BRIEF REPORT

Short report on acute gastro-intestinal bleeding admissions during the COVID-19 pandemic

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Introduction
All healthcare services have been disrupted as a result of the COVID-19 pandemic. However, the full impact of the pandemic is as yet unknown. There is little in the literature to suggest how acute gastrointestinal bleeding (AGIB) services have been impacted, although their reliance on timely aerosol-generating procedures does create a clear theoretical barrier to maintaining service quality. It is known that nonemergency endoscopy services have been significantly adversely affected by the pandemic, and it is estimated that there is a backlog of up to half a million endoscopies.1 The true impact of the delay of these procedures will likely not be fully evident for years to come, if at all.

The Joint Advisory Group (JAG) suggested that a key performance indicator of an endoscopy units quality related to the delivery of endoscopy for AGIB within 24 h in 75% of cases.2 It is unclear whether JAG will relax this expectation in view of the recent challenges. However, it is still an important consideration as timely endoscopy is associated with improved mortality and rebleed rates.3

Methods
A retrospective review of cases of AGIB was conducted.

The North Hampshire Hospitals Trust’s endoscopy database was searched for oesophago-gastro-duodenoscopy (OGD) cases conducted between 1st January 2020 and 1st March 2021. All emergency and urgent procedures, conducted for indications related to AGIB were reviewed. These indications included anemia, abdominal pain, melena, hematemesis, varices, gastric ulcer, esophageal ulcer, bleeding via stoma, rectal bleeding bright, rectal bleeding dark, and duodenal ulcer.

Eight hundred and five endoscopies were identified with these search terms, however, 596 were excluded on case review as they were not related to AGIB. One case was excluded where there was insufficient information.

Two hundred and nine endoscopies were included. Data on each case was gathered on patient demographics, time-to-endoscopy, COVID status, endoscopic diagnosis, endoscopic management, post-endoscopy management, rebleeding rate, and mortality.

Risk scoring could not be undertaken as admission observations were not reliably available from the electronic record.

Results
Two hundred and nine endoscopies were conducted for AGIB on 176 patients, with a mean age of 67.4 (SD 16.5).

The median time-to-endoscopy was 20 h (IQR 8–39 h), this translated to 63.2% of patients having their endoscopy within 24 h.

The median time-to-endoscopy for the subgroup of COVID-positive patients (n = 6) was 17.5 h (IQR 16). A chi-squared test was used to compare the likelihood of those with COVID undergoing endoscopy <24 h, compared to those who were COVID negative/unknown, and there was no significant difference (1.080 P = 0.299).

Thirty-eight rebleeds occurred, and 37 deaths from all causes. COVID-19 positivity was associated with a significantly increased risk of death when reviewed with a chi-squared test (4.46 P = 0.035). However, COVID-19 positivity was not associated with any increased risk of rebleeding (chi-squared 0.009 P = 0.922).

Of the five patients with COVID and AGIB, two died from respiratory causes. From the three survivors, two required ICU support for a mean of 21 days, one experienced a rebleed...
requiring embolization, and one suffered a gastric perforation following endotherapy.

The number of cases of AGIB admitted mimicked a national cohort of non-COVID hospital admissions as shown in Figure 1. The month of April 2020 had the lowest number of cases at only six, a figure that is an outlier at >1.5 SDs from the mean for the study period. Reductions in the incidence of AGIB seemed to coincide with national lockdowns.

The number of cases of GIB requiring endoscopic management also varied significantly across the study period, and there was a strong relationship between the number of cases of AGIB admitted per month and the number requiring endoscopic management.

The number of cases of AGIB, and monthly median time to endoscopy, varied considerably but there was a strong correlation between the two over the 14-month study period, see Figure 2.

**Discussion**

Patients with COVID-19 and AGIB had a high risk of death (40%), even though the data would suggest this death was not from rebleeding; those that survived these concomitant conditions did so with high levels of intensive care support. Given conservatively managed cases (not having endoscopy) were not included in this study, the mortality rate of COVID-19 and AGIB might have been even higher than reported.

We showed that AGIB cases reduced significantly during the first lockdown, which suggests that patients were not willing (or perhaps able) to present to secondary care services. This pattern was replicated during lockdowns 2 and 3. The data suggest that some patients may have managed their AGIB symptoms at home, or with or without medical supervision in primary care. Our case identification process means that a greater proportion of non-endoscopically managed cases could also explain the observed phenomenon.
While it is easy to imagine how fear of nosocomial infections might dissuade many from attending with vague symptoms that could be reasonable ascribe to anxiety or nonserious causes; the symptoms of GIB are often undeniable. This is suggestive that the public experienced high levels of fear and apprehension when considering seeking healthcare support during the pandemic, or have low levels of understanding related to the seriousness of AGIB symptoms.

A review of the long-term consequences of these cases of community management is outside of the remit of this study, and such a review would be extremely challenging to perform.

This study also shows how the service managed to provide high-quality care despite the challenges of the pandemic. Using “time-to-endoscopy” as key performance indicator, our trust appears to have offered its best AGIB service during this first lockdown. This may represent reduced strain on the service but also suggests that the “normal” referral rates somehow lead to a relative delay in endoscopy. We were able to offer a comparable time-to-endoscopy to those patients who were COVID positive. The overall median time to endoscopy was comparable to the figure of 21.2 h, found by Siau et al.5 in the pre-pandemic multisite audit of 2017.

Learning from how our services have performed in this pandemic will help us prepare ourselves for future similar challenges. We must also consider how to reassure the public in such situations and remove barriers for them accessing healthcare for life-threatening emergencies.

References
1 Ho K, Banerjee A, Lawler M, Rutter M. Predicting endoscopic activity recovery in England after COVID19: a national analysis. Lancet Gastroenterol. Hepatol. 2021; 6: 381–90.
2 JAG Accreditation Programme Guide to Meeting the Quality and Safety Standards. JAG, 2017. Cited 12 September 2021. Available from URL: https://www.thejag.org.uk/CMS/uploadedDocuments/Scheme/Scheme5/Guidance/191107%20-%2020%20JAG%20quality%20and%20safety%201.0%20final.pdf
3 Laursen SB, Leontiadis GI, Stanley AJ, Møller MH, Hansen JM, Schaffalitzky de Muckadell OB. Relationship between timing of endoscopy and mortality in patients with peptic ulcer bleeding: a nationwide cohort study. Gastrointest. Endosc. 2017; 85: 936–44.
4 Bodilsen J, Neilsen P, Sagaard M, Dalager-Pedersen M, Speiser L, Yndigegn T. Hospital admission and mortality rates from non-COVID disease in Denmark during COVID-19 pandemic: nationwide population based cohort study. BMJ. 2021; 373: n113.
5 Siau K. Time to endoscopy for acute upper gastrointestinal bleeding: results from a prospective multicentre trainee-led audit. United European Gastroenterol. J. 2019. https://doi.org/10.1177/2050640618811491.