Outcomes in hospitalized patients with Coagulopathy (COAG) presenting with Nonvariceal Upper Gastrointestinal Bleed (NVUGIB) : NIS Study (2016 -2019)

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Introduction

Coagulopathy is a major public health issue worldwide resulting in mortality and morbidity. Primary coagulation disorders include defect in platelets or blood vessels, secondary coagulation disorders involve qualitative or quantitative defects in clotting factors or their inhibitors and acquired coagulation disorder is mainly associated with chronic diseases like liver disease, vitamin K deficiency, disseminated intravascular coagulation (DIC), and anticoagulant therapy. Limited data is available to determine the impact of coagulopathy on non-variceal upper gastrointestinal bleed.

Methods and Materials

Using National Inpatient Sample databases from 2016 to 2019, we identified patients presenting with Non variceal gastrointestinal bleed (NVUGIB), the population were then divided based on the presence and absence of coagulopathy using appropriate ICD-10-CM/PCS codes. STATA 17.0 software was used for the analysis. Pearson's Chi-Square test was used to analyze categorical variable, whereas the student t-test was used to analyze continuous variables. Univariate and multivariate logistic regression was used to adjust for potential confounders. Primary outcome was in hospital mortality due to NVUGIB in patients with coagulopathy vs without coagulopathy.

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TABLE 1: DEMOGRAPHIC CHARACTERISTICS AND OUTCOMES

	NVUGIB WITH COAG, N (%)	NVUGIB Without COAG N (%)	P value
TOTAL	120060(7.92)	1395400(92.07)	
	DEMOGRAPHICS		
MEAN AGE (YEARS)	65.55+/-15.43	68.41±15.65	<0.001
GENDER (FEMALE) (%)	52286 (43.55)	664769 (47.64)	<0.001
	COMORBIDITIES		
CHF	33917(28.25)	335,873(24.07)	<0.001
ARRYTHMIA	47784 (39.8)	436760(31.3)	<0.001
RENAL FAILURE	34361(28.62)	379130(27.17)	<0.001
CHRONIC PULMONARY DISEASE	27146(22.61)	330152(23.66)	<0.001
LIVER DISEASE	48300(40.23)	181262(12.99)	<0.001
DIABETES	37399(31.15)	454063(32.54)	<0.001
HYPERTENSION	786639(65.52)	1004130(71.96)	<0.001
OBESITY	17181(14.31)	1839147(13.18)	<0.001
HYPOTHYROIDISM	16604(13.83)	213078(15.27)	<0.001
RHEUMATOID DISEASE	4958(4.13)	50374(3.61)	<0.001
PULMONARY CIRCULATION DISORDERS	9125(7.6)	70747(5.07)	<0.001
PERIPHERAL VASCULAR DISORDERS	13651(11.37)	151261(10.84)	<0.001
	ETHNICITY		<0.001
CAUCASIAN (%)	84006(69.97)	969105(69.45)	
NON-CAUCASIAN (%)	36054(30.03)	426,295(30.55)	
	CHARLSON CO-MORBIDITY INDEX		<0.001
0-2	40.520(33.75)	736213(52.76)	
3 OR >3	79540(66.25)	659187(47.24)	
	PRIMARY OUTCOME		
	N (%)	N (%)	P value
MORTALITY (%)	7408(6.17)	27071(1.94)	<0.001
	SECONDARY OUTCOMES		
	Mean (95% CI)	Mean (95% CI)	
LENGTH OF STAY (DAYS)	5.72 (5.64-5.80)	4.14 (4.12-4.16)	<0.001
TOTAL CHARGE (US$)	20143 (19473-20542)	12390 (12302-12477)	<0.001

TABLE 2: IN PATIENT OUTCOMES IN COAG GROUP PRESENTING WITH NVUGIB

Variables	Odds ratio	95% CI	P-value
In-patient mortality	1.7	1.63-1.93	<0.001
ALL EGD	.7666	.74-.79	<0.001
EGD with intervention	.9674	0.92-1.00	0.111
IR intervention	1.26	3.7-9.8	0.007
Acute Respiratory Failure	2.06	1.91-2.23	<0.001
Hypovolemic Shock	1.96	1.82-2.12	<0.001
Requiring pressor Support	1.88	1.60-2.22	<0.001
Blood Products Transfusion	1.34	1.29 – 1.39	<0.001

Results

Amongst total of 1,515,460 patients admitted with non-variceal upper gastrointestinal bleed, 120,060 (7.92%) patients had coagulopathy disorder. Male gender and white ethnicity were predominant in both populations. There were 7,408(6.17%) and 27,017(1.94%) mortality in patients with and without coagulopathy respectively. The difference is statistically significant with OR:1.7, 95% CI: 1.63-1.93, and $p < 0.001$. Additionally, complications such as hypovolemic shock, pressor support, acute respiratory failure were higher in patients with coagulopathy. Odds of using IR intervention were higher and EGD were lower in patients with coagulopathy as shown in table 2. Mean length of stay 5.72 (5.64-5.80) vs 4.14 (4.12-4.16) {Days: p-value < 0.001} and hospitalization charges (mean US$: 20143 vs. 12390) were also higher in patients with coagulopathy.

Conclusion

Patients with coagulopathy presenting with NVUGIB were younger, had higher resource utilization, and were associated with higher in-patient mortality and complications.

References

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