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THE IMPACT OF COVID-19 ON ACUTE MYELOID LEUKEMIA (AML): A PROPENSITY MATCHED ANALYSIS

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INTRODUCTION

- By 2023, COVID-19 has caused 6.8 million deaths in the United States[1].
- COVID-19 presents commonly with severe features in Leukemia compared to solid tumors (OR 1.6, p<0.05)[2,3].
- However, the data on AML is limited to a few case series[2].

AIM

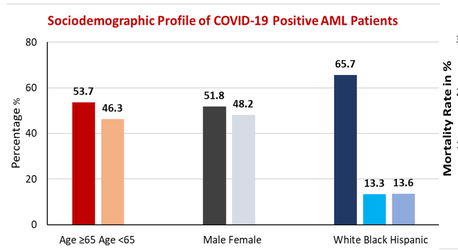
- Primary aim:
  - To study COVID-19 mortality in AML patients hospitalized for COVID-19
- Secondary aim:
  - To assess COVID-19 mortality in AML patients post-hematopoietic stem cell transplant (HSCT).

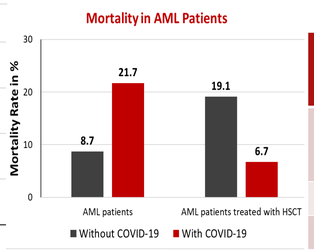
METHOD

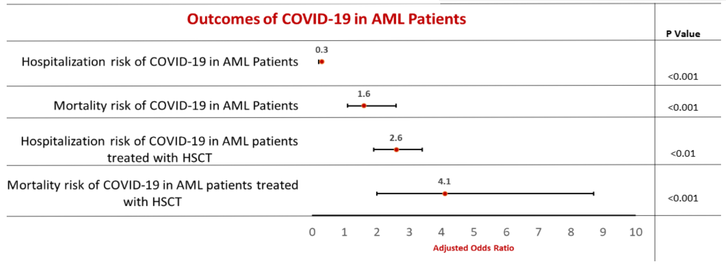
- A cross-sectional analysis was performed utilizing the National Inpatient Sample (2020-2021).
- Adults with AML who were admitted for COVID-19 were identified using ICD-10 codes.
- Analysis:
  - Descriptive statistics and Propensity based matching and multivariate regression analysis were performed to reduce confounders.
  - The significance level was set at P less than 0.05.

RESULTS

- Of 28,028 AML admissions, 336 (1.2%) were admitted with COVID-19.
- The mortality rate in COVID-19 was higher than that of all other causes (21.7% vs 8.7%; AOR 1.6, CI 1.1-2.6, P<0.05).
- Predictors of mortality:
  - Severe sepsis (AOR 6.7, CI 1.5-29.5, P<0.05),
  - Acute respiratory distress syndrome (AOR 17, CI 3.6-80.8, P<0.001),
  - Myocardial infarction (AOR 8.4, CI 2.2-32.6, P<0.01)
  - Invasive ventilation (AOR 9.8, CI 1.3-74.9, P<0.05).
- AML patients post-HSCT had increased mortality (19.1% vs 6.7%; AOR 4.1, CI 2-8.7, P<0.001) compared to other causes.







Predictors of Mortality in AML Patients with COVID-19

Predictors of Mortality	Adjusted Odds Ratio	95% Confidence Interval: Lower Limit CI	95% Confidence Interval: Upper Limit CI	P-value
Age ≥65 years	2.8	1.3	6	**<0.01**
Severe Sepsis	6.7	1.5	29.5	**<0.05**
ARDS	17	3.6	80.8	**<0.001**
Acute Respiratory Failure	4.5	1.5	13.7	**<0.01**
Acute Kidney Injury	1.6	0.7	3.7	>0.05
Myocardial Infarction	8.4	2.2	32.6	**<0.01**
Vasopressor Usage	3.2	0.5	19.2	>0.05
Invasive Ventilation	9.8	1.3	74.9	**<0.05**
HSCT status	0.5	0.2	1.2	>0.05

CONCLUSIONS

- AML patients with COVID-19 had a low risk of hospitalization but a high mortality rate.
  - This shows that any symptomatic patients with signs of sepsis, respiratory failure, and myocardial infarction need to be monitored closely
- HSCT treated patients faced a higher risk of both hospitalization and mortality.
- Further research is necessary to identify predictors of mortality in HSCT recipients.

REFERENCES

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