



## Acute Pancreatitis is a Presenting Feature of COVID-19

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### Abstract

A 63-year-old lady presented to the emergency department complaining of severe abdominal pain, fever with loss of taste and smell of one-week duration. She had history of a right-sided nephrectomy. Laboratory and radiological investigations confirmed the diagnosis of acute pancreatitis with COVID-19. The management was conservative and the patient discharged after 16 days of hospital admission. We reporting, acute pancreatitis is the presenting feature however in previous reports of COVID-19, it may be a complication. Therefore, clinicians should be aware of gastrointestinal symptoms in the current pandemic.

### Case Presentation

A 63-year-old female patient presented to the emergency department at Mediclinic Parkview Hospital, Dubai, United Arab Emirates, with history of moderate to severe central abdominal pain without radiation of seven days' duration. She had episodes of fever, chills, nausea with loss of taste and smell. She lives with her husband had tested positive PCR COVID-19 nasal swab. She had neither respiratory nor urinary symptoms. The patient's background was healthy and had a good lifestyle, although had history of right nephrectomy during childhood due to a severe pyelonephritis infection. There was no history of taking any drug or any other significant medical illness.

On the day of admission, her Temp was 36.9°C, pulse rate 98 beats per min and regular, blood pressure 145/80 mmHg, respiratory rate 18 breaths per min and oxygen saturation 97% on room air despite having bilateral basal crepitations. Abdominal pain was central, 7 out of 10 in severity with localized tenderness. Acute pancreatitis confirmed according to Atlanta criteria of abdominal pain and significant high levels of serum amylase 209 U/L (25 to 125) and lipase 528 U/L (8.0 to 78) however, CT scan of the abdomen was normal. Chest X-ray and HRCT chest confirmed mild to moderate COVID-19 pneumonia (Figure 1) and nasal PCR swab was positive of the same. US of the liver and biliary tree demonstrated normal liver texture and gall bladder was stones free and without biliary tract dilatation. Inflammatory markers CRP and ferritin in addition to LDH and D-dimers were elevated. LFTs were slightly deranged of hepatitis picture rather than obstructive. The plasma and capillary blood glucose records were within normal values. Other viral hepatitis (B, C and CMV) were non-reactive and collagen vascular screen was negative. Normal renal function and electrolytes mainly calcium throughout her admission as well as triglyceride (Table 1). Acute coronary syndrome was excluded by normal troponin and a sinus rhythm ECG without ischemic changes. Normal urine exam aborted UTI.

The patient was kept nothing per oral and on intravenous fluids, analgesics, antibiotics, and antiemetic. However, the patient improved gradually on the following days with less abdominal pain but started to develop respiratory symptoms that required oxygen, up to 4 liters per minute. She was on anticoagulation but was not on steroids because of acute pancreatitis. Blood tests continued to be the same (lipase and amylase) despite her being asymptomatic, back on oral feeding and discharged home.

### Discussion

Acute Pancreatitis (AP) alone can lead to mortality and may be one of the reasons for exaggerated immune response developing in the progression of COVID-19. The presence of pancreatic damage triggered by this virus can deteriorate the clinical condition of patients and the mortality rate may increase in these patients [1]. The distant organ or system dysfunction may resolve or may progress to organ failure. Thus, there is a wide spectrum of disease from mild (80%), where patients recover within a few days, to severe (20%) with prolonged hospital stay, the need for critical care support, and a 15% to 20% risk of death [2].

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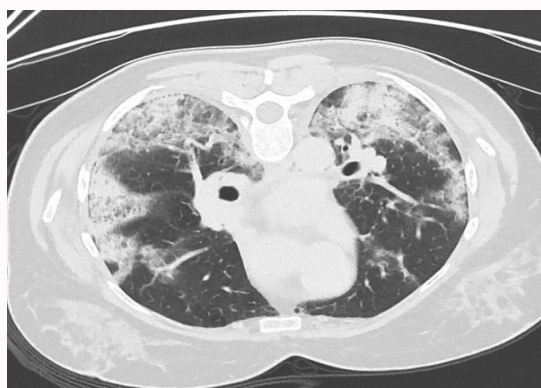
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**Table 1:** Lab tests of the patient during admission.

Variable	Reference range	Day 1	Day 8	Day 16
Lipase (U/L)	8-78	283.8	990	528
Amylase (U/L)	25-125	148	258	209.29
Triglycerides (mmol/L)	0.1-2.2	1.56	-	-
Alanine aminotransferase (U/L)	0-55	194	47	116
Aspartate aminotransferase (U/L)	5-34	139	31	87
Alkaline phosphatase (U/L)	40-150	50	52	60
Total bilirubin (umol/L)	3.4-20.5	8.3	9.1	8
Calcium (mmol/L)	2.2-2.5	2.17	1.96	2.52
C-reactive protein (mg/L)	0-5	118	101.4	4.9
White blood count ( $\times 10^9/L$ )	04-11	4.8	5.4	5.3
Hemoglobin (g/dL)	11.5-16	12.2	10.6	13.2
Hematocrit (%)	36-46	36.5	31.2	39.4
Platelets ( $\times 10^9/L$ )	150-450	244	466	388
Ferritin (ng/mL)	15-120	1122	452.79	468.86
Creatinine (umol/L)	50.4-98.1	68.4	59.7	96.7
Blood urea nitrogen (mmol/L)	3.5-7.2	3.1	2.1	5.9
Sodium (mmol/L)	136-145	137	139	137
Potassium (mmol/L)	3.5-5.1	3.9	4.3	4.8



**Figure 1:** Axial view of high resolution computed tomography images of the chest showing bilateral, mainly peripheral ground glass opacities due to COVID-19 pneumonia.

COVID-19 typically presents with pulmonary symptoms such as cough, shortness of breath and fever. However, gastrointestinal manifestations of COVID-19 are increasingly being recognized

and have drawn a significant attention [3]. A comprehensive study conducted in Hubei, China, evaluated 204 patients who tested positive for COVID-19, of whom 50.5% reported some gastrointestinal disturbance such as diarrhea, anorexia, vomiting, or abdominal pain. A rare group of patients presented with gastrointestinal symptoms only without any respiratory symptoms [4]. However, our patient developed respiratory symptoms a few days after admission.

In our patient, other causes of AP; biliary disease, excessive alcoholism, invasive procedures and trauma were excluded. Pancreatic enzymes, were persistently elevated despite she was asymptomatic and back on a regular oral diet. This finding may be of no clinical significance in such patients with absence of symptoms and normal CT scan of the pancreas. CRP, hemoconcentration and procalcitonin determine the severity of AP [5] but these were not helpful in the presence of COVID-19 pneumonia.

The patient responded to conservative management of AP and was on oxygen therapy with anticoagulation for the chest symptoms and steroids avoided in the presence of pancreatic inflammation.

The management and the outcome of these patients with COVID-19 is challenging in the presence of other comorbidities, elderly and severe cases. Therefore, clinicians involved in the management of patients with COVID-19 should be aware of acute pancreatitis as a presenting feature of this pandemic.

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