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Management of gastrointestinal bleeding during COVID-19: less is more!

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Dear Editor,

Coronavirus disease-2019 (COVID-19) is a global pandemic caused by Severe Acute Respiratory Syndrome Coronavirus-2 (SARS-CoV-2). Although it is primarily a respiratory illness, gastrointestinal involvement is increasingly being observed, such as anorexia (26.6%), nausea/vomiting (7.8%), diarrhea (5–10%) and abdominal pain (3.9–6.8%) [1,2]. Despite limited evidence from literature about gastrointestinal bleed (GIB) management in COVID-19, stable patients are often managed conservatively because endoscopies are high-risk aerosol-generating procedures. Herein, we systematically reviewed published literature about the point prevalence of causes of GIB in COVID-19 patients and their outcomes.

A systematic search of PubMed, Google Scholar, Embase and Scopus databases was undertaken to extract articles relevant to GIB in COVID-19 on 13 September 2020. The search strategy was implemented using various combinations of the following search terms: “gastrointestinal bleed”, “melena”, “hematochezia,” “upper GI bleed,” “lower GI bleed,” “rectal bleeding,” “hematemesis,” “coffee-ground emesis,” “black tarry stools,” “maroon-colored stools,” “COVID-19,” “SARS-CoV-2,” “coronavirus.” Data about management and clinical outcomes such as rebleeding, mortality and length of hospital stay (LoS) was collected from available case reports, case series and observational studies and summarized using descriptive statistics.

From the initial 400 articles retrieved, 21 studies were finally included after eliminating nonrelevant articles, reviews and duplicates. There were 13 case reports, 5 case series, 2 retrospective observational studies and 1 case–control study. The total sample size consisted of 123 patients with a positive SARS-CoV-2 reverse transcriptase-PCR. The mean age was 63.1 ± 16.4 years, with the majority being males (88/123, 71.5%). Endoscopic evaluation was performed only in 40% cases (49/123), esophagogastroduodenoscopy (EGD) in 40, colonoscopy in 5 and sigmoidoscopy in 4 patients (Table 1). The most common finding on EGD was gastroduodenal ulcers (42.5%, 17/40 patients), followed by esophagitis and esophageal ulcers in 15% (6/40) of individuals. Less common findings included esophageal varices and erosive/hemorrhagic gastritis in 10% (4/40) of patients. Most patients (108/123, 87.8%) were managed conservatively with proton pump inhibitors, somatostatin analogs, vasopressin analogs, intravenous fluid resuscitation and local hemostatic agents. Endoscopic interventions were performed in 12.2% of cases (15/123). Only half (62/123) patients received packed red blood cell transfusion, with a mean number of four transfusions. The GIB-related mortality rate was 1.6% (2/123). Rebleeding occurred in 12 patients (10%). The median LoS was 8 days (interquartile range: 7–28 days).

Our study results show that less than half of the COVID-19 patients (40%) presenting with GIB underwent endoscopic evaluation. Low rates of endoscopy could be attributed to the fear of potential endoscopic transmission of SARS-CoV-2, a need for conserving personal protective equipment, or multiple GI societies’ recommendations to defer nonurgent endoscopy [3,4]. Peptic ulcer disease remains the most common finding, and mortality related to GIB in COVID-19 is low (2%), even with low rates of endoscopies during the pandemic. SARS-CoV-2 has also reported to cause acute hemorrhagic colitis; however, the exact role of the virus in causing GIB is still needed to be defined [5]. Furthermore, any case of GIB needs individualized attention, and clinical judgment should prevail, and the focus should be the patient outcome.

Acknowledgements

Conception and design: H.G. Statistical analysis: H.G. and S.S. First draft: S.S. All authors critically revised, edited and finally approved the manuscript.

Conflicts of interest

B.T. serves as a consultant for Medtronic and Boston Scientific. For the remaining authors, there are no conflicts of interest.

References

Table 1. Clinical presentation of gastrointestinal bleeding, management and outcomes of included cases

