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Aspirin's Intriguing Role in Leukemia's In-hospital Hemorrhagic and Thrombotic Events

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BACKGROUND

- The role of aspirin in leukemia has been the subject of extensive debate over decades.
- Recent research has shed light on aspirin's potential benefits, showing its ability to promote apoptosis and decrease metastatic spread through platelet inhibition.
- Conflicting evidence exists regarding bleeding risk and thrombus formation.

AIM

In this study, we tried to analyze the impact of aspirin on in-hospital outcomes of leukemia on a large-scale basis, a domain that has not received comprehensive scrutiny.

METHODS

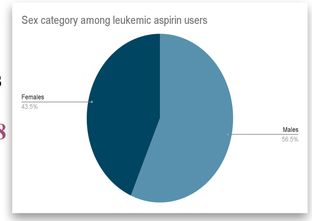
- We used ICD-10 codes to identify leukemia hospitalizations from the National Inpatient Sample (2016-2020).
- This population was stratified by aspirin use.
- Categorical variables were compared using chi-square test, and continuous variables were compared using *t*-test.
- Multivariate regression analyses compared bleeding, thrombosis, mortality, and other outcomes of leukemia in aspirin users vs non aspirin users, adjusting for demographics, various patient and hospital-level characteristics, and relevant comorbidities.

RESULTS

- Mean age among aspirin users was 74.53 years vs 64.83 years in non aspirin users.
- In leukemia hospitalizations, multivariate analysis showed that aspirin users had lower odds of deep vein thrombosis, epistaxis, hemoptysis and intracranial bleed. No statistically significant association was found for gastrointestinal bleeding.
- In leukemia, aspirin also had lower odds of in-hospital mortality, sepsis, septic shock, and a shorter length of stay by 2.8 days and lower hospital charges by $40,719.

Total leukemia hospitalizations : 1,663,149

Aspirin use: 11.2%



Impact of aspirin on leukemia patients	Adjusted Odds Ratio [OR]*	95% Confidence interval	P value
Deep vein thrombosis	0.72	0.66-0.78	<0.001
Epistaxis	0.63	0.55-0.72	<0.001
Hemoptysis	0.71	0.61-0.82	<0.001
Intracranial bleed	0.74	0.64-0.85	<0.001
In-hospital mortality	0.54	0.50-0.58	<0.001
Sepsis	0.71	0.68-0.75	<0.001
Septic shock	0.55	0.50-0.60	<0.001

*After adjusting for relevant confounders and various hospital and patient characteristics.

CONCLUSIONS

- Our study reveals enhanced outcomes for aspirin users with leukemia during hospitalization, showing reduced risks of thrombosis, along with a decrease in mortality and sepsis risk for unknown reasons.
- These findings suggest potential for future research to explore aspirin's role in thromboprophylaxis and improving outcomes in leukemia hospitalizations.

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