Contributions: P.A-P performed data collection, R.M. supervised the data collection and analysis, A.W and H.B performed the literature search and prepared the manuscript. All authors reviewed and edited and approved the final correspondence.

Performed at: Heartlands Hospital (University Hospitals Birmingham NHS Foundation, UK)

Funding: No funding was received for this work

Conflict of interest statement: The authors disclose that they have no conflicts of interest

Acknowledgements: The authors thank Bethany Jones for data collection

Keywords: Chronic obstructive pulmonary disease/COPD, Non-invasive ventilation, Quality improvement.

REFERENCES

1. Plant P, Owen J, Elliott M. Early use of non-invasive ventilation for acute exacerbations of chronic obstructive pulmonary disease on general respiratory wards: a multicentre randomised controlled trial. The Lancet. 2000;355(9219):1931-3.

2. Roberts CM, Stone RA, Buckingham RJ, Pursey NA, Lowe D. Acidosis, non-invasive ventilation and mortality in hospitalised COPD exacerbations. Thorax. 2011;66(1):43-8.

3. Davies M, Allen M, Bentley A, Bourke SC, Creagh-Brown B, D’Oliveiro R, et al. British Thoracic Society Quality Standards for acute non-invasive ventilation in adults. BMJ open respiratory research. 2018;5(1).

4. The British Thoracic Society. 2018. BTS Quality Standards for acute NIV in adults. https://www.brit-thoracic.org.uk/document-library/quality-standards/niv/bts-quality-standards-for-acute-niv-in-adults/. [Accessed November 11 2020].

5. Boryslawskyj H, Rauf F, Beauchamp B, Oakes A, Santana-Vaz N, Chakraborty B, et al. P297 Effect Of Bts-recommended Medical Leadership On The “door-to-mask” Time Of Acute Non-invasive Ventilation (niv) Set Ups. Thorax. 2014;69(Suppl 2):A204-A5.

6. British Thoracic Society. 2019. BTS National Audit Report: Adult NIV Audit 2019: 1 February – 31 March 2019. https://www.brit-thoracic.org.uk/document-library/quality-improvement/audit-reports/adult-niv-audit-report-2019/ [Accessed November 8 2020].

7. Antoine-Pitterson P, Robinson A, Jones B, Shanmugarajah A, Thomas M, Al Helou A, et al. Improving response times for acute non-invasive ventilation(NIV) set-ups. European Respiratory Journal. 2020;56(suppl 64):3429.

8. NICE. 2018. Nice guideline: Internal guideline development and monthly NIV training sessions improve acute NIV service quality.

UNUSUAL CASES OF ACUTE PANCREATITIS IN PATIENTS WITH COVID-19

Editor,

COVID-19 commonly presents as cough, shortness of breath, and fever, but extrapulmonary manifestations are being reported in recent times. This is consistent with the fact that the ACE2 receptors through which the coronavirus SARS-CoV-2 enters cells are present in many organs beside the lung. Gastrointestinal involvement in COVID-19 has become more common with many patients presenting with pain abdomen, diarrhoea, nausea and vomiting. Here we outline 2 cases of COVID-19 associated acute pancreatitis.

A 33 year-old male diagnosed with COVID-19 presented with loose non foul-smelling and non blood-tinged stools, vomiting and pain abdomen. The patient had stable vitals and denied consumption of alcohol over the last 4 months. The epigastric and left hypochondriac region were tender on palpation. Lab investigations revealed grossly elevated serum lipase (5257 IU/L) and amylase (3269 IU/L). CT scan of the abdomen and pelvis revealed peripancreatic fat stranding in the head, body and part of the tail of the pancreas suggestive of acute oedematous pancreatitis. Minimal peripancreatic fluid was also seen extending to the anterior peripancreatic fascia (Figure 1). A diagnosis of acute pancreatitis secondary to COVID-19 infection was made. The patient was given IV fluids, broad spectrum IV antibiotics, analgesics and other supportive treatment. A CT guided fluid aspiration was done for the peripancreatic fluid which was sterile. Patient recovered completely following treatment and was discharged.

