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### 'Scope' of acute esophageal obstruction in the era of COVID-19.

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On univariate analysis for potential baseline predictors (age, Child's score, hematemesis as initial presentation, platelet count, spleen size, portal vein diameter and HVP) only Child's score increased the risk of mortality.

This retrospective analysis of a large prospectively collected database of NCIPH patients demonstrate a good medium-term overall survival in these patients. The traditional baseline factors, including variceal bleed, that predict mortality in cirrhosis are not operative in patients with NCIPH, over a 5 year follow-up period.

The 5-year mortality risk in the cirrhosis patients studied by D'Amico *et al.* [8] (from Italy,  $n=494$ , 'cryptogenic cirrhosis': 37, 7.5%) was 18% for stage 3 and 25% for stage 4; in contrast, this was much lower in NCIPH patients in the current study (2% for stage 3 and 3.4% for stage 4 patients). Similar higher mortality rates have been reported by Gomez *et al.* [9] in hepatitis C-related cirrhosis (from Cuba,  $n=660$ , 312 weeks mortality in stage 3: 15% and stage 4: 28%) and by Nilsson *et al.* [10] in mixed etiology cirrhosis (from Sweden,  $n=1317$ , 5-year mortality in decompensated patients, i.e.  $\geq$  stage 3: 66%). In centers in India, where 'cryptogenic' chronic liver disease is a common etiology for portal hypertension and NCIPH remains its important subset [7], Baveno-VI clinical staging of 'cirrhosis' under-estimates survival over a 5-year follow-up period.

Our study is limited by retrospective nature and consequent patchy follow-up. Earlier (stages 0 and 1) and later (stages 5 and 6) stages were not adequately represented in the current study.

In conclusion, in parts of the world with increased burden of NCIPH, Baveno-VI recommendation of functional clinical staging of cirrhosis, is applicable only after liver biopsy rules out NCIPH in patients labelled as 'cryptogenic cirrhosis'.

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## Conflicts of interest

There are no conflicts of interest.

## References

- D'Amico G, Morabito A, D'Amico M, Pasta L, Malizia G, Rebora P, Valsecchi MG. Clinical states of cirrhosis and competing risks. *J Hepatol* 2018; 68:563–576.
- D'Amico G. Competing risks and prognostic stages in cirrhosis. In: de Franchis R, editor. Portal Hypertension VI. Proceedings of the Sixth Baveno consensus workshop: stratifying risk and individualizing care. New York, USA: Springer International Publishing; 2016. pp. 19–28. doi: 10.1007/978-3-319-23018-4

- Sarin SK, Kumar A, Chawla YK, Baijal SS, Dhiman RK, Jafri W, *et al.*; Members of the APASL Working Party on Portal Hypertension. Noncirrhotic portal fibrosis/idiopathic portal hypertension: APASL recommendations for diagnosis and treatment. *Hepatol Int* 2007; 1:398–413.
- Madhu K, Ramakrishna B, Zachariah U, Eapen CE, Kurian G. Non-cirrhotic intrahepatic portal hypertension. *Gut* 2008; 57:1529.
- Schouten JN, Garcia-Pagan JC, Valla DC, Janssen HL. Idiopathic non-cirrhotic portal hypertension. *Hepatology* 2011; 54:1071–1081.
- Goel A, Ramakrishna B, Zachariah U, Sajith KG, Burad DK, Kodiatte TA, *et al.* What makes non-cirrhotic portal hypertension a common disease in India? Analysis for environmental factors. *Indian J Med Res* 2019; 149:468–478.
- Goel A, Madhu K, Zachariah U, Sajith KG, Ramachandran J, Ramakrishna B, *et al.* A study of aetiology of portal hypertension in adults (including the elderly) at a tertiary centre in southern India. *Indian J Med Res* 2013; 137:922–927.
- D'Amico G, Pasta L, Morabito A, D'Amico M, Caltagirone M, Malizia G, *et al.* Competing risks and prognostic stages of cirrhosis: a 25-year inception cohort study of 494 patients. *Aliment Pharmacol Ther* 2014; 39:1180–1193.
- Gomez EV, Bertot LC, Rodriguez YS, Gonzalez AT, Perez YM, Garcia AY. The natural history of HCV-related cirrhosis and its temporal progression across the different clinical stages. *Hepatol Int* 2014; 8:527–539.
- Nilsson E, Anderson H, Sargenti K, Lindgren S, Prytz H. Clinical course and mortality by etiology of liver cirrhosis in Sweden: a population based, long-term follow-up study of 1317 patients. *Aliment Pharmacol Ther* 2019; 49:1421–1430.

