SOHO ANNUAL MEETING 2024

IMPACT OF ACUTE HEART FAILURE IN CHRONIC MYELOID LEUKEMIA (CML): PROPENSITY MATCHED ANALYSIS OF NATIONAL INPATIENT SAMPLE

BARATH P. SIVASUBRAMANIAN[1], RAGHAV SARAVANABAVANANDAN[2], DIVIYA B. RAVIKUMAR[3], UMABALAN THIRUPATHY[4], WALTER Y. AGYEMAN[5], IBTHISAM I. SHARIEFF[3], SIVA N. YARRARAPU[6], VIKRAMADITYA S. VENKATA[7]

1. Northeast Georgia Medical Center, Gainesville, Georgia, USA

2. University of Illinois College of Medicine, Peoria, Illinois, USA, 3. ESIC Medical College and Postgraduate Institute of Medical Science and Research, Chennai, Tamilnadu, India, 4. Saint Vincent Hospital, Indianapolis, Indiana, USA, 5. Piedmont Athens Regional Medical Center, Athens, Georgia, USA, 6. Monmouth Medical Center, Long Branch, New Jersey, USA, 7. Cheshire Medical Center, Keene, New Hampshire, USA

Northeast Georgia Medical Center
GRADUATE MEDICAL EDUCATION

INTRODUCTION

- Acute heart failure in CML (CML-AHF) can arise from leukemic infiltration, treatment-related effects, or other cardiovascular risk factors[1, 2, 3].
- Understanding the clinical profile is essential for tailoring optimum care.

AIM

- To identify the risk of Acute Heart Failure in Chronic Myeloid Leukemia patients
- To assess the mortality associated with CML-AHF

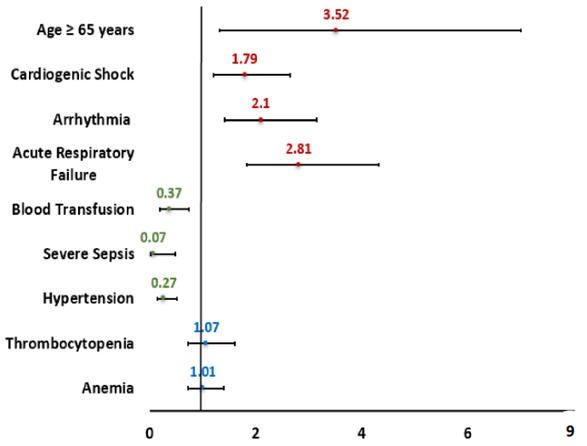
METHOD

- A cross-sectional analysis of the **National Inpatient Sample database (2018-2021)** was conducted using the ICD-10 codes
- Inclusion:
  - >18 years adults with Acute Heart Failure (AHF) among CML admissions.
- Statistical Analysis:
  - Propensity matching by gender and race
  - Multivariate regression adjusted for socio-demographics and comorbidities was performed.
  - The significance level was set at **p≤0.05**.

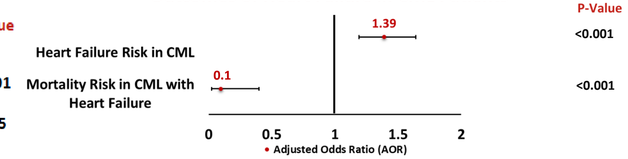
RESULTS

- Among 23,559 CML patients, 149 (0.63%) were admitted with AHF compared to 0.38% in non leukemic group (P<0.001).
- On stratifying heart failure in CML patients
  - 32 patients - Systolic HF (21.5%),
  - 77 patients - Diastolic HF (51.7%),
  - 23 patients - Combined HF (15.4%)
- **The mortality rate in AHF (3.36%)** was lower than all-cause-admissions (5.96%).
- High risk of AHF:
  - Age ≥ 65 years (AOR 2.8; CI 1.8-4.3)
  - Arrhythmia (AOR 1.8; CI 1.2-2.7)
  - Cardiogenic shock (AOR 3.5; CI 1.3-9.4)
  - Acute respiratory failure (AOR 2.1; CI 1.41-3.15)
- Low risk of AHF:
  - Hypertension (AOR 0.3; CI 0.1-0.5)
  - Severe Sepsis (AOR 0.1; CI 0.0-0.5)
  - Blood transfusion (AOR 0.4; CI 0.2-0.7)

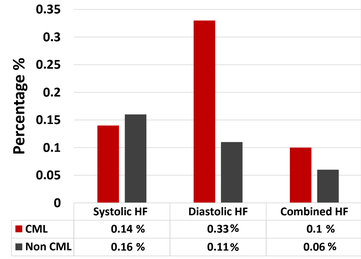
Predictors of Heart Failure in CML Patients



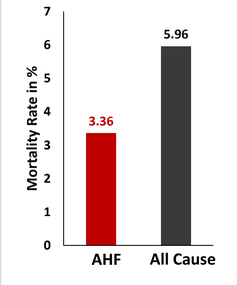
Outcomes of Heart Failure in CML Patients



Stratification of Heart Failure among CML and Non- CML Patients



Mortality in CML Patients



CONCLUSIONS

- Acute heart failure results in higher hospitalization rates in CML patients compared to the general hospital population.
- CML patients are at risk of heart failure and in addition to the factors we identified, therapeutic regimens that include tyrosine kinase inhibitors further increases the risk.
- However, acute heart failure is associated with lower mortality, reduced hospital charges, and shorter hospital stays
  - This indicates that prioritizing heart failure prevention is crucial to minimize hospitalization in CML patients.

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ACKNOWLEDGEMENTS

None

CONTACT INFORMATION

Email: Barathprashanth18196@gmail.com