

Covid-19 Anicteric Hepatitis, A Case Series.

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Abstract

Introduction:

Severe acute respiratory syndrome virus also known as SARS CoV-2 is a novel developed RNA virus of beta group Coronavirus, which has created a Pandemic affecting millions of people worldwide since December 2019. The prevalence of Acute hepatitis in Covid-19 patients on initial presentation is still indeterminate. However, to the best of our knowledge very few Covid-19 Hepatitis cases are reported and we have reported a case series of 10 nos. of COVID-19 confirmed patients with anicteric Hepatitis.

Methods:

We undertook a retrospective study of 10 Covid positive cases in the age group between 18 to 60 years admitted to our Covid Centers between 1st July to 15th Aug 2020. Required investigations including X-ray chest and ECG of these patients were analysed closely. Patients with pre-existing liver disease, primary biliary cirrhosis, alcoholic hepatitis, non alcoholic fatty hepatitis and auto immune hepatitis were excluded from the study.

Procedures:

Medical reports from Covid Centers were collected and were used for data collection and analysis by trained medical personnel in a sequential manner. All relevant data was recorded and after complete analysis these patients were selected for the present study.

Results:

Demographic profile and epidemiological characteristics of all the patients were recorded. Clinical features, laboratory parameters and treatment modalities of all the patients were recorded and analysed closely.

Conclusion:

From this case series we conclude that COVID-19 Hepatitis is not uncommon in patients infected with SARS CoV-2 and it can be used as an assessment tool in suspected patients to assess the confirmation rate of patients prior to confirmation with RT-PCR in resource constraint areas as abnormal LFT is detected prior to appearance of symptoms. As all the cases we detected were anicteric, it may be difficult to assess clinically and early blood investigations are advised for confirmation. We recommend further studies for the confirmation of our findings and as it is

the very first case series of COVID-19 anicteric hepatitis reported it may help as a guiding torch for future references.

Keywords: COVID-19, anicteric hepatitis, SARS CoV-2, RT-PCR

Introduction:

Severe acute respiratory syndrome virus also known as SARS CoV-2 is a novel developed RNA virus of beta group Coronavirus, which has created a Pandemic affecting millions of people worldwide since December 2019. By September 2020 more than 27 million people are affected throughout the globe in more than 200 countries and death toll surpassed over 8 lacs ^[1].

The Overall case fatality rate was reported to be 2.3% according to a report from the Chinese Centre for disease control and prevention ^[2]. The clinical characteristics, pathogenesis, progression of the disease and other relevant factors are already reported and are updated in several studies ^[3,4,5]. Up to 50% of patients with COVID-19 may experience hepatic manifestations ranging from “asymptomatic abnormalities in hepatic biochemical tests to the rare case of acute liver failure.”^[6] The prevalence of Acute hepatitis in Covid-19 patients on initial presentation is still indeterminate. However, to the best of our knowledge very few Covid-19 Hepatitis cases are reported and we have reported a case series of 10 nos. of COVID-19 confirmed patients with anicteric Hepatitis.

Methods:

We undertook a retrospective study of 10 Covid positive cases in the age group between 18 to 60 years admitted to our Covid Centers between 1st July to 15th Aug 2020. COVID-19 cases were diagnosed based on RT-PCR test result according to criterion of the WHO’s interim guidance ^[7]. All the patients were tested for complete blood count, coagulation function, renal function test, liver function test, ESR, CRP, CXR PA view and ECG on arrival. Patients with HbSAg, Hepatitis C virus and HIV tests negative were enrolled for the study. Patients with pre-existing liver disease, primary biliary cirrhosis, alcoholic hepatitis, non alcoholic fatty hepatitis and auto immune hepatitis were excluded from the study.

Procedures:

Medical reports from Covid Centers were collected and were used for data collection and analysis by trained medical personnel in a sequential manner. Required information like demographic profile, epidemiological data, clinical features, mode of treatment etc. were extracted from the medical records, compiled to a computerized data base for analysis. Each and every patient’s case sheet as well as data was analyzed individually to present the correct evaluation for the study. All relevant data was recorded and after complete analysis these patients were selected for the present study.

Results:

All the patients were between age group of 22 to 54 years, out of which 9 were males and only one was female. No one was having any past history of alcohol intake, chronic liver disease or

past history of icterus. Out of 10 patients, two were having hypertension and one patient was having Type two Diabetes.

Demographic and epidemiological characteristics of all the enrolled patients are presented in the Table-1.

Table-1: Demographic and epidemiological characteristics

Characteristics	Patient									
	1	2	3	4	5	6	7	8	9	10
Age (Yrs)	29	36	51	54	35	53	52	22	40	47
Sex	M	M	M	M	F	M	M	M	M	M
BMI (Kg/m ²)	28	29	24	31	23	24	30			
History of Alcohol	No	No	No	No	No	No	No	No	No	No
Chronic liver disease	No	No	No	No	No	No	No	No	No	No
Past history of Icterus	No	No	No	No	No	No	No	No	No	No
Icterus during admission	No	No	No	No	No	No	No	No	No	No
Co-morbidities	No	No	HTN	No	No	HTN	T2DM	No	No	No

Clinical features of all the patients during admission to our centers are shown in Table 2. Six patients were having fever which was low grade and not associated with chills and rigor. Six patients were having cough which was dry and chesty. Two patients were having shortness of breath along with fever and cough.

