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A CASE REPORT ON COVID-19 IN A LIVER DISEASE PATIENT

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ABSTRACT

COVID-19 infection caused by acute respiratory syndrome-corona virus 2 (SARS-CoV-2) was firstly detected in China, in December 2019. We present a case of COVID-19 with an underlying liver disease, who came to hospital with the complaints of fever and dyspnea. By assessing the blood investigations, imaging results and real time reverse transcription-polymerase chain reaction (RTPCR), he was diagnosed with COVID-19 -pneumonia- category C with a CT severity (CTSI) of 23/25. Primary treatment was given at the emergency department and after stabilizing, the patient was admitted in the intensive care unit (ICU) for further treatment.

KEYWORDS: SARS-CoV-2, CTSI, ICU.

INTRODUCTION

COVID-19 is an infection caused by the severe acute respiratory syndrome-corona virus 2 (SARS-CoV-2) that was firstly detected in Wuhan, China, in December 2019.[1] A study by The Chinese Centre for Disease Control and Prevention revealed that 80% of patients develop mild signs and symptoms requiring no hospital admission, but 15% of patients develop moderate symptoms such as pneumonia and respiratory dysfunction requiring hospital admission.[2] Apart from respiratory symptoms, such as fever, dry cough, and dyspnea, COVID-19 patients also developed different degrees of liver injury.[3] A concern has been raised by the pandemic that the patients with liver cirrhosis might be more susceptible to COVID-19 infection due to their systemic immunocompromised status.[4,5] As the cases were rapidly increasing, the healthcare workers showed more attention to COVID-19 patients with concomitant liver injury.[3] The infection risk or the risk of a severe course of COVID-19 may vary based on the nature of the chronic liver disease (CLD) and the presence or absence of advanced fibrosis or cirrhosis.[6] Even if COVID-19 constitutes a high risk of liver injury in some studies, mechanisms of liver dysfunction during SARS-CoV-2 infection are still unclear.[7]

CASE REPORT

A fifty three year old male patient with known complaints of CLD, portal hypertension, hepatitis B and diabetes mellitus, was admitted to the general medicine department of a tertiary care hospital due to fever and dyspnea. COVID-19 detection by RTPCR was done on the same day that showed a positive result.

On examination, the patient was conscious and oriented with a GCS of E4M6V5. He had tachypnea with a respiratory rate of 30 breaths/min and SPO2 90%. Imaging results indicated that the patient developed pneumonia. On initial blood investigations, his inflammatory markers were elevated with reduced lymphocytes, Ferritin of 488ng/ml, D- dimer 12.7µg/ml and thrombocytopenia was noted. The patient was diagnosed with COVID-19- pneumonia- category C with a CTSI of 23/25.

Primary treatment was given at the emergency department and after stabilizing, the patient was admitted in the ICU for further treatment. He was given oxygen therapy via NIV followed by NRBM. He was started on IV ceftriaxone 1gm BD, azithromycin, bronchodilators, steroids, LMWH, liver protectives and other supportive measures. Patient was RTPCR negative on the 15th day. Repeat HRCT thorax was taken that showed a CTSI of 14/25. USG abdomen showed umbilical hernia, chronic liver parenchymal disease, splenomegaly and moderate ascites. Patient was given gastroenterology consultation in view of abdominal distension where ascites fluid tapping done on therapeutic basis. Chest x-ray was repeated which showed improvement; inflammatory markers showed no worsening, patient symptomatically and hemodynamically better, hence discharged.

DISCUSSION

The wide spread of corona virus lead to the infection of many patients with underlying chronic liver diseases.[8] The occurrence of liver injury in severe course of COVID- 19 is higher than that with mild disease. Liver injury may be caused by different mechanisms, like direct viral infection, immune injury, drug- induced liver injury, systemic inflammatory response, ischemia and hypoxia, and recurrence or exacerbation of the underlying liver disease.[9] Although some studies have been conducted to detect those infected with COVID-19 having previous liver disease, the true prevalence remains unknown.[5] Our patient was a 53 year old male patient.

In a COVID- 19 patient with liver injury, abnormal liver test indicators, such as increased alanine transaminase (ALT), aspartate transaminase (AST), and total bilirubin (TBIL) levels and decreased albumin (ALB) levels will be evident.[7-10] Also, increased C-reactive protein (CRP) levels and reduced lymphocyte count were independent risk factors of a fatal prognosis in COVID-19 with liver injury.[7] Our patient showed an increased AST, ALT, TBIL, CRP and a reduced albumin and lymphocyte levels.

Increment of inflammatory markers, liver injury, and coagulation disorders were more frequent in critical patients than mild, moderate and severe patients on hospital admission.[7] Our patient classified under severe category and showed an increased risk of bleeding during the treatment course hence novel oral anticoagulants (NOACs) were withdrawn.

A COVID-19 patient with previous comorbidity represents a considerable risk of morbidity and mortality.[5] Special attention must be given to provide the screening and treatment of individuals with CLD (HCC, viral hepatitis, NAFLD/NASH, and ALD). Patients with CLD, particularly those with cirrhosis or advanced liver injury, should be prioritized for SARS-CoV-2 vaccination.[11]

CONCLUSION

COVID-19 patients with underlying liver disease have a higher probability of developing severe disease course. Healthcare workers should pay a close attention to detect complications of COVID-19 such as a secondary infection. Timely detection, good clinical assessment and appropriate care and treatment can save lives even in complicated COVID-19 cases.

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