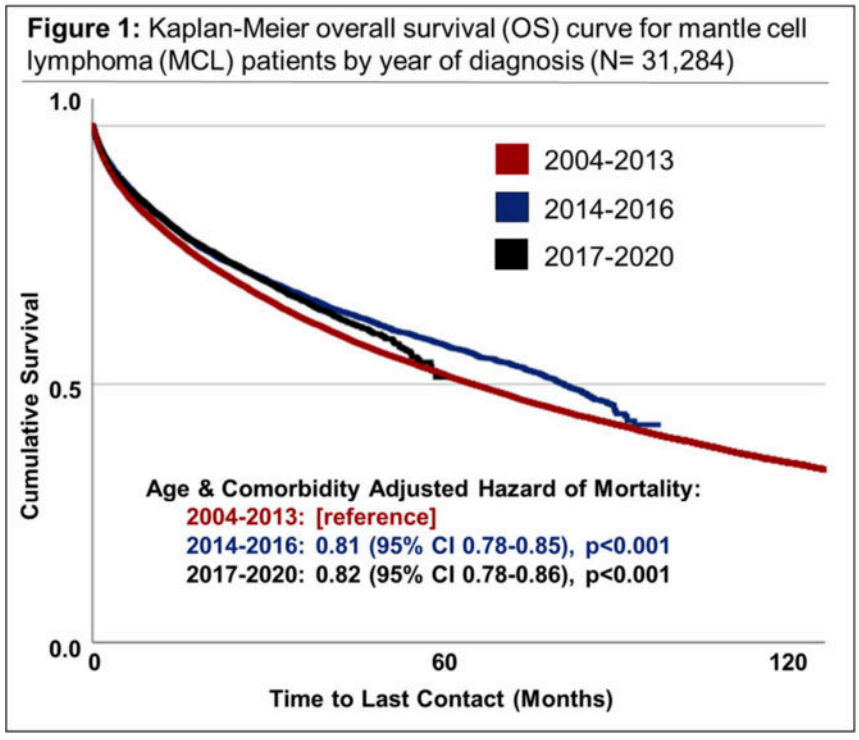

Figure 1

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