<table>
<thead>
<tr>
<th>Author</th>
<th>Country</th>
<th>Type of study</th>
<th>Clinical presentation</th>
<th>Risk factors</th>
<th>Management</th>
<th>PRBC transfusion</th>
<th>Outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lotti et al. [6]</td>
<td>Italy</td>
<td>Case report</td>
<td>62 years, male Hematochezia</td>
<td></td>
<td>Endoscopy to localize the source</td>
<td>NA</td>
<td>Resolution</td>
</tr>
<tr>
<td>Carvalho et al. [5]</td>
<td>USA</td>
<td>Case report</td>
<td>71 years, female Bloody diarrhea</td>
<td>Lisinopril leading to increased risk of severe COVID?</td>
<td>Sigmoidoscopy to localize the source</td>
<td>NA</td>
<td>Resolution</td>
</tr>
<tr>
<td>Cho et al. [7]</td>
<td>USA</td>
<td>Case series</td>
<td>Median age 68 years; 2 male Hematochezia</td>
<td>h/o anticoagulation use and aspirin (low dose) in one patient.</td>
<td>PPI, antifungals and antibiotics and colonoscopy to localize the source</td>
<td>NA</td>
<td>Spontaneous resolution</td>
</tr>
<tr>
<td>Guotao et al. [8]</td>
<td>China</td>
<td>Case report</td>
<td>83 years, male Hematochezia</td>
<td></td>
<td>Colonoscopy to reveal the source of bleeding, oral PPI tablet</td>
<td>NA</td>
<td>Resolution</td>
</tr>
<tr>
<td>Li et al. [9]</td>
<td>USA</td>
<td>Case report</td>
<td>39 years, male Hematomesia, melena, and hematochezia</td>
<td>Thrombocytopenia</td>
<td>Conservative with IV PPI and IVIG for thrombocytopenia</td>
<td>NA</td>
<td>Resolution</td>
</tr>
<tr>
<td>Gulen et al. [10]</td>
<td>Turkey</td>
<td>Case report</td>
<td>53 years, male Melena</td>
<td>h/o aspirin use, CRF</td>
<td>PPI infusion</td>
<td>3 units PRBC transfusion</td>
<td>Resolution</td>
</tr>
<tr>
<td>Li et al. [11]</td>
<td>China</td>
<td>Case report</td>
<td>77 years, male Coffee ground emesis</td>
<td></td>
<td>Mucosal protective and hemostatic agents, IV PPI, octreotide, gastroscopy to identify the source of bleeding</td>
<td>NA</td>
<td>Resolution within 48 h</td>
</tr>
<tr>
<td>Xiao et al. [12]</td>
<td>China</td>
<td>Case report</td>
<td>78 years, male Coffee ground gastric contents in the nasogastric tube and fecal occult blood test positive</td>
<td></td>
<td>To identify the source of bleeding, Octreotide, PPI</td>
<td>NA</td>
<td>Resolution</td>
</tr>
<tr>
<td>Buckholz et al. [13]</td>
<td>USA</td>
<td>Case report</td>
<td>35 years, male Melena</td>
<td>Sickle cell trait, post-renal transplantation</td>
<td>Conservative</td>
<td>3 units PRBC transfusion</td>
<td>Resolution in 4 weeks</td>
</tr>
<tr>
<td>Malik et al. [14]</td>
<td>USA</td>
<td>Case report</td>
<td>32 years, male Hematemesia</td>
<td>Varices</td>
<td>Protonix IV, Endoscopic band ligation</td>
<td>6 units PRBC transfusion and iron sucrose</td>
<td>Resolution</td>
</tr>
<tr>
<td>Chen et al. [15]</td>
<td>China</td>
<td>Case report</td>
<td>84 years, male Hematochezia</td>
<td></td>
<td>Conservative; octreotide, hemocoagulase and esomeprazole</td>
<td>6 units PRBC transfusion</td>
<td>Died due to unresolved GI bleed</td>
</tr>
<tr>
<td>Kassas et al. [16]</td>
<td>Egypt</td>
<td>Case report</td>
<td>59 years, male Hematemesia</td>
<td>HCV-related chronic liver disease</td>
<td>NA</td>
<td>resolved</td>
<td></td>
</tr>
<tr>
<td>Barrett et al. [17]</td>
<td>USA</td>
<td>Case series</td>
<td>Median age-75 years, all- male, Melena in 4, hematochezia in 2</td>
<td>Prior anticoagulation in 2 patients, h/o internal hemorrhoids and diverticulosis in one</td>
<td>Conservative management in all, diagnostic endoscopy in one</td>
<td>2 units PRBC transfusions in one patient</td>
<td>GI bleed resolved in all the patients.</td>
</tr>
<tr>
<td>Gadiparthi et al. [18]</td>
<td>USA</td>
<td>Case series</td>
<td>Median age 57 years, 1 male and 2 females; Melena in 2, rectal bleed in one</td>
<td>h/o RYGB in one, use of fecal management system in the other</td>
<td>Conservative with IV PPI</td>
<td>2 units PRBC transfusions in all 3 patients</td>
<td>GI bleed resolved in 2; 1 patient had recurrent severe bleed- ing requiring ICU admission</td>
</tr>
<tr>
<td>Cavaliere et al. [19]</td>
<td>USA</td>
<td>Case series</td>
<td>Median age 69 years; 3 males and 3 females; 4 melena, 2 hematochezia</td>
<td></td>
<td>Conservative with IV PPI</td>
<td>2 units PRBC transfusions in four patients</td>
<td>Spontaneous resolution in all patients</td>
</tr>
<tr>
<td>Mellazini et al. [20]</td>
<td>Italy</td>
<td>Case series</td>
<td>Median age 77 years, all Males. Upper GI bleeding; melena and hypotension</td>
<td>h/o anticoagulation use in all</td>
<td>All except one underwent GI endoscopy to identify the source of bleeding; therapeutic endoscopic intervention (adrenaline and clips) in one patient</td>
<td>NA</td>
<td>Resolved in all except one with reblooding who was treated arterial embolization</td>
</tr>
<tr>
<td>Aurelio et al. [21]</td>
<td>Italy</td>
<td>Retrospective observational study</td>
<td>Median age 75 years; 18 male and 15 female; Upper GI bleeding; black tarry stools in 12, hematochezia in 5, coffee ground vomiting in 3, severe progressive anemia and dark stools in 3 patients</td>
<td>7 patients on antiplatelet therapy, 18 patients on anticoagulants</td>
<td>Diagnostic EGD in 18 patients, therapeutic in 7, IV PPI therapy given to all except one who was given vasoactive agent because of suspected varices</td>
<td>4 patients</td>
<td>History of blood transfusion Resolved in all, except 3 patients who rebled</td>
</tr>
</tbody>
</table>

