Early Colonoscopy is Associated with Lower Mortality in Stable Diverticular Bleeding: A National Database Study

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BACKGROUND

- Major GI societies recommend early colonoscopy (within 24 to 48 hours) for acute, high risk, lower GI bleeds, of which diverticular bleeds comprise about 20 to 40 percent
- There is paucity of evidence regarding the timing of colonoscopy for stable presumed diverticular bleeds. Majority of these patients are managed conservatively with outpatient colonoscopy at a later date

OBJECTIVES

- To compare outcomes of early colonoscopy (< 7 days) to delayed colonoscopy (> 7 days) in patients with stable diverticular bleed

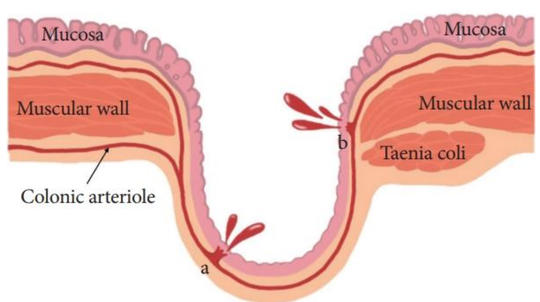
METHODS

- Study design: Retrospective case-control study
- Data source: TriNetX, LLC., a large commercial healthcare database which aggregates data from >70 healthcare organizations across the United States comprising more than 100 million patients using ICD-9/10 and CPT codes
- Cases: Adults ≥ 18 years with known diverticulosis with first ever lower GI bleed, deemed to be clinically stable, and had a colonoscopy **WITHIN 7 days** of the lower GI bleed
- Controls: Adults ≥ 18 years with known diverticulosis with first ever lower GI bleed, deemed to be clinically stable, and had a colonoscopy **AFTER 7 days** of the lower GI bleed
- Exclusions: Acute diverticulitis, esophageal varices, peptic ulcers, angiodysplasias, GI malignancies, platelet disorders, complement factor deficiencies
- Matching: Cases and Controls were propensity matched (1:1 Greedy Nearest Neighbor matching algorithm) for demographics and comorbidities
- Outcomes of interest: 1. 30-day mortality, 2. 30-day hospital readmissions, 3. Necessity for blood transfusions
- Analysis: Odds ratio (OR) and 95% confidence interval (CI) were calculated for the outcomes of interest

Table 1: Baseline characteristics of patients with stable diverticular bleed who underwent colonoscopy

	UNMATCHED COHORTS		MATCHED COHORTS	
	Colonoscopy < 7 days (N = 13,890)	Colonoscopy > 7 days (N = 103,718)	Colonoscopy < 7 days (N = 12,502)	Colonoscopy > 7 days (N = 12,502)
Age at index	63.4 +/- 15.2 years	64.2 +/- 15.9 years	63.4 +/- 15.2 years	63.4 +/- 15.3 years
White Race	8,752 (70%)	67,415 (68.7%)	8,752 (70%)	8,889 (71.1%)
Male	5,717 (45.7%)	43,326 (44.1%)	5,717 (45.7%)	5,648 (45.2%)
BMI ≧ 30	4,424 (35.4%)	29,734 (30.3%)	4,424 (35.4%)	4,090 (32.7%)
Nicotine dependence	1,536 (12.3%)	11,435 (11.7%)	1,536 (12.3%)	1,414 (11.3%)
Alcohol abuse	496 (4%)	3,196 (3.3%)	496 (4%)	391 (3.1%)
HTN	6,547 (52.4%)	50,258 (51.2%)	6,547 (52.4%)	6,611 (52.9%)
CKD	1,351 (10.8%)	11,523 (11.7%)	1,351 (10.8%)	1,272 (10.2%)
T2DM	2,579 (20.6%)	20,162 (20.5%)	2,579 (20.6%)	2,532 (20.5%)
Atherosclerosis	633 (5.1%)	5,812 (5.9%)	633 (5.1%)	544 (4.4%)
NSAID use	3,921 (31.4%)	29,896 (30.5%)	3,921 (31.4%)	4,017 (32.1%)
Anticoagulant use	2,810 (22.5%)	21,327 (21.7%)	2,810 (22.5%)	2,792 (22.3%)
Anti-platelet agent use	3,532 (28.3%)	24,942 (25.4%)	3,532 (28.3%)	3,459 (27.7%)

In patients with stable diverticular bleed, early (< 7 days) colonoscopy when compared to delayed colonoscopy (> 7 days) is associated with higher 30-day survival



RESULTS

- In the propensity matched analysis, patients in the late colonoscopy group (> 7 days) had a significantly higher risk of 30-day mortality **(HR = 1.80, 95% CI = 1.33, 2.41)**
- Controls (late colonoscopy group) had a lower risk of 30-day re-admissions **(OR = 0.88, 95% CI = 0.82, 0.95)**
- No significant differences between cases and controls with respect to need for blood transfusion **(OR = 1.0, 95% CI = 0.72, 1.40)**

LIMITATIONS

- Given reliance on ICD-9/10 and CPT codes, it is unclear if patients had a true diverticular hemorrhage
- It is unclear what interventions (surgery, IR, endoscopic interventions) were instituted, if any, in either group
- We were unable to assess rates of re-bleeding after colonoscopy

CONCLUSIONS

- Early colonoscopy within 7 days in patients with stable diverticular bleed seems to be associated with higher 30-day survival when compared to delayed colonoscopy
- Study needs to be validated using other large databases to verify this disparity in mortality. If confirmed, reasons for the differences in mortality and re-admission rates should be elucidated

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TriNetX