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POSTER ABSTRACTS

612.ACUTE LYMPHOBLASTIC LEUKEMIAS: CLINICAL AND EPIDEMIOLOGICAL

No Improvement in the Age Adjusted Mortality of Older Adults with Acute Lymphoblastic Leukemia Despite the Availability of Blinatumumab, Inotuzumab and Novel TKIs : A 1999-2020 Analysis in the United States

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Introduction: Acute Lymphoblastic Leukemia (ALL) has a bimodal distribution and while it is the most common malignancy in children, it can also present in adults 55 years of age and older. Adverse disease biology and comorbidities that preclude delivering curative regimens are factors that underlie the markedly disparate outcomes seen between childhood and older adult ALL. Advancements in therapy have improved prognosis in children, however in adults' treatment outcomes are worse. Our study aims to compare mortality trends in older adults compared to children within the United States with ALL.
Methods: Using the Center for Disease Control and Prevention Wide-Ranging Online Data for Epidemiologic Research database, we reviewed death certificate data for ALL patients from 1999 to 2020, age 55 and older in the United States. ICD code C91.0 (Acute lymphoblastic leukemia - Malignant neoplasms) was used to identify patients with ALL. Age-adjusted mortality rates (AAMRs) were calculated per 1,000,000 people and stratified patients by sex, race/ethnicity, and census region (Northeast, Midwest, South, and West). A comparison group between ages 0 and 15 was added with an identical stratification of sub-group data.
Results: In the United States from 1999 to 2020 there were 17,238 deaths in ALL patients 55 and older. For this population there was not an improvement in mortality over the last twenty years (10.8, AAMR 1999) and (10.6, AAMR 2020). Further subgroup analysis did not reveal a significant difference over the years by reported sex, race, and US census region. Men and hispanic patients had the highest AAMR consistently, 12 and 13.6 in 2020. There was a statistically significant improvement in ages 0-15 for overall AAMR, 3.5 in 1999 to 2.2 in 2020 (Table 1).
Conclusion:
There has not been a significant improvement in AAMR for adults 55+ with ALL despite improvements seen in the pediatric patient population. Over the last twenty years AAMR in the older adult population has unfortunately been stagnant. This is despite the approval of several new therapies for adult patients with ALL including blinatumumab, inotuzumab, and the increased recognition of the importance of targeted tyrosine kinase inhibitor-based therapy for patients with Ph+ ALL, which is certainly much more prevalent in the older adult ALL population. The lack of AAMR despite the numerous seemingly therapeutic advances made in the adult population underscores the need to specifically study new therapeutics, their outcomes, utilization, and toxicities, in the sub-population of older adults with ALL in order to understand the lack of collective benefit seen in this unique patient population. Continued monitoring of the AAMR trends in this patient population will soon begin to reflect the availability of CART therapy.

Disclosures Koprivnikar: *Alexion:* Consultancy; *GSK:* Consultancy; *Novatis:* Consultancy; *Apellis:* Consultancy.

Table 1:AAMR Data for Older Adults and Children in 1999 and 2020

AAMR per 1,000,000	Age 55+ 1999	Age 55+ 2020	Age <1-14 1999	Age <1-14 2020
Overall	10.8	10.6	3.5	2.2
Women	8.7	9.5	3	2
Men	13.9	12	4	2.4
Black	8.3	7.2	2.2	N/A
White	11.1	11.3	3.8	2.3
Hispanic	12	13.6	4.7	2.8
Northeast	9.5	9.1	3	2.8
Midwest	12	12	3.4	1.6
South	10.8	10.3	3.6	2
West	10.8	11.1	3.8	2.7

Figure 1. Overall AAMR in Older Adults Compared to Children

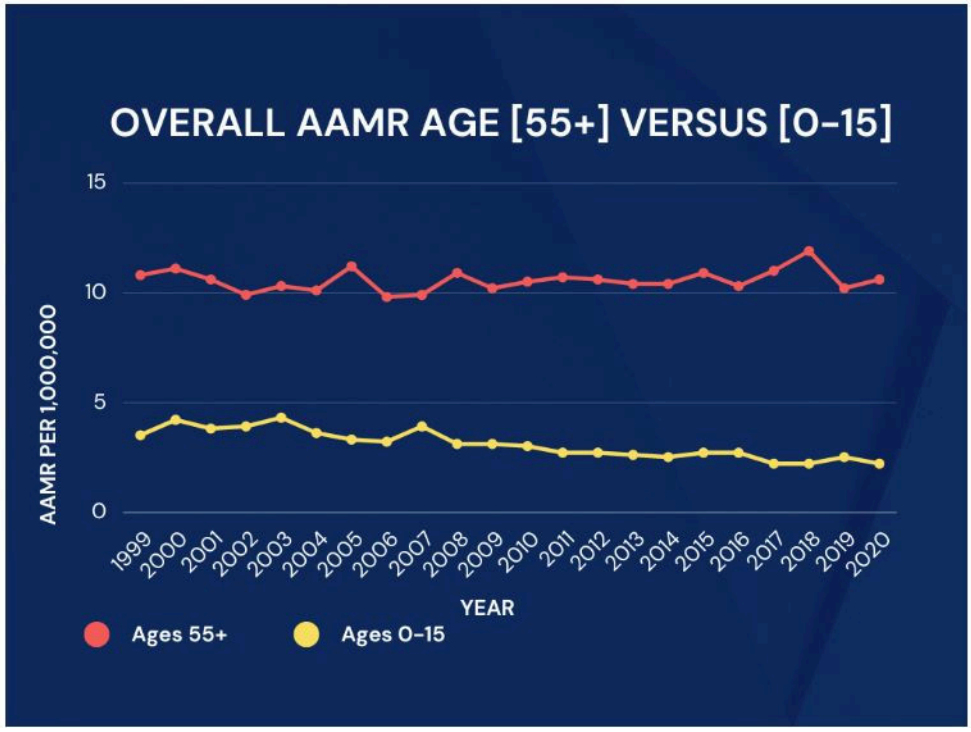

Figure 1

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