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pragmatic, which is why the decision of further assessment of SSIs was left to the decision of the local surgeon or staff.

One patient in the experimental group who died because of disease progression was not included in the analysis of Clavien-Dindo scores, as we felt that baseline disease was responsible for the outcome. Analyses were re-run including this patient and no differences were detected. Koskenvuo and Sallinen also suggested that mechanical bowel preparation might be needed to decontaminate the bowel and advocated for separate analyses for ileocolic compared to colocolonic anastomoses. The incidence of SSIs with oral antibiotic versus without was similar to that of the entire cohort: eight (6%) of 144 patients versus 18 (12%) of 149 patients in the ileocolic subgroup, and five (4%) of 123 patients versus 12 (10%) of 120 in the colocolonic subgroup.

We agree with Lambregts and de Boer that safety is of paramount importance when proposing a novel treatment strategy. A single day of oral prophylaxis did not result in any drug-associated adverse events in the ORALEV study. We acknowledge that long-term resistance might be an important concern; for this specific reason, the choice of antibiotics was made after several meetings with infectious diseases specialists. Antibiotic resistance was discussed, and the combination used was felt to be ideal after considering local factors. We would suggest that this is a desirable approach for those considering oral antibiotics in colorectal surgery.

We declare no competing interests.

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Reduced rate of hospital admissions for liver-related morbidities during the initial COVID-19 outbreak

Complications of liver cirrhosis and acute hepatitis are major causes of liver-related morbidities that require hospital admission.¹ We aimed to investigate hospital admissions for liver-related conditions during the COVID-19 outbreak in our referral hepatology and transplant centre (Abu-Ali Sina Hospital, Shiraz, Iran).

We analysed hospital admissions for liver-related morbidities between Feb 19, 2020 (the date of the first confirmed patient with COVID-19 in the country), and April 30, 2020. Retrospectively, we manually reviewed the charts of all patients admitted to our hospital, including those with liver-related conditions. For patients who had more than one complication, the most prominent complication was considered the cause of admission. Liver-related conditions were defined as: acute hepatitis requiring hospital admission; complications in liver transplant recipients; and complications of liver cirrhosis including gastrointestinal bleeding, spontaneous bacterial peritonitis, hepatorenal syndrome, hepatic encephalopathy, and diuretic resistant ascites. Rates of hospital admission during the study period were compared

with those between Feb 19, 2019, and April 30, 2019. This control period was selected to maximise similarities between the two time periods with regard to public holidays and seasonal differences fluctuations in hospital admissions. The study was approved by the institutional review board of Abu-Ali Sina Hospital.

Between Feb 19, 2020, and April, 30, 2020, 124 hospital admissions were recorded for liver-related disorders. The mean age of patients admitted to hospital during the study period was 51.3 years (SD 14.9); 68 (55%) of 124 patients were women and 56 (45%) were men. During the 2019 control period, 230 hospital admissions for liver-related disorders were recorded. The baseline characteristics of patients in the control and study periods are shown in the appendix (p 1). The mean duration of hospital stay was 7.44 days (SD 5.42) during the study period compared with 5.32 days (3.37) during the control time period ($p < 0.001$). The Model For End-Stage Liver Disease (MELD) score for patients with cirrhosis admitted during the COVID-19 outbreak was 17.07 (SD 4.05) versus 15.18 (3.45) during the control time period ($p < 0.001$). The mean rate of hospital admissions for liver-related disorders during the study period was 1.74 admissions per day (SD 0.95) compared with 3.23 admissions per day (1.33) during the control period (incidence rate ratio [IRR] 1.85, 95% CI 1.49–2.30; $p < 0.001$). The mean admission rates for gastrointestinal bleeding (IRR 2.50, 95% CI 1.34–4.64), spontaneous bacterial peritonitis (1.78, 1.02–3.13), hepatic encephalopathy (1.94, 1.12–3.38) and hepatorenal syndrome (1.95, 1.18–3.23) were significantly lower during the COVID-19 outbreak than in the corresponding control period in the previous year (appendix p 2).

