

Trends in upper gastrointestinal bleeding during the COVID-19 pandemic

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The COVID-19 pandemic has significantly impacted the entire world, including the United States and specifically its healthcare system. Based on recommendations from all major Gastrointestinal Societies [1], we postponed all non-urgent procedures at our institution with effect from March 16th, 2020. After postponing non-emergent procedures, we aimed to evaluate the trends of upper gastrointestinal (GI) bleeding and esophagogastroduodenoscopy (EGD) performed during the COVID-19 pandemic. We conducted a retrospective review of all patients undergoing EGDs at our institution during the study period (March 16 to April 15, 2020). In addition, we collected similar data from the preceding 2 months (January 1 to February 29, 2020) and the same time period from the preceding year (March 16 to April 15, 2019) for comparison, to account for any seasonal variation.

Prior to COVID-19, we performed an average of 398±38.3 EGDs per month, of which 23.5% (93.67±13.58) were performed on an inpatient basis. With an overall reduction in inpatient procedures of about 49.82%, the proportion of patients undergoing inpatient EGD for GI bleeding was comparatively higher (78.7% vs. 65.1%; P=0.0925), as well as the proportion of EGDs for GI bleeding performed in the intensive

care unit (ICU) (51.4% vs. 33.3%; P=0.0415) (Table 1). There was no change in the proportion of patients with GI bleeding requiring endoscopic intervention during this time period (32.4% vs. 32.2%; P=1). Despite a shift in the proportion of patients, there was no trend noted in the absolute number of inpatients with hemodynamically unstable GI bleeding, EGDs performed in the ICU or the number of inpatients undergoing EGD for variceal bleeding (Table 1).

When preparing for the COVID-19 pandemic, we expected the same baseline prevalence of emergent conditions, including acute exacerbations of chronic disease, acute infections, GI emergencies, cerebrovascular and coronary events, with the addition of the patients presenting with COVID-19. This was however refuted by studies on other acute emergencies such as myocardial infarction [2,3].

However, we found no change in the absolute number of patients with hemodynamically unstable GI bleeding, the number of EGDs performed in the ICU or the number of EGDs performed for variceal bleeding. This may in part be attributed to the more vivid presentation of overt GI bleeding, making it hard to ignore. There was, however, a significant reduction in the number of EGDs done on an inpatient basis, indicating fewer overall inpatient admissions and more stringent triage criteria for endoscopy during this COVID-19 study period. The increased proportions can be explained by a reduction in the number of non-urgent procedures.

It is imperative for gastroenterologists to be aware that GI symptoms were noted to be among the repertoire of COVID-19, especially in patients with severe disease and in the later stages of the pandemic. Further data suggest that GI bleeding was present in about 4-13.7% patients with COVID-19 [4]. Based on our data, and given that our region still has not reached its expected peak of COVID-19, we expect to see an increase

Table 1 EGD volume and indications during the study period compared to prior months

Characteristics	1/1/2020-1/31/2020	2/1/2020-2/29/2020	3/16/2020-4/15/2020	3/16/2019-4/15/2019
Total EGD volume	424	354	140	416
Inpatient	108	81	47	92
Outpatient	316	273	93	324
Characteristics of inpatient EGDs				
Age	54.6±17.6	53.7±15	53.8±15.8	57.8±14.8
Sex (female %)	42.6	42	44.7	41.3
Indications				
Non-bleeding	33	27	10	38
Bleeding	75	54	37	54
HD unstable	17	14	11	28
Variceal	13	11	9	7
Non-variceal	62	43	28	47
Location				
Endoscopy unit	83	68	28	69
ICU, reason for ICU admission	25	13	19	23
GI bleed	18	8	13	18
Variceal GIB	6	3	6	2
Non-GIB-related admission	7	5	6	5
Endoscopic therapy for GIB	20	16	12	23

EGD, esophagogastroduodenoscopy; HD, hemodynamically; ICU, intensive care unit; GI, gastrointestinal; GIB, gastrointestinal bleeding

in the number of patients with hemodynamically unstable bleeding with the surge of COVID-19.

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