Utilization of Hypomethylating Agents and Associated Outcomes in Elderly Acute Myeloid Leukemia (AML) Patients: A Population Based Study

Maneesha Mehra1*, Jianming He1, Ravi Potluri2, Christina Loefgren1
1Janssen Global Services LLC, Raritan, NJ; 2SmartAnalyst Inc., New York, NY

INTRODUCTION:
- Acute myeloid leukemia (AML) is more common in the elderly population with an estimated median age of 70 years at diagnosis.
- Intensive chemotherapy is the standard of care for AML. The National Comprehensive Cancer Network (NCCN) recommends high-intensity induction therapy for patients aged ≥ 60 years only in limited circumstances. However, long-term survival in elderly patients treated with intensive chemotherapy remains low due to high risk of relapse and mortality. The prognosis is even worse in patients who are ineligible for intensive chemotherapy and treated with only supportive care.
- Hypomethylating agents (HMAs) like decitabine and azacitidine may be helpful in improving overall survival and quality of life in elderly patients with AML who are ineligible for intensive chemotherapy; however, limited comparative data are available regarding survival benefits with HMAs.
- This population based study was conducted to compare the survival outcomes between decitabine and azacitidine in elderly patients with AML. Outcomes were compared by sub-sets from the Surveillance, Epidemiology, and End Results (SEER)-Medicare database.

METHODS:
- Study design and sample selection
  - This was a retrospective cohort analysis performed on AML patients identified through the linked SEER-Medicare database, a linkage of two large population-based data sources that provide detailed information about beneficiaries with cancer.
  - Since, Medicare’s eligibility is restricted largely to the elderly population, the linked database was well suited for the study.
- Exclusion criteria
  - Patients who had index AML diagnosis between January 1, 2007 and December 31, 2014
- Enrollment in Medicare Part A and Part B at the time of index diagnosis
- Overall Survival
- Kaplan-Meier analysis and Cox proportional hazards regression were used to assess the overall survival by treatment. Kaplan-Meier analysis was stratified by age groups (>75 years and ≥75 years). The Cox proportional hazards model was adjusted for potential confounders such as treatment, age, gender, time to treatment, and transfusion status before treatment initiation.
- RESULTS:
  - A total of 9445 patients with AML met the inclusion criteria. Of these, 3922 patients received LOT1 treatment and 1582 patients received LOT2.
  - Demographics and baseline characteristics
    - A majority of the LOT1 patients were Caucasian (85%) and women (57%).
    - There was no association between race and selection of HMA (HMA type) during treatment.
  - Survival analysis
    - The mOS did not differ in both treatments by age group: <75 years (decitabine: 252 days, 95% CI: 227-289; azacitidine: 246 days, 95% CI: 220-283; p=0.9228) vs ≥75 years (decitabine: 179 days, 95% CI: 152-206; azacitidine: 185 days, 95% CI: 158-210; p=0.2805).
  - CONCLUSION:
    - Survival is comparable between LOT 1 and LOT 2.
    - There was no association between race and selection of HMA (HMA type) during treatment.

REFERENCES:

Figure 1. Distribution of regimens stratified by line of therapy (LOT)

Figure 4. Overall survival of decitabine vs azacitidine in second line of therapy (LOT 2)

Table 1. Patient demographics

Table 2. Cox proportional hazard model showing predictors of overall survival in second line therapy (LOT 1)

*Presenting Author

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*More information and references can be found in the full publication.