International Journal Dental and Medical Sciences Research
Volume 3, Issue 2,Mar-Apr 2021 pp 253-261 www.ijdmsrjournal.com ISSN: 2582-6018

# A Study on the Clinical Profile and Hepatitis B and C Viral Markers in Decompensated Cirrhosis

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Submitted: 01-03-2021 Revised: 09-03-2021 Accepted: 12-03-2021

**ABSTRACT:**BACKGROUND :Hepatitis B and Hepatitis C virus are endemic in India and have an aetiological role in acute hepatitis, 50-70% of which end up with chronic liver disease. Hepatitis B is responsible for approximately 300 million cases of chronic liver disease worldwide and is the leading cause of chronic hepatitis, cirrhosis and hepatocellular carcinoma worldwide. Hepatitis C is the major cause of transfusion transmitted non-A and non-B hepatitis and continues to be a major cause of liver disease throughout the world. As there are limited number of studies regarding this, the present study is undertaken.

**METHODS:**One hundred patients with liver disease attending outpatient department and admitted as inpatients at Dr. RML Hospital, New Delhi between January 2020to December 2020were taken for the study.

**RESULTS:** One hundred patients with liver disease were studied. Majority of patients were in mean age group of 41-60 years. Male to female ratio was 4:1. Majority of patients presented with abdominal distension, anorexia and jaundice. All the 100 patients had abnormal liver function test. 30% patients had viral markers in the form of HBsAg in 26% and anti HCV in 4%cases.

**CONCLUSION:** Hepatitis B and C are the major causes of chronic liver disease.

**KEY WORDS:** Hepatitis B; Hepatitis C; Acute hepatitis; Chronic hepatitis; Cirrhosis; Hepatocellular carcinoma

## I. INTRODUCTION

Decompensate cirrhosis is defined as an acute deterioration in liver function in a patient with cirrhosis and characterized by jaundice, ascites, hepatic encephalopathy, hepatorenal syndrome or variceal haemorrhage. Common precipitants of hepactic decopensation include infections, gastrointestinal (GI) bleeding, high alcohol intake/alcohol-related hepatitis or drug induced liver injury although no specific cause is found in approximately 50% of cases. It is important to try to determine the underlying case of hepatic decompensation through a careful history, examination and investigations so appropriate treatment can be given.

The dominant primary disease of liver are viral hepatitis, alcoholic liver disease and hepatocellular carcinoma.

Infectious disorders of liver dominate the clinical practice of hepatology. Hepatology experienced an extraordinary boost when major viruses that affect the liver were identified.

Hepatitis virus A-G have been identified and studied as etiological agents for various liver disorders.

Hepatitis B and C virus are the major cause of CHRONIC LIVER DISEASE inIndia.

Hepatitis B is a common disease world wide with an estimated global prevalence of over 350 million or approximately 5% of world's population.[1,2,3,4,6]Also 2/3rd of all cases of hepato cellular carcinoma is caused by hepatitis B virus.[1,2,3,4,7,8]Total hepatitis B virus occurrence in India is around3-4%.[9,10]

The WHO places HBV in the top 10 causes of death world wide.[11]Chronic hepatitis B constitutes more than 50% of chronic hepatitis cases.

In this context of large population and absence of a national immunisation programme would mean a projected increasing burden of infection and liver disease due to HBV in India in the years to come. In this perspective, the HBV epidemiology in India becomes relevant not only nationally but also internationally, because of the possibility of India becoming THE LARGEST HBV infection pool in the world.[9,12,13]

WHO estimates that 3% of world

International Journal Dental and Medical Sciences Research
Volume 3, Issue 2,Mar-Apr 2021 pp 253-261 www.ijdmsrjournal.com ISSN: 2582-6018

population is infected with HCV and around 170 million individuals are chronic carriers at risk of developing liver cirrhosis and hepatocellular carcinoma.

Patients with dual HBV and HCV infection may also have higher rate of hepato cellular carcinoma than patients infected with either virusalone.[6,17]

It is a paradox that such an important organ has little capacity to repair itself once it is damaged beyond a critical level. Damaged liver not only affects normal functioning of liver but also, will lead to derangement of function of other organs.

To cap it all there are no satisfactory specific treatment for LIVER DISEASE. Hence PREVENTION IS MORE IMPORTANT and more relevant. Early diagnosis may contribute to prevention of complications.

This study is undertaken in view of the common prevalence, huge magnitude, seriousness of the problem and not many studies are available in India and particularly from NorthIndia.

## II. METHODOLOGY

**SOURCE OF DATA**

Patients fulfilling the inclusion and exclusion criteria attending either outpatient department or inpatients ofAtal Bihari Vajpayee Institute of Medical Sciences (ABVIMS) and Dr. Ram Manohar Lohia Hospital, New Delhi between January 2020 to December 2020.