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## 'Scope' of acute esophageal obstruction in the era of COVID-19

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The coronavirus disease-2019 (COVID-19) caused by the novel SARS-CoV-2 led to significant strain on the emergency department (ED) visits worldwide. Multiple stay-at-home orders were issued during the pandemic unless medical treatment was urgently needed [1]. Acute esophageal obstruction (AEO) due to food/foreign body impaction usually present to the ED, given its severe symptoms. Most esophageal foreign bodies pass through the gastrointestinal (GI) tract uneventfully, and related mortality is very low. Still, most of these patients receive endoscopic interventions (up to 76%) [2]. The number of nonurgent endoscopies plummeted sharply during the pandemic to reduce

**Table 1.** Baseline characteristics, laboratory findings and clinical outcomes of the patients with acute esophageal obstruction (AEO) ingestion during the COVID-19 pandemic (2020) when compared with pre-COVID time (2019)<sup>a</sup>

	Before propensity score matching		After propensity score matching		P value
	AEO 2020 N = 5890 (%)	AEO 2019 N = 23 478 (%)	AEO 2020 N = 5886 (%)	AEO 2019 N = 5886 (%)	
<b>Demographics</b>	Mean + SD or n (%)	Mean + SD or n (%)	Mean + SD or n (%)	Mean + SD or n (%)	P value
Age (years)	59.42 (19.26)	60.28 (19.23)	59.42 (19.26)	59.92 (19.34)	0.162
Women	2483 (42.16)	9869 (42.04)	2482 (42.17)	2475 (42.05)	0.896
Race					
White	1264 (21.46)	4943 (21.05)	1262 (21.44)	1266 (21.51)	0.928
Black or African American	107 (1.82)	425 (1.81)	107 (1.82)	90 (1.53)	0.222
<b>Comorbid conditions</b>					
Essential (primary) hypertension	3195 (54.24)	12 823 (54.62)	3193 (54.25)	3194 (54.26)	0.985
Diabetes mellitus	1322 (22.45)	5353 (22.8)	1321 (22.44)	1304 (22.15)	0.707
Chronic lower respiratory diseases	974 (16.54)	3834 (16.33)	972 (16.51)	970 (16.48)	0.960
Chronic kidney disease (CKD)	739 (12.55)	2895 (12.33)	737 (12.52)	730 (12.4)	0.845
Overweight and obesity	1340 (22.75)	4959 (21.12)	1337 (22.72)	1351 (22.95)	0.759
Ischemic Heart Disease	1300 (22.07)	5124 (21.83)	1300 (22.09)	1302 (22.12)	0.965
Alcohol-related disorders	465 (7.9)	1659 (7.07)	463 (7.87)	462 (7.85)	0.973
Eosinophilic esophagitis	270 (4.58)	885 (3.77)	267 (4.54)	259 (4.4)	0.721
Gastrointestinal hemorrhage	244 (4.14)	1032 (4.4)	244 (4.15)	278 (4.72)	0.128
Psychotic disorders	245 (4.16)	921 (3.92)	244 (4.15)	232 (3.94)	0.574
<b>Clinical presentation</b>					
Nausea and Vomiting	1370 (23.26)	5220 (22.23)	1367 (23.23)	1338 (22.73)	0.525
Abdominal pain	2249 (38.18)	8413 (35.83)	2245 (38.14)	2118 (35.98)	0.015
<b>Medications</b>					
Antiemetics	1294 (21.97)	4550 (19.38)	1292 (21.95)	1122 (19.06)	0.000
Omeprazole	1164 (19.76)	4492 (19.13)	1160 (19.71)	1151 (19.56)	0.835
Pantoprazole	848 (14.4)	3010 (12.82)	847 (14.39)	762 (12.95)	0.023
H2 blockers	420 (7.13)	1382 (5.89)	419 (7.12)	350 (5.95)	0.010
<b>Laboratory findings after COVID-19 diagnosis</b>					
Hemoglobin (g/dL)	13.57 (1.99)	13.17 (1.91)	13.48 (1.96)	13.46 (1.74)	0.837
Platelets (10 <sup>9</sup> /L)	263.53 (74.96)	239.97 (76.9)	265.02 (79.27)	243.88 (78.77)	<0.001
Creatinine (mg/dL)	0.99 (0.52)	1.68 (8.51)	0.99 (0.52)	1.53 (6.94)	0.226
Urea nitrogen (mmol/L)	16.9 (8.27)	16.87 (8.48)	16.88 (8.28)	16.33 (8.22)	0.486
Chloride (mEq/L)	103.24 (3.38)	103.27 (3.6)	103.3 (3.27)	103.11 (3.71)	0.550
Bicarbonate (mEq/L)	26.44 (3.07)	26.5 (3.25)	26.44 (3.08)	26.52 (3.11)	0.786
Potassium (mEq/L)	4.32 (0.43)	4.32 (0.45)	4.32 (0.43)	4.33 (0.56)	0.842
Sodium (mEq/L)	140.02 (2.92)	139.93 (2.97)	140.06 (2.86)	140.04 (2.79)	0.941
Leukocytes (1000/uL)	7.31 (2.45)	7.89 (9.59)	7.33 (2.44)	7.66 (7.24)	0.558
Hb A1C	6.57 (1.94)	6.57 (1.9)	6.57 (1.94)	6.57 (1.82)	0.991
Lymphocytes (1000/uL)	25.07 (10.7)	25.66 (10.58)	25.23 (10.56)	25.24 (10.68)	0.994
Neutrophils	1328.73 (2261.27)	1080.92 (2029.11)	1328.73 (2261.27)	1234.17 (2131.54)	0.715
Ferritin (ng/mL)	195.35 (268.81)	107.49 (149.07)	195.35 (268.81)	94.01 (99.9)	0.082
<b>Outcomes</b>					
Mortality	52 (0.88)	845 (3.60)	52 (0.88)	229 (3.89)	0.23 (0.17, 0.31); <0.001
EGD	991 (16.83)	6475 (27.58)	991 (16.84)	1583 (26.89)	0.63 (0.58, 0.67); <0.001
Esophageal perforation	13 (0.22)	74 (0.32)	13 (0.22)	15 (0.25)	0.87 (0.41, 1.82); 0.71

