

A single institutional review of the impact of geographic location and socioeconomic status on the outcomes of adults with Acute Myeloid Leukemia in the rural setting

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Introduction

- ❖ Acute myeloid leukemia (AML) is the most common acute leukemia in adults and is characterized by infiltration of neoplastic myeloid cells in the bone marrow, blood or other tissues
- ❖ AML can be cured in adults 60 years or younger in up to 40% of cases and in 5-15% of patients who are older than 60 years of age
- ❖ AML survival outcomes have been found to be impacted by the geographic variations and socioeconomic status of patients
- ❖ In one study conducted in North Carolina, mortality rates were higher in more rural areas
- ❖ The present study is a quality improvement initiative with two parts:
 - 1) Identify if socioeconomic factors such as travel distance to DHMC, income and education play a role in survival disparities in our predominantly rural population in New Hampshire
 - 2) Conduct needs assessments in AML patients' home communities post-hospital discharge

Methods

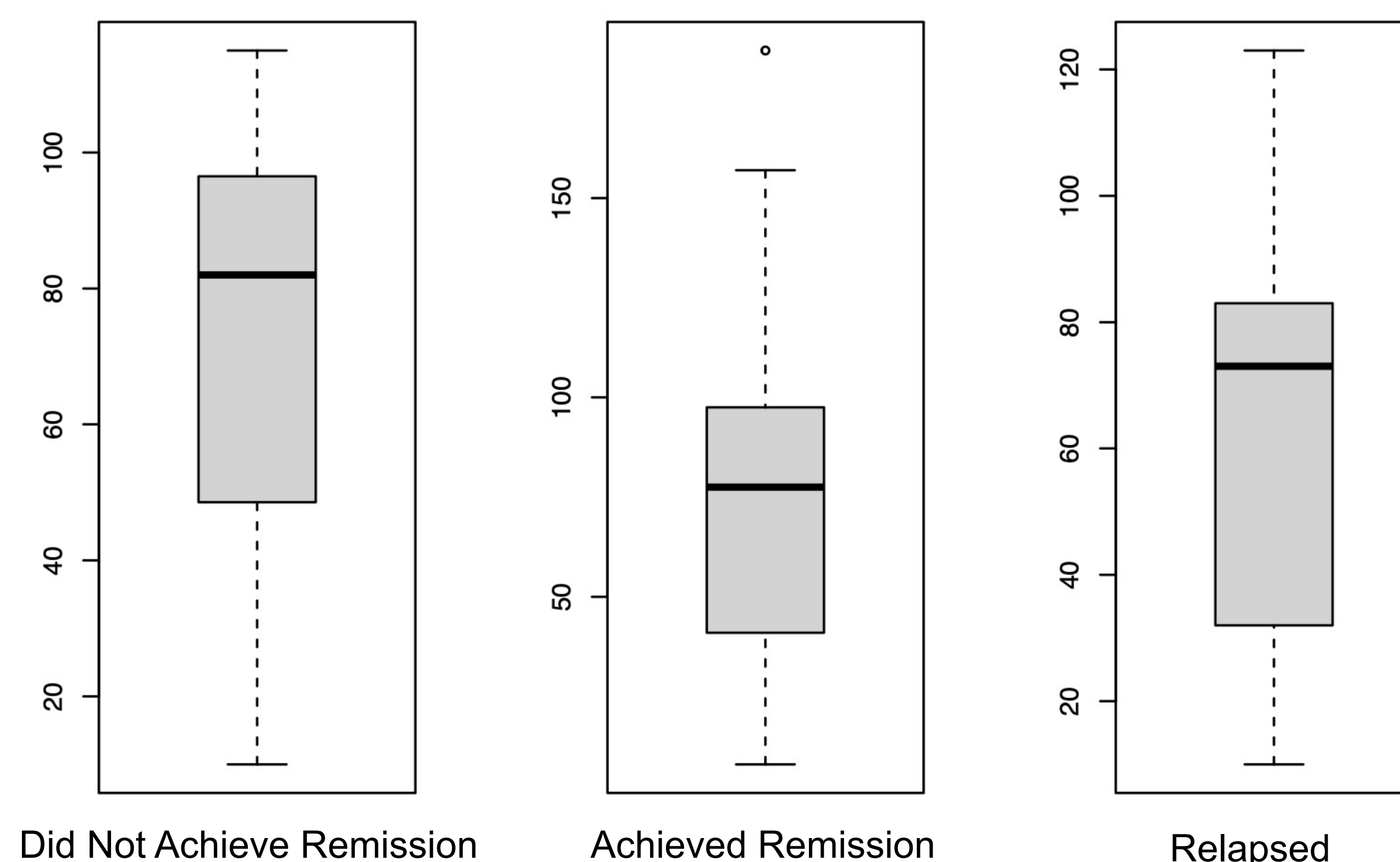
- ❖ A single institution retrospective chart review was performed
- ❖ Approximately 500 charts were reviewed
- ❖ Adult AML patients who received chemotherapy at DHMC from 1/2010 to 12/31/2020 were included in the final analysis
- ❖ 89 patients met inclusion criteria (64% males and 36% females; Self reported race/ethnicity: 84 White, 1 Black, 1 American Indian/Alaska Native, 1 Asian, 2 declined to report; Median age of 64 years)

Results

- ❖ 47 patients (53%) had high risk disease, 30 patients had intermediate risk disease (34%), 10 had favorable risk (11%), status unknown for 2 subjects
- ❖ Type of chemo regimen:
 - 25 patients (28%) received less intensive regimen (HMA based)
 - 64 patients (72%) received intensive chemo (7+3, 5+2, MEC, M/E, HIDAC, Clinical trial, etc.); 6 (of the 64 patients) received ATRA/ATO +/- Idarubicin
- ❖ Transplant:
 - 24 patients (27%) received transplant with 6 relapsed cases post transplant
- ❖ A one-way ANOVA was conducted to compare the effect of distance in minutes from the hospital on whether patients received remission, relapsed, or did not achieve remission. There was no significant effect of distance on patient outcomes, $F(2,86) = 0.483, p = 0.619$

Treatment Outcome	N	Mean	SD
Did Not Achieve Remission	34	71.57	30.93
Achieved Remission	32	73.04	39.44
Relapsed	23	64.13	30.91

Distances from Hospital (in Minutes) by Patient Outcomes



Discussion

- ❖ There was no significant difference in outcomes based on distance from the hospital
- ❖ This finding may be due to the quality of care delivered at satellite sites that are part of the Dartmouth-Hitchcock medical system
- ❖ Quality of satellite sites may be augmented by the fact that physicians from the main site travel to satellite sites to provide treatment
- ❖ The findings reported here are from preliminary analysis. Further analysis will be performed to analyze if patient outcomes differ based on other geographic variables including income and level of education.

Limitations

- ❖ There was a lack of racial/ethnic diversity and significantly more males than females in the group of patients that met inclusion criteria.

Conclusion and Future Direction

- ❖ This research points to the potential importance of satellite sites in rural regions to help achieve equal treatment outcomes in AML patients regardless of distance from the main hospital
- ❖ Future investigation with more diverse patient populations and comparison of outcomes for patients from communities with satellite sites as compared to patients living in communities without satellite sites is warranted

References

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