

Acute Leukemia of Ambiguous Lineage in Elderly Patients: A SEER-Medicare Database Analysis

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About Research in Context

In this article, the authors of recent scholarship have been asked to discuss the implications of their research on federal health care providers and specifically the veteran and active-duty service member patient populations. Because the article does not include new research and cannot be blinded, it has undergone an abbreviated peer review process. The original article can be found at Guru Murthy GS, Dhakal I, Lee JY, Mehta P. Acute leukemia of ambiguous lineage in elderly patients - analysis of survival using surveillance epidemiology and end results-Medicare database. Clin Lymphoma Myeloma Leuk. 2017;17(2):100-107.

Acute leukemia of ambiguous lineage (ALAL) is a rare disorder in adults, constituting about 3% to 5% of acute leukemia cases. Unlike acute myeloid leukemia (AML) or acute lymphoblastic leukemia (ALL), ALAL cannot be clearly differentiated into a single subtype based on immunophenotyping. The diagnostic criteria for accurately identifying ALAL has evolved over time. There is paucity of information regarding the outcomes and management of this rare leukemia especially in elderly patients, and it is unclear whether treatment improves survival in these patients.

We performed a retrospective analysis of the Surveillance, Epidemiology, and End Results (SEER)-Medicare linked database to describe the outcomes of ALAL in the elderly population in U.S.¹ Patients included in the analysis were aged > 65 years, with a pathologically confirmed diagnosis of ALAL, diagnosed between 1992-2010, and on active follow-up. Information on patient demographics, treatment, chemotherapeutic agents used in treatment, and survival was obtained and analyzed using appropriate statistical methods. A total of 705 patients with a median age of 80 years were included. There was a higher proportion of males than females

and a higher proportion of white patients compared with African Americans and other races. We found that the overall survival (OS) declined significantly with increasing age, and treatment with chemotherapy improved the survival. However, factors such as gender, race, or type of chemotherapy received (ALL based, AML based, or other regimens) did not significantly influence the survival.

Even in the current era, the optimal therapy for ALAL is not well established. Although options such as AML-based or ALL-based chemotherapy are available, the best chemotherapy regimen and its sequence is unknown as prior studies have demonstrated varying results.²⁻⁵ Among elderly patients, numerous factors such as performance status, comorbidities, and ability to tolerate therapy influence the treatment decision. In light of the poor prognosis in elderly patients, a question often arises in the clinician's mind about whether chemotherapy would provide any benefit for the patient.

Our study results showed that chemotherapy likely improves survival in these patients. However, due to the smaller number of patients, caution is needed in interpreting the result that there was no significant difference between AML-directed or ALL-directed chemotherapy. Another factor highlighted in the study was that only about 21.5% of patients had been treated with chemotherapy. Due to the inherent nature of the database, we could not identify the factors that may have influenced treatment decisions in these patients. Additionally, patients with stem cell transplantation-related claims could not be included in the analysis due to noncontinuous Medicare coverage during the study period. Hence, the role of stem cell transplantation in these patients could not be determined.

IMPLICATIONS AMONG VETERANS

Actual incidence of ALAL among veterans is not known. Whether the incidence of ALAL relates to

exposures to chemicals or toxins during military training and service also is unknown. However, ALAL is likely to be at least as prevalent as it is in the nonveteran population and perhaps more so because of exposures and stresses during military training and service.

It is unclear whether veterans attending VA hospitals receive less or different treatment given the higher comorbidities. Finally, it also is not known whether the outcomes for veterans would be different with or without treatment.

Our findings suggest that treatment should be seriously considered in all patients (veterans or not) who are healthy enough to receive chemotherapy regardless of their age. More research is needed to determine the disease incidence and prevalence among veterans and to evaluate whether there are specific etiologic correlations between ALAL and military exposures, whether the natural history is similar to other populations, and to delineate responsiveness to treatment.

CONCLUSION

This study suggests a poor survival for elderly patients with ALAL in the U.S. Although treatment is associated with an improvement in survival, only 21.5% of patients have received therapy. The optimal choice of chemotherapy

for this disease is still not known and warrants prospective studies.

AUTHOR DISCLOSURES

The author reports no actual or potential conflicts of interest with regard to this article.

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