<sup>a</sup>Propensity score matching was done based on the following variables: age, sex, race, hypertension, diabetes mellitus, chronic lower respiratory disease, chronic kidney disease (CKD), obesity, ischemic heart disease, alcohol-related disorders, eosinophilic esophagitis, gastrointestinal hemorrhage and psychotic disorders.

exposure and preserve personal protective equipment. It is unclear if ED visits for AEO and their endoscopic management changed due to the COVID-19 pandemic in the USA.

We utilized a federated cloud-based network database named TriNetX, which provides access to electronic medical records from 92 healthcare organizations from the USA. The AEO adult patients hospitalized from 1 January 2020 to 1 December 2020, were compared to a similar timeline in 2019 from TriNetX. We used ICD-10 codes for food/foreign body in esophagus, causing other injury acute food impaction (T18.128 A, T18.12), foreign body esophagus (T18.198, T18.1, T18.19, T18.108, T18.108A). Outcomes of the study included utilization rates of esophagogastroduodenoscopy (EGD), esophageal perforation, inpatient hospitalization and mortality. The outcomes were measured before and after 1:1 propensity matching of the groups based on the baseline demographics and comorbidities.

Prevalence of AEO among all ED visits in 2020 was 0.12% (5890 AEO ED visits among 4 672 024 total visits), compared to 0.17% (23 478 AEO ED visits among 14 199 648 total visits) in 2019. There was a small but significant decrease (0.05%) in AEO ED visits from pre-pandemic compared to pandemic times ( $P < 0.01$ ). Patients with AEO had a higher prevalence of eosinophilic esophagitis (mean 270 [4.6%] vs. 885 [3.8%],  $P = 0.004$ ) and alcohol-related disorders (mean 465 [7.9%] vs. 1659 [7.1%],  $P = 0.03$ ) in 2020 group vs. 2019 group. Patients in the 2020 group had a lower EGD utilization (RR 0.63, 95% CI, 0.58–0.67,  $P < 0.001$ ) but esophageal perforation (RR 0.87, 95% CI, 0.41–1.82) and inpatient hospitalization rates (RR 0.92, 95% CI, 0.79–1.05) did not differ between two groups. Interestingly, during the pandemic, the AEO patients had a lower mortality rate (RR 0.23, 95% CI, 0.17–0.31,  $P < 0.001$ ) than in 2019 (Table 1).

With the advent of COVID-19, multiple stay-at-home orders were issued in the USA, with widespread healthcare services and utilization disruption. Patients have

expressed concerns about visiting healthcare facilities due to the potential of the spread of SARS-CoV-2 [3]. Many GI societies also recommended deferring elective procedures. This was due to a concern for potential transmission of the virus from aerosolization of GI secretions and judicious use of PPE, which resulted in an overall reduction in the number of endoscopies during the pandemic [4].

Our study shows a small reduction (0.05%) of AEO ED visits in 2020 compared to 2019. However, EGD utilization plummeted to 63% for AEO in 2020. If this is due to spontaneous resolution of the food impaction or reduced presentations to the ED needs to be studied prospectively.

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H.G. and A.P. helped with conception and design; A.P. and M.G. helped with statistical analysis; A.P. wrote the first draft; all the authors critically revised, edited and finally approved the manuscript.

### Conflicts of interest

N.S. serves as a consultant for Steris Medical, Boston Scientific and Medtronic. For the remaining authors, there are no conflicts of interest.

### References

- 1 Perisetti A, Goyal H, Sharma N. Gastrointestinal endoscopy in the era of COVID-19. *Front Med (Lausanne)* 2020; 7:587602.
- 2 Ikenberry SO, Jue TL, Anderson MA, Appalaneni V, Banerjee S, Ben-Menachem V, et al. Management of ingested foreign bodies and food impactions. *Gastrointest Endosc* 2011; 73:1085–1089.
- 3 Goyal H, Gajendran M, Boregowda U, Perisetti A, Aziz M, Bansal P, et al. Current and future implications of COVID-19 on gastroenterology training and clinical practice. *Int J Clin Pract* 2020; 74:e13717.
- 4 Perisetti A, Gajendran M, Boregowda U, Bansal P, Goyal H. COVID-19 and gastrointestinal endoscopies: current insights and emergent strategies. *Dig Endosc* 2020; 32:715–722.

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