



Case Report: Management and Outcomes of COVID-19 in a Patient with Cirrhosis of Liver

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Author's contribution

The sole author designed, analyzed, interpreted and prepared the manuscript.

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Case Study

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ABSTRACT

Introduction: The outbreak of coronavirus disease 2019 (COVID-19) has recently become a major problem affecting thousands of individuals around the world. It is understood that a significant proportion of patients infected with COVID-19 have disturbed liver function tests. This is a case report of a patient with liver cirrhosis and COVID-19.

Presenting Complaints and Investigations: A 39 year old female patient was admitted in AVBRH on 06/02/2021 with chief complaint of distension of abdomen, breathlessness, shortness of breath, reduced urine output over last 3 months. She had skin lesions over the hand, foot, abdomen and back with itching since 4 months. Physical examination, blood investigations and abdominal ultrasound showed cirrhosis of liver with gross ascites seen clinically. She had mild splenomegaly and gall bladder was enlarged. Laboratory tests showed elevated total bilirubin level. In peripheral blood examination, RBC count was low (3.66m/cu mm), Haemoglobin level was 8.2 gm/dl, Platelets count was low (1.19 lakh per cu. mm). WBC count was 3600 cu mm. Doctor diagnosed this as the case of cirrhosis of liver with pemphigus vulgaris with COVID-19.

Past History: 6 months ago, patient was admitted in Aarogyadham hospital Yawatmal with chief complaint of abdominal pain, loss of appetites, fever. On ultrasonography, she had splenomegaly for which she took the treatment.

The Main Diagnosis, Therapeutic Intervention and Outcomes: This case was diagnosed as a case of COVID-19 with Cirrhosis of liver. Interferon alpha 2b solution was given for 10 days to help improve the immunity. Tab. Ursoldiolis (ursodeoxycholic acid) was used to dissolve gallstones.

Conclusion: Good clinical assessment, appropriate care, good nursing care by trained nurses and appropriate treatment can save lives even in complicated COVID-19 infected cases.

Keywords: COVID-19; cirrhosis; liver; splenomegaly; pemphigus.

1. INTRODUCTION AND BACKGROUND

Coronavirus disease 2019 (COVID-19), with the number of confirmed cases and deaths increasing regular, had become a major concern for global public health. The pandemic has raised fears that patients with liver cirrhosis may be more vulnerable to serious acute corona virus 2 respiratory syndrome (SARS- CoV-2) [1] infection due to their systemic immune-compromised status. On the contrary, according to the available data, immune-suppression may even provide some protection against hyper activated immune response. Published data suggest that a substantial proportion of patients infected with COVID-19 have abnormal liver function tests. However, mechanisms of liver injury induced by COVID-19 and clinical consequences of these alterations remain unclear. Recently, a COVID-19 and liver disease registry was launched never the less; there is still scarcity of data on how COVID-19 affects patients with pre-existing liver disease [2].

2. PATIENT INFORMATION

Patient was admitted in Acharya Vinoba Bhave Rural Hospital with the complaints of distension of abdomen, abdominal pain, fever, breathlessness, shortness of breath, reduced urine output last 3 months. She also had skin lesions over the hand, foot, abdomen and back with itching since 4 months.

Primary concern and symptoms: Distension of abdomen, abdominal pain, fever, breathlessness, shortness of breath, reduced urine output fever and skin lesions over the hand, foot, abdomen and back with itching since 4 months.

Medical family and psychosocial history: Patient had medical history of cirrhosis of liver before 6 month and history of splenomegaly with pemphigus vulgaris. She took treatment for that but was not cured .She belongs to nuclear family. There are five members in her family. All family members are healthy except the patient. Patient looked anxious, depressed and confused.

Relevant past intervention with outcome: History of cirrhosis of liver with pemphigus vulgaris 6 month back for which she was hospitalized for 20 days. After ultrasonography,

splenomegaly was observed. She took treatment for that and outcome was not good.

2.1 Physical Examination and Clinical Findings

General examination: Patient was unhealthy, had thin body built, had distension of abdomen. Hygiene was not maintained. Height of patient was 152 cm and weight was 45kg. Her vital parameters were normal.

