Increased Mortality and Length of Stay in Patients With Gastrointestinal Bleeding With Cardiovascular Disease Compared to Patients Without Cardiovascular Disease

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INTRODUCTION

- Patients with cardiovascular diseases (CVD) are commonly treated with antiplatelet or anticoagulation therapy which increases the risk of gastrointestinal bleeding (GIB).
- We compared comorbidities, in-hospital mortality rates, and LOS in patients hospitalized for gastrointestinal bleeding with known cardiovascular disease to those without cardiovascular disease.

METHODS

- This retrospective cohort study was conducted using Electronic Medical Records from 2013 to 2020. Patients admitted with gastrointestinal bleeding with established cardiovascular disease (1470) were compared to the patients without cardiovascular disease (4717).
- Baseline demographic data and outcomes were compared using Mann-Whitney U test, Chi square test and logistic regression. A p-value of < 0.05 was considered significant.

RESULTS

- Higher prevalence of aspirin use (24.1% vs. 16.2%, p< 0.001), DAPT use (1% vs. 0.4%, p=0.006), & anticoagulation (20.1% vs. 2.9%, p< 0.001) was seen in patients with gastrointestinal bleed with cardiovascular disease.
- LOS (3 vs. 2 days, p< 0.001) & in-hospital mortality (2.1% vs. 0.9%, p< 0.001) during hospitalization were significantly higher in patients with GI bleed with cardiovascular disease.

Baseline Characteristics	GIB with CVD N= 1470	GIB without CVD N= 4717	P-Value
Age (median [IQR])	78.00 [69.00, 85.00]	68.00 [55.00, 80.00]	<0.001
Race (%)			0.003
African American/Black	200 (13.6)	764 (6.2)	
Caucasian/White	1245 (84.7)	3818 (80.9)	
Other	23 (1.56)	123 (2.61)	
Sex = Male (%)	755 (51.4)	2258 (47.9)	0.021
BMI (mean (SD))	29.04 (7.61)	29.79 (65.07)	0.686
High HR (median [IQR])	99.0 [88.0, 113.0]	101.5 [90.0, 116.0]	0.001
BUN (median [IQR])	25.0 [17.0, 39.0]	20.0 [13.0, 32.0]	<0.001
Creatinine (median [IQR])	1.04 [0.80, 1.49]	0.90 [0.72, 1.19]	<0.001
Platelets (median [IQR])	236.0 [187.0, 298.0]	250.0 [198.0, 312.0]	<0.001
INR (median [IQR])	1.20 [1.10, 1.90]	1.10 [1.00, 1.20]	<0.001
Hypertension = Y (%)	9 (0.6)	0 (0.0)	<0.001
Diabetes = Y (%)	143 (9.7)	120 (2.5)	<0.001
DVT = Y (%)	73 (5.0)	92 (2.0)	<0.001
Liver Disease = Y (%)	20 (1.4)	46 (1.0)	0.267
Cancer = Y (%)	857 (58.3)	1471 (31.2)	<0.001
ASA= Y (%)	355 (24.1)	765 (16.2)	<0.001
Ticagrelor = Y (%)	7 (0.5)	9 (0.2)	0.112
ASA+ Ticagrelor = Y (%)	7 (0.5)	8 (0.2)	0.075
ASA+ Prasugrel = Y (%)	7 (0.5)	2 (0.0)	0.001
Warfarin = Y (%)	220 (15.0)	243 (5.2)	<0.001
Apixaban = Y (%)	80 (5.4)	76 (1.6)	<0.001
Dabigatran = y (%)	6 (0.4)	13 (0.3)	0.595
Long-Term Anticoagulants = Y (%)	296 (20.1)	135 (2.9)	<0.001
Long-Term Antiplatelets = Y (%)	15 (1.0)	18 (0.4)	0.006

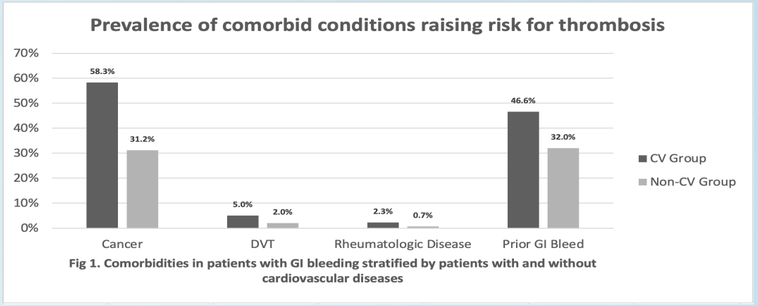

Fig 1. Comorbidities in patients with GI bleeding stratified by patients with and without cardiovascular diseases

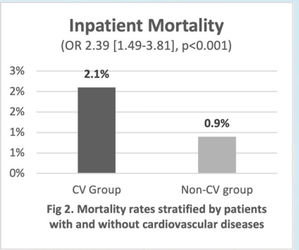

Fig 2. Mortality rates stratified by patients with and without cardiovascular diseases

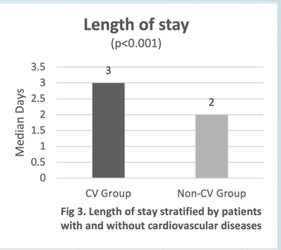

Fig 3. Length of stay stratified by patients with and without cardiovascular diseases

Outcomes	GIB with CVD	GIB without CVD	OR	P-value
LOS (median [IQR])	3.0 [2.0, 5.0]	2.0 [1.0, 4.0]		<0.001
In-hospital Mortality (%)	31 (2.1)	42 (0.9)	2.39 [1.49-3.81]	<0.001

CONCLUSION

- There was longer length of stay and a 2.4-fold greater risk of inpatient mortality in the gastrointestinal bleeding with cardiovascular disease group. GIB with CVD patients had a higher prevalence of chronic comorbidities raising risk for thrombosis and increased use of antiplatelet and anticoagulation therapy. Higher prevalence of cancer among GIB with CVD patients may be linked to poor outcomes. Further investigations is required to assess these outcomes and define patients' characteristics.

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