Our results showed a significant decrease in the number of hospital admissions for liver-related disorders during the COVID-19 pandemic



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compared with the control period in the previous year at a large hepatobiliary referral centre. The number of admissions for each cause of liver-related complications was also reduced (appendix p 2). This decrease is probably due to the implementation of physical distancing regulations, the psychosocial effects of the COVID-19 outbreak,² and recommendations to postpone clinical visits for patients with chronic liver diseases. Liver diseases are a major cause of morbidity and account for 2 million deaths worldwide every year.^{3,4} The COVID-19 outbreak has resulted in a reduced number of hospital admissions for this group of patients. Additionally, our results suggest that MELD scores for patients with liver cirrhosis admitted to hospital and the mean duration of hospital stay were higher during the COVID-19 outbreak than the control period. This observation suggests that patients had been admitted only when it was unavoidable and usually with severe disease. Taken together, these factors might have considerable negative impact on the long-term management of patients with liver-related disorders. Hepatologists should be aware, and health-care systems should be modified and prepared to handle the future clinical challenges that might be encountered in this group of patients.

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Practice patterns of diagnostic upper gastrointestinal endoscopy during the initial COVID-19 outbreak in England

During the initial outbreak of COVID-19, concerns have been raised regarding SARS-CoV-2 aerosolisation and transmission during invasive procedures such as upper gastrointestinal endoscopy.^{1,2} In the UK, this led to the strategic pause in endoscopic services for 6 weeks at the beginning of the COVID-19 crisis for all but emergency and essential procedures nationally, as advised by the British Society of Gastroenterology.³ The lack of adherence to National Institute for Health and Care Excellence criteria for urgent direct access upper gastrointestinal endoscopy⁴ and the continued reduction in diagnostic oesophagogastroduodenoscopy across England might lead to many undiagnosed oesophageal and gastric cancers, with delay in diagnosis and stage migration, substantially affecting long-term survival in these patients.⁵ We assessed changes in diagnostic oesophagogastroduodenoscopy by hospital trusts and cancer vanguards (regional cancer partnerships), and estimated the potential number of undiagnosed cancers during a 4-month period from January to April, 2020.

Data from NHS Digital was retrieved for the number of diagnostic oesophagogastroduodenoscopies done by each hospital trust in England between Jan 1, 2020, and April 30, 2020, which was then compared with a historical cohort from these same trusts from Jan 1, 2019, to April 30, 2019. Details of data sources and methods can be found in the appendix (p 2). We calculated the percentage change in diagnostic oesophagogastroduodenoscopies in each hospital

trust associated with the COVID-19 pandemic. Data regarding the number of deaths due to COVID-19 per bed for each hospital trust over the 4-month study period were used to consider the effects of the burden of COVID-19 on the provision of oesophagogastroduodenoscopy by trust. Published data from the national oesophagogastrogastric cancer audit⁶ from 2016 to 2018 was used to estimate the number of oesophageal and gastric cancers that might not have been diagnosed during this 4-month study period as a result of changes in the number of diagnostic oesophagogastroduodenoscopies done. Trusts with incomplete data over the study period were excluded and trusts that merged during the study period were treated as merged throughout (appendix p 3).

The number of diagnostic endoscopies done between January, 2020, and April, 2020, in the 122 analysed trusts was around 28% lower than in the same period in 2019 (149 043 vs 208 212). Compared with the same period in 2019, activity was slightly lower in January, 2020 (53 909 vs 54 979; 2.0%), and February, 2020 (49 906 vs 50 572; 1.3%). Activity fell considerably in March, 2020 (37 854 vs 54 520 in March, 2019; 30.6%) and in April, 2020 (5638 vs 49 877 in April, 2019; 88.7%). In April, 2020, activity was more than 90% lower than in April, 2019, in 83 (68%) of 122 trusts and in 12 (63%) of 19 vanguards.

We found no correlation between the number of deaths due to COVID-19 per bed and the percentage change in diagnostic oesophagogastroduodenoscopies during the study period, both at the hospital trust level (Spearman $R = -0.04$; $p = 0.66$) and at the cancer vanguard level (-0.24 ; $p = 0.33$; appendix p 5).

Based on the reductions seen in diagnostic oesophagogastroduodenoscopy, the estimated number of undiagnosed oesophageal and gastric cancers across England