Does the Early Bird Catch the Worm? Prognostic Value of Early Endoscopic Intervention In GI Bleed Patients

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LEARNING OBJECTIVES

Early endoscopic intervention (within 6 hours of admission) in patients with gastrointestinal bleeding (GIB) increases overall mortality but does not improve the mortality, length of stay (LOS), or transfusion requirement in lower GIB, while reducing the LOS in upper GIB. We aimed to study the prognosis of patients undergoing endoscopic intervention in < 1 day compared to ≥ 1 day.

METHODS

- This is a single-center retrospective cohort analysis of patients admitted to Intermediate unit and ICU with GIB as their primary diagnosis (03/2015 – 03/2021).
- Medical records of patients above 18 years of age were reviewed for baseline characteristics and lab values.
- Charlson comorbidity index (CCI), Glasgow Blatchford Score (GBS), AIMS 65, ABC, quick Sequential Organ Failure Assessment (qSOFA) scores on admission were calculated.
- Patients were compared according to time to scope i.e., < 1 day vs. ≥ 1 day.
- Outcome variables assessed included hospital LOS, 30-day mortality, and 90-day readmission rate.
- Pearson Chi-square and Mann Whitney U were applied to compare groups.
- p-value of less than 0.05 was considered significant.

Time to scope	Less than 1 day (n =16)	Equal to or greater than 1 day (n=196)	p-value
Age, mean ± SD (median, IQR)	61.19 ±13.01(57.00,52.50-74.25)	66.80±15.12 (67.50, 56.00-78.00)	ns
Gender			ns
Male	8 (50.0%)	113(57.6%)	
Female	8 (50.0%)	83(42.4%)	
Race			ns
Caucasian	10(62.4%)	126 (64.3%)	
Black	4(25.0%)	28(14.3%)	
Hispanic	1(6.3%)	27(13.7%)	
Other including data unavailable	1(6.3%)	15(7.7%)	
History of HTN	7 (43.8%)	123 (63.1%)	ns
History of DM	4 (25.0%)	49 (25.0%)	ns
History of CAD	3 (18.8%)	128 (65.3%)	ns
History of HF	1(6.2%)	52(26.5%)	ns
History of CKD	4(25.0%)	49(25.0%)	ns
History of Liver disease	5(31.3%)	33 (16.9%)	ns
History of DVT/PE	0 (0.0%)	22 (11.2%)	ns
History of atrial fibrillation	1(6.2%)	49(25.0%)	ns
Personal history of GI tract cancer	1 (6.3%)	16 (8.2%)	ns
Family history of GI tract cancer	0 (0.0%)	10 (5.3%)	ns
Use of NSAIDs	1(6.2%)	27(14.1%)	ns
Use of anticoagulants	1 (16.3%)	69 (35.6%)	0.017
Use of antiplatelets	0(0.0%)	68(35.1%)	0.004
Use of PPI at home	5(31.3%)	64(33.3%)	ns
History of smoking	7 (46.6%)	88 (46.1%)	ns
History of alcohol	9(60%)	81 (42.4%)	ns
History of drug use	0 (0.0%)	8 (4.3%)	ns
NSTEMI/STEMI	0(0.0%)	15(2.6%)	ns
AKI	3 (18.8%)	62 (31.6%)	ns
Antibiotics	6 (37.5%)	30 (15.3%)	<0.01
PRBC transfused: Median (IQR)	2(1,3)	3(2,4)	<0.01
No. of patients intubated	2(12.5%)	13(6.63%)	ns
No. of patients			ns
ICU	7(43.7%)	15(7.7%)	
IU	9(56.3%)	180(92.3%)	
Source of GI Bleed			ns
Upper	13(81.2%)	131(77.9%)	
Lower	0 (0.0%)	31(18.4%)	
Both	3 (18.8%)	6(3.6%)	
Hospital length of stay, mean ± SD (median, IQR)	5.63 ± 4.47(4.00,3.00-7.00)	6.34 ±4.20(5.00,4.00-8.00)	ns
Alive at 30 days	15 (93.7%)	174(88.8%)	ns
90-day readmission due to GI Bleed	7 (43.8%)	41 (21.4%)	0.04

Table 1: Table illustrating the comparison of baseline characteristics, medical history, end organ damage (troponin leak and AKI), management, hospital length of stay, 30-day mortality, and 90-day readmission rates, between the patients who underwent endoscopic intervention in less than one day compared to one or more day. HTN – Hypertension; DM – Diabetes mellitus; CAD – Coronary artery disease; HF – Heart Failure; CKD – Chronic Kidney Disease; DVT – Deep venous thrombosis; PE – Pulmonary embolism; AF – Atrial Fibrillation; NSAIDs – Non steroidal anti-inflammatory drugs; PPI – Proton Pump Inhibitors; AKI – Acute Kidney Injury; PRBC – Packed Red Blood Cells; ICU – Intensive care unit; IU – Intermediate unit.

RESULTS

- Out of 212 patients admitted with GIB, 196 (92.5%) underwent endoscopic intervention in ≥ 1 day and 16 (7.5%) within 1 day.
- Baseline characteristics are illustrated in Figure 1.
- Patients scoped ≥ 1 day had higher PRBCs transfused (median 3 vs. 2; p< 0.01) and less frequently received antibiotics (15.3% vs. 37.5%, p< 0.01).
- None of the scores (GBS, AIM-65, qSOFA, CCI, and ABC) were significantly different between two groups (p-value >0.05). Median (interquartile range (IQR)) of the scores according to time to scope i.e., < 1 day vs. ≥ 1 day is as follows: 14.5 (8.3,15.8) vs. 12.0 (9.0, 14.0); AIM-65: 1.0(0.0, 1.0) vs. 1.0(1.0,2.0); qSOFA: 0.5 (0.0,1.0) vs. 0.0(0.0,1.0); CCI: 4.5(1.5,6.8) vs. 5.0(3.0,6.0); ABC: 0.0(0.0,1.0) vs. 0.0(0.0,0.0).
- There was no significant difference in hospital LOS and 30-day mortality. However, 90-day readmission rate were higher in patients who underwent endoscopic intervention < 1 day (p=0.04).

TAKE HOME POINTS

Comparable risk stratification scores indirectly indicate equivalent severity of GIB between the two groups on presentation. According to our study, early endoscopic intervention does not significantly impact the LOS and 30-day mortality, but increases 90-day readmission rates. Further studies, primarily a prospective analysis, should be pursued to determine whether early endoscopic intervention should be avoided in certain scenarios.

References:
Laine, Loren MD, FACG1,2; Barkun, Alan N. MD, FACG3; Saltzman, John R. MD, FACG4; Martel, Myriam MSc2; Leontiadis, Grigorios I. MD, PhD5. ACG Clinical Guideline: Upper Gastrointestinal and Ulcer Bleeding. The American Journal of Gastroenterology: May 2021 - Volume 116 - Issue 5 - p 899-917. doi: 10.14309/ajg.0000000000001245

Strate, Lisa L MD, MPH, FACG1; Gralnek, Ian M MD, MSHS2. ACG Clinical Guideline: Management of Patients With Acute Lower Gastrointestinal Bleeding. American Journal of Gastroenterology: April 2016 - Volume 111 - Issue 4 - p 459-474. doi: 10.1038/ajg.2016.41