**METHOD OF COLLECTION OF DATA**

**Sample size**: 100 cases

**Sampling method**: Simple random sampling

**INCLUSION CRITERIA**

(i) Clinical features suggestive ofhepatitis
(ii) LFT detected acute and chronic liverdisease.
(iii) Clinically suspected Hepatocellularcarcinoma.

**EXCLUSION CRITERIA**

(i) Malaria
(ii) Leptospirosis
(iii) Dengue
(iv) Drug inducedhepatitis
(v) Auto immunehepatitis
(vi) Toxins
(vii) Haemolyticanemia
(viii) Infiltrative disorders

Data will be collected in a pre-tested proforma to fulfill the needs of the study. Detailed history, physical examination and necessary investigations are recorded. Purpose of the study will be carefully explained to patients and consent will be taken. Institutional Ethical Committee Clearance will be taken.

**INVESTIGATIONS**

Haemoglobin, Totalcount, Differential count, ESR, Random bloodsugar, Bloodurea, Serumcreatinine, Urine analysis, USGabdomen, Liver functiontest, HBsAg, AntiHCV, Liver biopsy whenindicated,Reticulocytecount, Prothrombintime

## III. OBSERVATION AND RESULTS

One hundred patients with Decompensated cirrhosis disease between January 2020 to December 2020 attending outpatient clinic and admitted as inpatients inAtal Bihari Vajpayee Institute of Medical Sciences (ABVIMS) and Dr. Ram Manohar Lohia Hospital, New Delhi, were enrolled into the study.

**Age incidence**

| Age group (years) | Acute hepatitis | | Chronic hepatitis | | Cirrhosis | | Hepato cellular carcinoma | |
|---|---|---|---|---|---|---|---|---|
| | No. | % | No. | % | No. | % | No. | % |
| 14-30 | 7 | 41.2 | 1 | 25 | 6 | 8 | 1 | 25 |
| 31-40 | 3 | 17.6 | 1 | 25 | 6 | 8 | 0 | 0 |
| 41-50 | 7 | 41.2 | 1 | 25 | 25 | 33.3 | 1 | 25 |
| 51-60 | 0 | 0 | 0 | 0 | 28 | 37.4 | 2 | 50 |
| > 60 | 0 | 0 | 1 | 25 | 10 | 13.3 | 0 | 0 |
| Total | 17 | 100 | 4 | 100 | 75 | 100 | 4 | 100 |

17 patients had acute hepatitis, 4 patients had chronic hepatitis, 75 patients had cirrhosis and 4 patients had hepatocellular carcinoma.

Age group ranges from 21 years to 85 years. Maximum age was 85 years and minimum was 21 years. Majority of patients with acute hepatitis were in the age group of < 30 (41.2%) and between 41 and 50 years(41.2%).

Patients with chronic hepatitis were in all age groups without any clustering.

Majority of patients with cirrhosis were in the age group of 41-60 years (70.6%).

Majority of patients with HCC were > 40 years (75%). Mean age in acute hepatitis 35.4%, chronic

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hepatitis 44.7%, cirrhosis 51.2% and hepatocellular carcinoma 47.5%,respectively.

**Sex distribution**

| Diagnosis | Sex | Age group (years) | | | | | Total |
|---|---|---|---|---|---|---|---|
| | | < 30 | 31-40 | 41-50 | 51-60 | > 60 | |
| Acute hepatitis | Male | 6 | 3 | 5 | - | - | 14 |
| | Female | 1 | - | 2 | - | - | 3 |
| Chronic hepatitis | Male | - | 1 | 1 | 1 | - | 3 |
| | Female | 1 | - | - | - | - | 1 |
| Cirrhosis | Male | 6 | 3 | 20 | 25 | 6 | 60 |
| | Female | - | 3 | 5 | 3 | 4 | 15 |
| HCC | Male | 1 | - | 1 | 1 | - | 3 |
| | Female | - | - | - | 1 | - | 1 |

In acute hepatitis – number of males – 14, Females – 3
Male:Female::4.6:1
Chronic hepatitis – number of males – 3, Females – 1
Male:Female::3:1
Cirrhosis: Number of males –60, Number of females – 15
Male:Female::4:1
Hepatocellular carcinoma: Number of males – 3, Females – 1
Male:Female::3:1
Among males 75% were in the age group of 41-60 years. Among females 53.3% were in the age group of 41-60 years.

**Occupational distribution**
Majority of male patients were farmers (63%) and majority of female patients were housewives (100%).