Table-2: Clinical Features

Patients symptoms	1	2	3	4	5	6	7	8	9	10
Fever	Yes	No	No	Yes	No	Yes	Yes	Yes	No	Yes
Cough	Yes	No	Yes	Yes	No	Yes	Yes	No	No	Yes
SOB	No	No	No	Yes	No	Yes	No	No	No	No
Others	No	Headache	No	No	No	No	No	No	Headache	No

Laboratory investigations of all the patients including chest X-ray PA view and ECG were obtained within one hour of arrival to the Covid centers, enlisted in Table 3. 5 patients were having elevated ESR and 3 patients were positive for CRP (> 10mg/dl). One patient was having very high blood glucose levels which was corrected with insulin administration. Total and direct bilirubin of all the patients were elevated as shown in Table 3. 4 patients were having mildly elevated levels of AST (>40 U/L) and ALT (>40 U/L). Two patients were having positive chest X-ray findings relevant to Covid-19.

Table-3: Laboratory Findings:

Patients	1	2	3	4	5	6	7	8	9	10
WBC (10 ⁹ /L)	4.8	7	7.4	5.9	12.5	8.5	7.7	5.1	5.7	6
Lymphocytes (10 ⁹ /L)	1.4	1.7	2.3	0.9	2.2	0.7	1.8	2.2	1.7	1.4
Platelets (10 ⁹ /L)	118	225	155	194	104	165	452	89	160	163
ESR (mm1 st hr)	33	43	10	112	90	127	150	10	17	96
CRP (mg/dl)	0.1	0.4	0.1	17.3	14.7	12.8	3.8	0.1	0.1	0.4
RBS (mg/dl)	196.7	117.9	124.6	532.7	108.9	149	272	72	118	94.4
ALT (U/L)	43.2	90.6	29.9	44.1	28.4	67.5		32.3	88.1	39.3
AST (U/L)	39.1	120.6	24.6	51.7	30	42.6		28.6	46.3	33.6
Total Bilirubin (mg/dl)	2.2	10	2.2	2	1.8	2.8	8.8	6.2	2.1	3.3
Direct Bilirubin (mg/dl)	0.8	3.8	1.4	0.8	0.6	1.2	5.6	1.2	0.9	1.2
HbsAg	- ve	-ve	-ve	-ve	-ve	-ve	-ve	-ve	-ve	-ve
HCV	-ve	-ve	-ve	-ve	-ve	-ve	-ve	-ve	-ve	-ve
CXR	N	N	N	P	N	P	N	N	N	N
ECG	N	N	N	N	N	N	N	N	N	N

Two patients with positive X-ray features and with clinical features of shortness of breath were managed with Oxygen therapy through mask, empirical antibiotics, corticosteroids and low-molecular weight heparin (LMWH) as per management protocol. None of the patients received mechanical ventilation, antiviral therapy or plasma therapy. Average stay of the patients in the hospital was between 6 days to 16 days. All the patients were asymptomatic and clinically recovered completely during discharge and none of them developed any severe complication or liver failure during the course of management.

Table-4: Treatment modalities provided to the patients.

Treatment given	Patient									
	1	2	3	4	5	6	7	8	9	10
O ₂ Therapy	N	N	N	Y	N	Y	N	N	N	N
Antiviral Therapy	N	N	N	N	N	N	N	N	N	N
Antibiotic Therapy	Y	N	Y	Y	N	Y	N	N	N	N
Corticosteroid	N	N	N	Y	N	N	N	N	N	N
LMWH Therapy	N	N	N	Y	N	Y	N	N	N	N
Plasma Therapy	N	N	N	N	N	N	N	N	N	N
Days of Hospitalization	8	7	16	10	7	14	8	6	9	8
Condition at Discharge	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good

Discussion:

Liver damage in patients with coronavirus infections might be directly caused by the viral infection of liver cells. Approximately 2–10% of patients with COVID-19 present with diarrhoea, and SARS-CoV-2 RNA has been detected in stool and blood samples.^[8] Immune-mediated inflammation, such as cytokine storm and pneumonia-associated hypoxia, might also contribute to liver injury or even develop into liver failure in patients with COVID-19 who are critically ill.^[9]

The first case of COVID-19 infection with acute nonicteric hepatitis before the development of fever and respiratory symptoms was reported by Praneet et al.^[10] We observed 10 cases of COVID-19 hepatitis on admission to our centers out of 100 total patients admitted between the specified time duration. All the patients were anicteric as examined and reported by their clinical examination during the whole course of their stay in our centers. The total and direct bilirubin levels were elevated in all the patients but AST and ALT values were either normal or mildly elevated. The presentation was self-limiting and a gradual decline in serum bilirubin values were observed in due course of management. As all the patients presented with elevated serum bilirubin values on admission the hepatitis might have been developed prior to their symptoms as was reported by Praneet et al.^[10]

We have several limitations to this study. First, our study was limited to a small sample size of only ten patients hence the findings need to be confirmed by studies with larger number of samples. It was not possible to get detail investigation reports of the patients prior to admission or before confirmation of COVID-19. As a resource constraint remote location of our district we could not perform the GGT, HbaAg and HbeAg tests.

Conclusion:

From this case series we conclude that COVID-19 Hepatitis is not uncommon in patients infected with SARS CoV-2 and it can be used as an assessment tool in suspected patients to assess the confirmation rate of patients prior to confirmation with RT-PCR in resource constraint areas as abnormal LFT is detected prior to appearance of symptoms. Mostly it's self limiting and does not require any specific management and with regression of COVID-19 a gradual decline in the serum bilirubin values are observed. As all the cases we detected were anicteric, it may be difficult to assess clinically and early blood investigations are advised for confirmation. We recommend further studies for the confirmation of our findings and as it is the very first case series of COVID-19 anicteric hepatitis reported it may help as a guiding torch for future references.

Conflicts of interest:

None.

Funding resource:

None.

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