Introduction

• Acute myeloid leukemia (AML) is associated with a dismal prognosis in the elderly patients more than 60 years old.
• Intensive chemotherapy administered to elderly patients with acute myeloid leukemia is associated with high treatment related complications, mortality rates and low rates of long term survival.

• Azacitidine has been shown to prolong overall survival in a subgroup analysis of elderly patients with low bone marrow blast count (20 to 29%) AML.
• It is uncertain how azacitidine would compare with intensive chemotherapy in terms of overall survival and treatment related complications.
• It is also uncertain if azacitidine would be effective in patients with blast counts higher than 29%.

Aims

• Our study aims to compare the differences in mortality and morbidity of elderly patients with AML between patients who received intensive chemotherapy, azacitidine based treatment and best supportive care.

Methods

• Previously untreated AML patients 60 years or older diagnosed between January 2009 to June 2011 were included in this retrospective review.
• Patients with acute promyelocytic leukemia and those who died before initiation of treatment were excluded from the analysis.
• Intensive chemotherapy comprised of intravenous idarubicin 12mg/m² for 3 days and cytarabine 100mg/m² continuous infusion for 7 days, followed by consolidation with intravenous cytarabine 1.5g/m² twice daily on days 1, 3 and 5 for 3 to 4 cycles.
• In the azacitidine group, patients received subcutaneous azacitidine at 75mg/m² daily for 7 days with or without oral valproic acid 50mg/kg daily for 7 days and all-trans-retinoic acid 45mg/m² from day 3 to day 7.
• In the BSC group patients received hydroxyurea for cytoreduction, blood transfusions and antibiotics are administered as needed.
• Data was censored on 31st Mar 2012.
• Overall survival (OS) was estimated by the Kaplan-Meier Method.
• Differences between other patient characteristics were analyzed with the ANOVA test.

• After a median follow up of 7.2 months (Range: 0.5 to 28.4 months), estimated median OS for patients who received azacitidine based therapy was 9.8 months (range: 2.4 to 22.5 months), compared with 8.9 months (range: 0.2 to 26.4 months) for patients who received intensive chemotherapy (median = 0.99) and 1.6 months (range: 0.2 to 9.5 months) for patients who received best supportive care (p=0.001).
• 4 patients who received azacitidine attained complete remission (CR) or CR without platelet recovery.
• Compared with azacitidine based therapy, intensive chemotherapy is associated with:
  • More inpatient days (median 80 (range: 27 to 150) days vs 46 (range: 7 to 142) days; p=0.043).
  • Higher number of episodes of febrile illness requiring inpatient stay or intravenous antibiotics (median 3 vs 15; p=0.015).
• More days spent in an intensive care unit (median 2 (range: 0 to 8) vs no ICU stays; P = 0.005).

• Amongst patients who received azacitidine:
  • Those with bone marrow blast counts of less than 30% achieved a longer median survival compared with those with bone marrow blast counts of 30% or more (14.6 vs 9 months), however the difference was not statistically significant (p=0.31).
• Standard and favorable risk cytogenetics is associated with better survival compared with high risk cytogenetics in patients receiving azacitidine (14.6 vs 8 months; p = 0.028).

Conclusions

• In elderly patients with AML, azacitidine based therapy is associated with statistically similar median overall survival compared with intensive chemotherapy, even though the patients treated with intensive chemotherapy tended to be younger.
• Azacitidine treatment is associated with a lower number of hospitalization and ICU admission days and infective episodes, potentially maximizing time in the community while possibly maintaining a relatively good quality of life.
• In patients who received azacitidine based treatment, a blast count of 30% or more was not associated with a different outcome compared to patients with blast counts of 20 to 29%.
• Survival remains dismal in elderly patients with AML despite some improvements with the usage azacitidine.

References

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