Timeline: 6 months ago she was admitted in the hospital for 20 days for the treatment of cirrhosis of liver and pemphigus vulgaris. Currently she was admitted for the treatment of COVID-19 and cirrhosis of liver and pemphigus vulgaris. Interferon alpha 2b solution was given for 10 days to enhance immune function. Beta-blocker was given for 7 days in twice a day, Inj. Albumin 20% IV was given once a day for 7 days. Syp. Duphalac 15ml tds . Proteinex powder as supplementary. Abdominal tapping was done for ascites. Spo2 monitoring was done. Inj. Remdesivir IV was given BD to treat coronavirus infection. Lotion for skin lesions L/A Momate-T cream L/A Vaseline gauze were given for pemphigus vulgaris.

Diagnostic assessment: After physical examination and investigation, abdominal ultrasound showed cirrhosis of liver with gross ascites. Mild splenomegaly, gall bladder thickness was noted. Laboratory tests confirmed elevated total bilirubin level. In peripheral blood examination, RBC count was low (3.66m/cu mm), Haemoglobin level was 8.2 gm/dl, Platelets count was low (1.19 lakh per cu. mm). WBC count was 3600 cu mm. Doctor diagnosed this as the case of cirrhosis of liver with pemphigus vulgaris with COVID-19.

Prognosis: Was Good.

Therapeutic intervention: Medical management was provided to the patient. Interferon alpha 2b solution was given for 10 days to enhance immune function. Beta-blocker was given For 7 days in twice a day, Inj. albumin 20% IV was given in once a day for 7 days. Syp. Duphalac 15ml TDS. Proteinex powder was given for protein supplementation. Treatment for pemphigus vulgaris included oral corticosteroids, tab. Prednisone in BD. Immunoglobulin Tab. Ritagut 550mg was given in BD. She took all

treatment and outcome was good. Her signs and symptoms were reduced, she resumed her routine activities. No any change in therapeutic intervention was reported.

Follow-up and Outcomes: Patient condition was improved. Patient reported reduced breathlessness and ascites. Doctor advised follow up after 1 month and advised ultrasonography(USG), blood investigations and blood pressure examination to know the further disease progression.

Intervention adherence and tolerability: Patient took all prescribed medications regularly. But sometimes, she refused to take medication. She also followed the dietician advice. Dietician had advised her salt restriction and high protein diet. Her intervention adherence was satisfactory. No adverse or unanticipated events were reported.

3. DISCUSSION

This was the first case of COVID-19 pneumonia with cirrhosis of liver reported in this region. The patient was diagnosed with COVID-19 and had varying degrees of signs of liver damage. Recent studies have shown that patients with COVID-19 and elevation of AST or ALT have worst outcomes [3].

Given that cirrhosis is one of the leading causes of death and worldwide pandemic of SARS-CoV-2 infection affected the clinical course in all hospital settings, this case seemed critical. As per the study of Qiu H et. al., the clinical characteristics of three COVID-19 patients with pre-existing decompensated cirrhosis were recorded for the first time. Two Child-Pugh C-class disease patients died, while the Child-Pugh Class B patient did not. In addition, the patient with the highest MELD scores survived, while the patient with the lowest MELD scores survived. This raises the likelihood that clinical decomposition events in patients with COVID-19 and pre-existing cirrhosis could be more significant in predicting outcomes [4,5]. Related studies on cirrhosis of liver were reported by Bawankule et. al. [6] and Kirnake et al. [7]. Studies on special precautions and preparations of hospitals for COVID-19 pandemic have been reported [8-11]. Articles on special reflections about different critical situations and infection control during COVID-19 pandemic were reviewed [12-14]. Patel et. al. reported on Interleukin-6 as predictor of 'non-alcoholic fatty

liver disease' among 'insulin resistance syndrome' patients [15-20].

4. CONCLUSION

Good clinical assessment, appropriate care, good nursing care by trained nurses and appropriate treatment can save lives even in complicated COVID-19 infected cases.

DISCLAIMER

The products used for this research are commonly and predominantly use products in our area of research and country. There is absolutely no conflict of interest between the authors and producers of the products because we do not intend to use these products as an avenue for any litigation but for the advancement of knowledge. Also, the research was not funded by the producing company rather it was funded by personal efforts of the authors.

CONSENT AND ETHICAL APPROVAL

As per international standard or university standard guideline Patient's consent and ethical approval has been collected and preserved by the authors.

COMPETING INTERESTS

Author has declared that no competing interests exist.

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