Outcomes of Acute Myeloid Leukemia in Remission Following Admission for Influenza in the United States: A Propensity-Matched Analysis

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INTRODUCTION

Influenza infection can lead to severe respiratory illness and is a frequent cause of hospitalization in patients with leukemia. Individuals with Acute Myeloid Leukemia (AML) in remission remain vulnerable due to their underlying condition and prior treatment exposures.

AIM

To evaluate and compare hospital outcomes of influenza admissions in AML patients in remission versus non-AML patients

METHODS

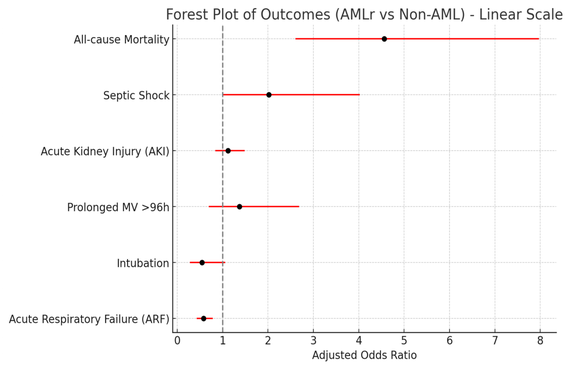
- **Data Source:** National Inpatient Sample (2016–2022)
- **Population:** Adults admitted primarily for influenza. Excluded patients with COVID-19.
- **Variables:**
  a) Primary outcomes: In-hospital mortality, acute respiratory failure (ARF), acute kidney injury (AKI)
  b) Secondary outcomes: Length of stay, hospitalization charges
- **Analysis:** Multivariable regression; outcomes as aOR with 95% CI, P<0.05

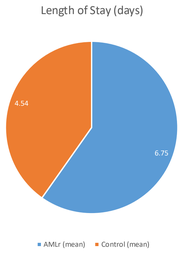
RESULTS

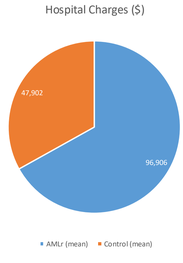
- **Lower odds of acute respiratory failure** in AMLr patients (aOR 0.58, *P*<0.01).
- **Similar rates** of intubation, prolonged ventilation, and acute kidney injury between groups.
- **Higher risk of septic shock** (aOR 2.02, *P*=0.046) and **increased all-cause mortality** (aOR 4.56, *P*<0.001) in AMLr patients.
- **Longer hospital stay** in AMLr patients (6.75 vs 4.54 days, *P*<0.01).
- **Nearly double hospitalization costs** in AMLr patients ($96,906 vs $47,902, *P*<0.01).

Outcome	aOR	95% CI	P-value
Acute Respiratory Failure (↓ risk)	0.58	0.43–0.78	<0.01
Intubation	0.55	0.28–1.06	0.073
Prolonged MV (>96 hrs)	1.37	0.70–2.69	0.359
Acute Kidney Injury	1.12	0.84–1.49	0.45
Severe Sepsis → Septic Shock (↑ risk)	2.02	1.01–4.03	0.046
All-cause Mortality (↑ risk)	4.56	2.61–7.97	<0.001

Outcome	AMLr (mean)	Control (mean)	P-value
Length of Stay (days)	6.75	4.54	<0.01
Hospital Charges ($)	96,906	47,902	<0.01







CONCLUSION

- AML remission patients admitted with influenza had **lower odds of acute respiratory failure** but **higher risk of septic shock and mortality** compared with controls.
- They also experienced a **longer hospital stay** and **nearly double the hospitalization costs**.
- Preventive strategies such as **vaccination, early recognition, and timely admission** may help improve outcomes in this high-risk group.