(Continued)
Table 1. (Continued)

<table>
<thead>
<tr>
<th>Author</th>
<th>Study Type</th>
<th>Country</th>
<th>Type of Study</th>
<th>Clinical presentation</th>
<th>Risk factors</th>
<th>Management</th>
<th>PRBC transfusion</th>
<th>EGD</th>
<th>CRF</th>
<th>Mean age</th>
<th>Median age</th>
<th>Cases</th>
<th>Sex Ratio</th>
<th>Mean PRBC transfusions</th>
<th>EGD endoscopy</th>
<th>Source of bleeding</th>
<th>Study outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Martin et al. [21]</td>
<td>Case-control study</td>
<td>USA</td>
<td>Retrospective</td>
<td>Male; female; age 60-80</td>
<td>History of variceal bleed was present in 75% patients.</td>
<td>Ultrasonic vs. EGD; EGD vs. EUS; EGD vs. CRF; CRF vs. CRF; CRF vs. CRF</td>
<td>1 unit</td>
<td>CRF, EGD, CRF, EGD</td>
<td>CRF, EGD, CRF, EGD</td>
<td>69 years</td>
<td>69 years</td>
<td>15</td>
<td>1:2</td>
<td>3 units</td>
<td>CRF, EGD</td>
<td>CRF, EGD, CRF, EGD</td>
<td>CRF, EGD, CRF</td>
</tr>
<tr>
<td>Shalimar et al. [22]</td>
<td>Case-report study</td>
<td>India</td>
<td>Retrospective</td>
<td>10 patients, male; age 60-80</td>
<td>History of variceal bleed was present in 75% patients.</td>
<td>Ultrasonic vs. EGD; EGD vs. EUS; EGD vs. CRF; CRF vs. CRF; CRF vs. CRF</td>
<td>1 unit</td>
<td>CRF, EGD, CRF, EGD</td>
<td>CRF, EGD, CRF, EGD</td>
<td>69 years</td>
<td>69 years</td>
<td>15</td>
<td>1:2</td>
<td>3 units</td>
<td>CRF, EGD</td>
<td>CRF, EGD, CRF, EGD</td>
<td>CRF, EGD, CRF</td>
</tr>
<tr>
<td>Lin et al. [24]</td>
<td>Case-report study</td>
<td>Greece</td>
<td>Case report</td>
<td>Male; age 60-80</td>
<td>History of variceal bleed was present in 75% patients.</td>
<td>Ultrasonic vs. EGD; EGD vs. EUS; EGD vs. CRF; CRF vs. CRF; CRF vs. CRF</td>
<td>1 unit</td>
<td>CRF, EGD, CRF, EGD</td>
<td>CRF, EGD, CRF, EGD</td>
<td>69 years</td>
<td>69 years</td>
<td>15</td>
<td>1:2</td>
<td>3 units</td>
<td>CRF, EGD</td>
<td>CRF, EGD, CRF, EGD</td>
<td>CRF, EGD, CRF</td>
</tr>
<tr>
<td>Papanikolaou et al. [25]</td>
<td>Case-report study</td>
<td>Greece</td>
<td>Case report</td>
<td>Male; age 60-80</td>
<td>History of variceal bleed was present in 75% patients.</td>
<td>Ultrasonic vs. EGD; EGD vs. EUS; EGD vs. CRF; CRF vs. CRF; CRF vs. CRF</td>
<td>1 unit</td>
<td>CRF, EGD, CRF, EGD</td>
<td>CRF, EGD, CRF, EGD</td>
<td>69 years</td>
<td>69 years</td>
<td>15</td>
<td>1:2</td>
<td>3 units</td>
<td>CRF, EGD</td>
<td>CRF, EGD, CRF, EGD</td>
<td>CRF, EGD, CRF</td>
</tr>
</tbody>
</table>

Dashes indicate not reported. CRF: chronic renal failure, EGD: esophagogastroduodenoscopy, GI: gastrointestinal; GIB: gastrointestinal bleed; HCV: hepatitis C virus; NA: not applicable; PPI: proton pump inhibitors; PRBC: packed red blood cell; RYGB: Roux-en-Y gastric bypass.

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Baveno-VI clinical staging of cirrhosis underestimates 5-year survival after variceal bleed in cryptogenic chronic liver disease patients in India

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To Editor,

Dear Sir,

The clinical staging in cirrhosis, proposed in the Baveno-VI consensus meeting on portal hypertension, has been globally adopted [1,2].

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