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ELEVENTH ANNUAL MEETING

OUTCOMES OF U.S. MILITARY VETERANS WITH CLL TREATED WITH DIFFERENT FIRST LINE TREATMENTS FROM 1998 TO 2020

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INTRODUCTION

- Targeted therapies such as Bruton tyrosine kinase (BTK) inhibitors and BCL-2 inhibitors are approved for first-line treatment of chronic lymphocytic leukemia (CLL).
- The impact of these therapies on outcomes of CLL in U.S. military veterans, in whom lymphoid malignancies may be associated with unique epidemiological factors, remains unknown.

AIM

Determine whether choice of first line treatment of CLL is associated with differences in survival in U.S. veterans.

METHOD

- Retrospective study (January 1998–December 2020) using the U.S. national VA healthcare system comparing first-line treatments in veterans diagnosed with CLL.
- Overall survival was calculated from date of first treatment until last cut off.
- Cox regression was performed on patients who received: 1) targeted therapies (ibrutinib, acalabrutinib, and venetoclax +/- monoclonal antibody [mAb]); 2) chemoimmunotherapy; 3) chemotherapy; and 4) monoclonal antibodies.

CONCLUSIONS

- In U.S. veterans, first line treatment of CLL with targeted therapies was associated with longer OS compared to those treated with chemotherapy or monoclonal antibodies but not chemoimmunotherapy.
- Exposure to targeted agents at some time during the course of treatment was associated with longer survival compared to no exposure to these agents.

RESULTS

- Of 16331 veterans diagnosed with CLL (98% male), 6,332 received treatment.
- Use of targeted agents for first-line therapy increased from 0% in 1998 to almost 80% in 2020 (Figure 1). Specific targeted agents (n=1379) mostly comprised ibrutinib (93%).
- Of the others (n=4953), 2568 (41%),1647 (26%), and 738 (12%) patients were treated with chemoimmunotherapy, chemotherapy, and monoclonal antibody, respectively.
- Median OS was 6.1 years (95% CI: 5.7–6.4), 5.5+ years (95% CI: 5.1–not reached), 4.6 years (95% CI: 3.8–5.2), and 3.6 years (95% CI: 3.4–3.8) for chemoimmunotherapy, targeted therapy, mAb, and chemotherapy, respectively (Figure 2).
- Those treated with chemoimmunotherapy were significantly younger than those treated with other therapies (p<0.001).
- In a multivariate Cox regression analysis, older age at diagnosis (HR 1.042, 95% CI 1.024-1.061, choice of first-line therapy: targeted therapies (HR 0.637, 95% CI: 0.543–0.747, P<0.0001), chemoimmunotherapy (HR 0.803, 95% CI: 0.734-0.870, P<0.0001), and mAb (HR 0.835, 95% CI: 0.738–0.946, P=0.0044) compared to chemotherapy, and any exposure to targeted treatments (HR 0.424, 95% CI: 0.384–0.468, P<0.0001) were significantly associated with survival.

Characteristics	All Veterans, n=16331	Untreated, n=9999	Treated, n=6332
Age at diagnosis, median (range)	70 (23-102)	71 (23-102)	67 years (25-99)
Time from diagnosis to treatment, median (range)	N/A	N/A	2 years (0-21)
Age at treatment, median (range)	N/A	N/A	70 years (29-99)
Male, n (%)	16044 (98%)	9821 (98%)	6223 (98%)
Race, n (%)			
White	12835 (79%)	7974 (80%)	4861 (77%)
Black	1670 (10%)	795 (8%)	875 (14%)
Other	268 (2%)	170 (2%)	98 (2%)
Unknown	1558 (10%)	1060 (11%)	498 (8%)
Ethnicity, n (%)			
Not Hispanic	14622 (90%)	8874 (89%)	5748 (91%)
Hispanic	446 (3%)	293 (3%)	153 (2%)
Unknown	1263 (8%)	832 (8%)	431 (7%)
Tobacco use, n (%)			
Current/Former	9925 (61%)	5969 (60%)	3956 (62%)
Never user	4010 (25%)	2515 (25%)	1495 (24%)
Unknown	2396 (15%)	1515 (15%)	881 (14%)

Figure 1. Stacked Bar Graph of First Line Therapies by Year

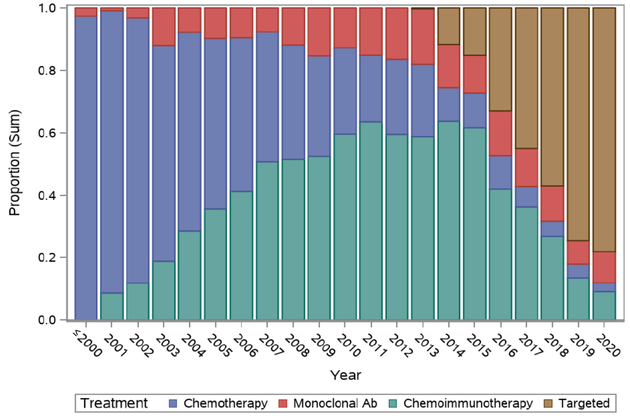
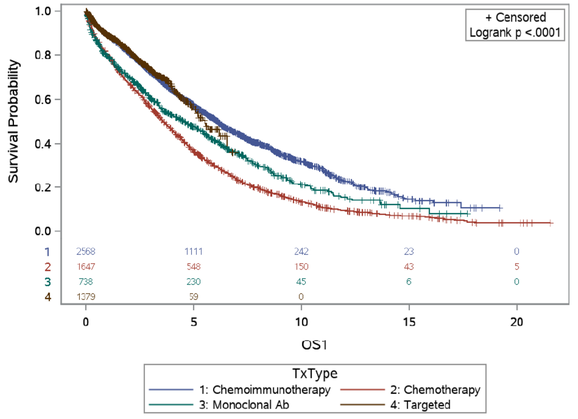


Figure 2. Overall Survival Based on First Line Therapy



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