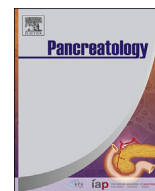




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## Letter to the editor in response to COVID-19 presenting as acute pancreatitis



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We read with great interest the case report by [1] describing development of acute pancreatitis in an obese female patient with COVID 19 infection. The diagnosis of acute pancreatitis was based on modified Atlanta criteria [2] which requires presence of two of the following three features: (1) abdominal pain consistent with acute pancreatitis (acute onset of a persistent, severe, epigastric pain often radiating to the back); (2) serum lipase activity (or amylase activity) at least three times greater than the upper limit of normal; and (3) characteristic findings of acute pancreatitis on contrast-enhanced computed tomography (CECT) and less commonly magnetic resonance imaging (MRI) or *trans*-abdominal ultrasonography. This patient fulfilled two criteria i.e. pain consistent with acute pancreatitis and pancreatic enzyme elevation greater than three times upper limit of normal. The patient was diagnosed with severe pancreatitis as she had features of acute respiratory distress syndrome which classifies as persistent organ (respiratory) failure according to modified Atlanta criteria.

However, this report raises certain issues worth discussing. **Firstly**, the abdominal imaging done in form of CT scan was reported normal for pancreas. Surprisingly this patient developed ARDS with reported normal pancreatic imaging is not tenable. The timing of performance of CT scan of abdomen is also not available as it is well known that abdominal CT scan done early in the course (<72 hrs) may not show findings of acute pancreatitis. Usually, a repeat abdominal imaging is performed at a later period in disease course to find features of pancreatitis; but such information is unavailable in the reported case. **Secondly**, diagnosis of severe pancreatitis was based on development of ARDS classifying as organ failure. Oddly, in this patient the respiratory symptoms preceded the epigastric pain by 6 days and the patient had hypoxemia and CT chest findings of multifocal bilateral ground-glass opacities (consistent with severe COVID 19 infection). The attribution of respiratory failure solely to pancreatic injury without considering the confounding contribution by COVID 19 merits a review. **Thirdly**, elevation of pancreatic enzymes without clinical evidence of pancreatitis has also been reported in literature in patients of COVID 19 infection. A retrospective cohort study by McNabb-Baltar et al. [3] in 71 patients hospitalized for COVID-19 found that, only 9 (12.1%) had hyperlipasemia (defined in this study

as an elevated lipase level above the upper limit of normal (>60 U/L)), with two cases (2.8%) having greater than 3 fold elevation but without imaging evidence of acute pancreatitis. Two additional patients with hyperlipasemia (62 U/L and 136 U/L) who underwent abdominal CT imaging had mild fat stranding around the pancreas and gallbladder (but did not meet radiologic criteria for pancreatitis) and a normal examination, respectively. **Fourthly**, lipase elevation may not be specific for pancreatic pathology. Recently, Jin et al. [4] reported that of patients with greater than three-fold elevation of lipase levels, 48% were due to non-pancreatic aetiologies (including gastritis/gastro paresis in 12% and enteritis/colitis in 18%). The reported patient had history of diarrhoea on presentation which could have possibly contributed to the enzyme elevation. **Fifthly**, patients of COVID 19 infection can present with gastrointestinal manifestation including, diarrhoea, nausea, vomiting and pain abdomen. In a recent meta-analysis by Mao et al. [5], from 35 studies, including 6686 patients with COVID-19 the pooled prevalence of digestive symptoms was 15% and abdominal pain was seen in 3% patients. **Sixthly**, an effort for finding other possible aetiologies could have been made by evaluation with ultrasonography (for gallstones, as the radiolucent stones are not usually seen on CT examination), MRCP (for pancreas divisum and gallstones), parathyroid hormone levels (for hyperparathyroidism) before presuming the odd presentation of acute pancreatitis as a causative effect rather than an association with COVID 19 infection.

We believe that clinical presentation of COVID 19 infection and acute pancreatitis overlap with pain abdomen, respiratory involvement and pancreatic enzyme elevation. And a diligent effort should be made to discern between association or causation between COVID-19 infection and diagnoses of acute pancreatitis. Great care needs to be taken to establish a diagnose of acute pancreatitis consequent to COVID 19 infection, in this group of patients.

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### Declaration of competing interest

None of the authors have any conflicts to declare.

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