In another instance, 76-year-old woman tested positive for COVID-19 after developing low grade intermittent fever over 10 days. Over the course of her home isolation, she developed generalised weakness and myalgia, productive cough MMRC grade 3 breathlessness. She did not consume alcohol.

Respiratory rate was 32 cpm and on auscultation bilateral crepitations were heard in the infrascapular areas. A high resolution CT scan of the chest showed features suggestive of COVID-19 pneumonia with a CT score of 17 out of 25. Two days after admission, she started developing pain in the epigastric and left hypochondriac area which was tender on palpation and was associated with nausea and vomiting. Repeat investigations revealed grossly elevated amylase (1955 IU/L) and lipase (4895 IU/L). Abdominal ultrasound detected the presence of minimal ascites, prominent pancreatic duct and fluid collection near the tail of the pancreas. Here we outline 2 cases of COVID-19 associated acute pancreatitis.

In another instance, 76-year-old woman tested positive for COVID-19 after developing low grade intermittent fever over 10 days. Over the course of her home isolation, she developed generalised weakness and myalgia, productive cough MMRC grade 3 breathlessness. She did not consume alcohol.

Respiratory rate was 32 cpm and on auscultation bilateral crepitations were heard in the infrascapular areas. A high resolution CT scan of the chest showed features suggestive of COVID-19 pneumonia with a CT score of 17 out of 25. Two days after admission, she started developing pain in the epigastric and left hypochondriac area which was tender on palpation and was associated with nausea and vomiting. Repeat investigations revealed grossly elevated amylase (1955 IU/L) and lipase (4895 IU/L). Abdominal ultrasound detected the presence of minimal ascites, prominent pancreatic duct and fluid collection near the tail of the pancreas. Here we outline 2 cases of COVID-19 associated acute pancreatitis.
pancreas. NECT of abdomen revealed a bulky pancreas, with inflammatory fat stranding present at the tail end of the pancreas and some enlarged peripancreatic lymph nodes present near the pancreatic tail (Figure 2). The patient was given IV fluids, broad spectrum IV antibiotics, analgesics and other supportive treatment. Despite resolution of the pancreatitis with treatment, the patient developed worsening lung complications and succumbed to the disease.

COVID-19 infection has been linked to pancreatitis in the absence of traditional risk factors like alcohol consumption or gallstones, as in the case of our patients, both of whom had neither a significant history of alcohol consumption or any evidence of gallstones on imaging. Other causes of pancreatitis include trauma and steroid use, and a history of neither was present in our patients. Both patients had no history of pain or swelling in the parotid region- which would rule out mumps as a potential cause of pancreatitis. Furthermore, neither patient had a history of scorpion stings, which is a rare cause of cause pancreatitis. In both patients serum calcium and triglycerides were within normal limits. Considering all the above, a diagnosis of COVID-19 related pancreatitis was made. As more cases of acute pancreatitis in patients with COVID-19 are being reported, it becomes pertinent to screen patients with COVID-19 presenting with gastrointestinal complaints for pancreatitis with serum amylase, lipase and abdominal CT scan.

REFERENCES:
1. Gupta A, Madhavan MV, Sehgal K, Nair N, Mahajan S, Sehrawat TS, et al. Extrapulmonary manifestations of COVID 19. Nat Med. 2020;26(7):1017-32.
2. de-Madaria E, Capurso G. COVID-19 and acute pancreatitis: examining the causality. Nat Rev Gastroenterol Hepatol. 2021;18(1):3-4.
3. Song Y, Liu P, Shi XL, Chu YL, Zhang J, Xia J, et al. SARS-CoV-2 induced diarrhoea as onset symptom of patient with COVID-19. Gut. 2020;69(6):1143-4.
4. Lakshmanan S, Malik A. Acute pancreatitis in Mild COVID-19 infection. Case Reports. Cereus. 2020;12(8): e9886. doi: 10.7759/cureus.9886