ELSEVIER

Blood 142 (2023) 2857

The 65th ASH Annual Meeting Abstracts

POSTER ABSTRACTS

613.ACUTE MYELOID LEUKEMIAS: CLINICAL AND EPIDEMIOLOGICAL

Survival Outcomes of Acute Megakaryoblastic Leukemia in the United States: A 10-Year SEER-Based Study

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Background: Acute megakaryoblastic leukemia (AMKL) is a rare subtype of acute myeloid leukemia (AML), commonly observed in children with Down Syndrome (DS) but also seen in adults. The cytogenetic abnormality t(1;22)(p13.3;q13.1), has been reported in children with non-DS AMKL, which involves the fusion of RNA-binding motif protein-15 and megakaryoblastic leukemia-1 resulting in abnormal proliferation of megakaryocyte progenitors. Population-level data on outcomes of AMKL is scarce.
Methods: We conducted a retrospective analysis using the Surveillance Epidemiology and End Results (SEER) database, a U.S. population-based registry maintained by the National Cancer Institute. We included all cases with histologically confirmed diagnoses of AMKL and AML with t(1;22)(p13.3;q13.1) between the years 2010 and 2019. Survival analysis was performed using the Kaplan-Meier method, and differences in overall survival (OS) were assessed using the log-rank test.
Results: The analysis included a total of 217 cases, consisting of 54 patients with AML with t(1;22)(p13.3;q13.1) and 163 patients with AMKL. Among the AML cases with the cytogenetic abnormality, the median age was 58 years (ranging from 0 to 89 years), and 61% were female. 74% (n=40) of these patients received chemotherapy. The 1-year survival rate was 54.0% for the pediatric group (age < 18 years, n=10) and 44.6% for the adult group (age > 18 years, n=44) (Median OS 20 vs 8 months, p=0.69). Patients who received chemotherapy had a significantly higher 1-year survival rate of 57.9% compared to 14.3% in those who did not receive chemotherapy (p=0.0005). No significant difference in survival was observed when patients were grouped based on the year of diagnosis, with 1-year survival rates of 50.8% for the period 2010-2014 and 41.3% for 2015-2019 (p=0.66). Patients with AMKL were divided into two age groups: pediatric AMKL (age < 18 years, n=96) and adult AMKL (age > 18 years, n=67). The median age in this group was 3 years (ranging from 0 to 86 years), and 55% were male. 81% (n=132) of these patients were treated with chemotherapy. The 1-year survival rate for the pediatric group was 79.4%, whereas it was 17.6% for the adult group (p<0.0001). Chemotherapy significantly improved overall survival (OS) for both pediatric and adult groups, with 1-year survival rates of 82.5% vs. 35.7% in the pediatric group and 27.6% vs. 0.00% in the adult group in patients who did and did not receive chemotherapy, respectively (p=0.041 for pediatric group and p<0.0001 for adults). No significant differences in survival were observed among the groups based on the year of diagnosis, both in adults and the pediatric group.
Conclusion: AMKL is commonly seen in infants and children, but it can affect individuals of all age groups. The prognosis is more favorable in pediatric patients. In contrast, outcomes for adults remain poor with current chemotherapeutic agents. Interestingly, AML with t(1;22)(p13.3;q13.1), which has been predominantly reported in children in the literature, was found to be more common in adults in this study. Regardless of age group, current treatments show poor outcomes. This study emphasizes on the urgent need for investigational agents.

Disclosures No relevant conflicts of interest to declare.

https://doi.org/10.1182/blood-2023-189329