



## The 65th ASH Annual Meeting Abstracts

## POSTER ABSTRACTS

## 642. CHRONIC LYMPHOCYTIC LEUKEMIA: CLINICAL AND EPIDEMIOLOGICAL

**Chronic Lymphocytic Leukemia (CLL) in Adolescents and Young Adults (AYA): Clinical Characteristics, Prognostic Factors and Survival for 498 Patients**

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**Background**

Chronic lymphocytic leukemia (CLL) is primarily a disease of the elderly; however, it can also present in Adolescents and Young Adults (AYA) aged 15 to 39 years. Recent information of case series no larger than 227 patients each described clinical outcomes such as a 5-year Overall Survival (OS) of 90% and a 10-year OS of 78% for AYA<sup>1-4</sup>. Data on the effect of age on OS in CLL is conflictive among studies<sup>2,3</sup>. A higher proportion of males with CLL have been reported in the younger ages compared with olders in some series<sup>2,4</sup> but not in others<sup>3</sup>. Sociodemographic characteristics and distribution between younger and older CLL patients have not been extensively reported<sup>2,4</sup>. The objective of our study is to describe the clinical and sociodemographic characteristics, prognostic factors and survival in AYA diagnosed with CLL.

**Materials and Methods**

Cases of CLL were obtained from the Surveillance, Epidemiology, and End Results (SEER) Database from 2000 to 2020. Statistical analyses were conducted with SPSS® version 25. Patient characteristics were reported in frequencies and compared with the Chi-squared test. The Kaplan-Meier method was used to estimate the median Overall Survival (OS). Cox Regression was done to identify independent prognostic factors of survival.

**Results**

A total of 51,992 cases of CLL were identified. The median age of diagnosis was 69 years (interquartile range: 18 years). 498 AYA cases (1% of total population) were found (Table 1). For them, 66.1% were males, 70.3% were non-Hispanic whites and 90.2% lived in metropolitan areas. A median income of  $\geq$ \$75,000 was noted in 45.6% of the patients. Chemotherapy was received by 32.7% and radiation therapy was given to 1.6%. The median OS for AYA population was not reached (Figure 1), with a 5-year and 10-year OS of 91% and 84%, respectively. OS was different between AYA vs older population, and age was found to be an independent prognostic factor for survival in the entire population of CLL ( $p < 0.001$ , Figure 1). The age group comparison also found more proportion of males in AYA vs olders (66.1% vs 58.5%,  $p < 0.001$ ), more proportion of non-white patients in AYA group (29.6% vs 15.3%,  $p < 0.001$ ) and that AYA patients were more prone to receive chemotherapy (32.7% vs 14.8%,  $p < 0.001$ ). The multivariate analysis specific for AYA population found that American Indian/Alaska Native Non-Hispanic patients had poor prognosis compared with other races (HR=19.1, CI 95%: 2.2-166.5,  $p = 0.008$ ). Also, receiving radiotherapy (Beam radiation) was associated with poor prognosis (HR=5.5, CI 95%: 1.6-19.6,  $p = 0.008$ ). Compared to people with income  $<$ \$35,000, all patients with higher income had better prognosis (for patients with  $\geq$ \$75,000 median income the HR was 0.01, 95% IC: 0.001-0.11,  $p < 0.001$ ). Chemotherapy was not found to be an independent prognostic factor in this population ( $p = 0.8$ ).

**Conclusions**

To the best of our knowledge, this is the largest epidemiological study available for CLL in AYA to this date. Sociodemographic differences and epidemiologic prognostic factors described in this research contribute to understand this disease. Interventional studies are required to identify possible targeted therapies that could improve survival outcomes in this population. We believe that the differences in distribution and prognosis for the described variables in our study can contribute towards optimizing the randomization in interventional trials in the future.

**References**

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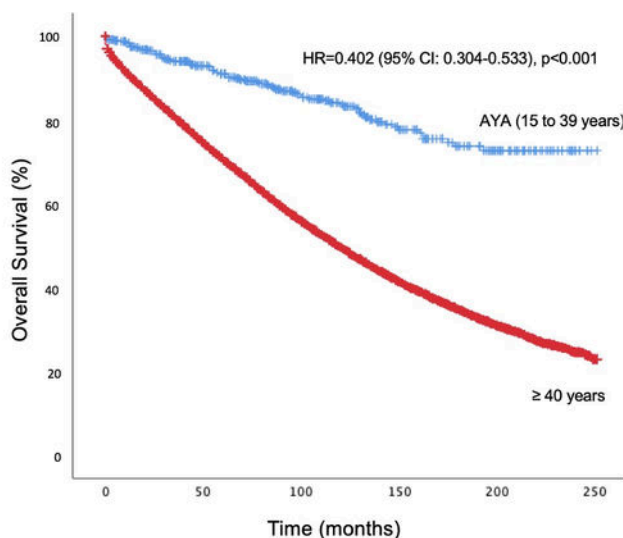
**Disclosures Becerra:** *Grunenthal Colombiana SA:* Ended employment in the past 24 months.

**Table 1. Demographic characteristics of CLL population: AYA (15 to 39 years) vs ≥40 years**

	15 to 39 years n(%)	≥40 years n(%)	p*
<b>Sex</b>			
Male	329 (66.1)	30093 (58.5)	<0.001
Female	169 (33.9)	21382 (41.5)	
<b>Race</b>			
Non-Hispanic White	350 (70.3)	43550 (84.6)	<0.001
Non-Hispanic Black	52 (10.4)	3512 (6.8)	
Non-Hispanic American Indian/Alaska Native	5 (1.0)	174 (0.3)	
Non-Hispanic Asian or Pacific Islander	31 (6.2)	1312 (2.5)	
Hispanic (All Races)	60 (12.0)	2927 (5.7)	
<b>Income (in USD)</b>			
<\$35,000	3 (0.6)	505 (1.0)	0.004
\$35,000 - \$59,999	83 (16.7)	11934 (23.2)	
\$60,000 - \$74,999	185 (37.1)	16942 (32.9)	
≥\$75,000	227 (45.6)	22094 (42.9)	
<b>Area of living</b>			
Metropolitan	458 (92.0)	44272 (86.0)	<0.001
Non-metropolitan	39 (7.8)	7192 (14.0)	
Unknown	1 (0.2)	11 (0.02)	
<b>Time to treatment</b>			
≤1 month	114 (71.7)	5396 (65.5)	0.104
>1 month	45 (28.3)	2841 (34.5)	
<b>Chemotherapy</b>			
Yes	163 (32.7)	7623 (14.8)	<0.001
No/Unknown	335 (67.3)	43852 (85.2)	
<b>Radiotherapy</b>			
Beam radiation	7 (1.4)	151 (0.3)	<0.001
Other type of radiotherapy	1 (0.2)	8 (0.01)	
None/Unknown	490 (98.4)	51316 (99.7)	

\*Comparison for each variable was done using Chi-square test

**Figure 1. Overall Survival for AYA vs ≥ 40 years**



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Figure 1

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