**Presenting symptoms**

| Diagnosis | Anorexia | Nausea | Vomiting | Jaundice | Fever | Pain abdomen | Abdominal distension | Altered behaviour | GI bleed | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | HM | Mac |
| Acute hepatitis | 14 (82.4%) | 14 (82.1%) | 14 (82.4%) | 17 (100%) | 10 (58.8 %) | 9 (52.9%) | - | - | - | - |
| Chronic hepatitis | 3 (75%) | - | 1 (25%) | 2 (50%) | - | 2 (50%) | - | - | - | - |
| Cirrhosis | 50 (66.7%) | 31 (41.3%) | 5 (6.6%) | 37 (44.3%) | 2 (2.7%) | 13 (17.3%) | 72 (96%) | 5 (6.7 %) | 7 (9.3% ) | 26 (36%) |
| HCC | 4 (100%) | 4 (100%) | 4 (100%) | 2 (50%) | 1 (25%) | 4 (100%) | 2 (50%) | - | - | - |

In acute hepatitis, most common presenting symptom was jaundice (100%) followed by anorexia (82.4%), nausea and vomiting (82.1%).
In chronic hepatitis, most common presenting symptom was anorexia (75%) followed by jaundice (50%).
In cirrhosis, majority of the patients presented with abdominal distension (96%), followed by anorexia (66.1%), jaundice (44.3%), 33 patients had GI bleeding
– 26 had malena (34.1%) and 7 patients had haematenesis (9.3%).

All patients with HCC had anorexia, nausea and vomiting. Jaundice was presented in 50% patients with HCC.

**Past history**
Diabetes was present in 16 patients of cirrhosis

International Journal Dental and Medical Sciences Research
Volume 3, Issue 2,Mar-Apr 2021 pp 253-261 www.ijdmsrjournal.com ISSN: 2582-6018

with portal hypertension.
3 patients (17.6%) with acute hepatitis and 5 patients with (6.7%) cirrhosis had co-infection with HIV.
1 patient with chronic hepatitis had chronic kidney disease.

8 patients (10.7%) with cirrhosis had history of blood transfusion. 8 patients (10.7%) with cirrhosis had history of tattooing.
15 patients of cirrhosis had history of alcohol consumption, 2 patients with HCC had history of alcoholism.

**Physical examination**

| | Acute hepatitis | | Chronic hepatitis | | Cirrhosis | | HCC | |
|---|---|---|---|---|---|---|---|---|
| | No. | % | No. | % | No. | % | No. | % |
| Pallor | - | - | 1 | 3.8 | 24 | 92.3 | 1 | 3.8 |
| Icterus | 17 | 100 | 2 | 50 | 38 | 50.7 | 2 | 50 |
| Edema | - | - | - | - | 74 | 98.7 | 2 | 50 |
| Parotid enlargement | - | - | - | - | 31 | 41.3 | - | - |
| Loss of secondary sexual characters | - | - | - | - | 40 | 53.3 | - | - |
| Ascitis | - | - | - | - | 75 | 100 | 2 | 50 |
| Hepatomegaly | 8 | 40 | 3 | 75 | 5 | 6.6 | 4 | 100 |
| Splenomegaly | - | - | - | - | 74 | 94.9 | - | - |
| Dilated veins | - | - | - | - | 74 | 94.9 | 3 | 75 |

Pallor was present in 24 patients (92.3%) with cirrhosis.

In acute hepatitis, 17 patients had Icterus (100%) followed by hepatomegaly in 8 patients (40%).
Patients with chronic hepatitis presented with 1) hepatomegaly in 3 patients (75%), followed by 2) Icterus in 2 patients (50%).

In cirrhosis patients the common signs were ascitis in 75 patients (100%), followed by pedal oedema in 74 patients (98.7%), followed by splenomegalyin 74 patients (94.9%) and dilated veins (94.9%). Icterus was present in 38 patients (50.7%),followedbylossofsecondarysexualcharacter sin40patients(53.3%).

Patients in other groups did not have loss of secondary sexual characters and parotid enlargement.
All patients with hepatocellular carcinoma had hepatomegaly, 2 patients (50%) had Icterus, edema and ascitis.

**Haemoglobin**
All patients with acute hepatitis had Hb > 10 gm%. 22 patients (29.3%) of cirrhosis had Hb < 10 and 42 patients (56%) of cirrhosis had Hb between 10 and 12gm%.
Majority of patients with HCC had Hb between 10 and 12 (75%). Mean Hb ranges from 10.45 to 11.7.

**Bilirubin**
Total bilirubin ranges from 1.4 to > 20 in acute hepatitis and 5-20 in acute hepatitis B.
All patients with chronic hepatitis except chronic hepatitis C had bilirubin between 1.4 and 5, and serum bilirubin was normal in chronic hepatitis C.
Eleven patients (14.6%) with cirrhosis had normal serum bilirubin. Majority of patients (41.3%) had bilirubin level between 1.4 and 5.
Bilirubin ranges from 1.1-20 in patients with cirrhosis with hepatitis B. In patients with cirrhosis with Hep C bilirubin ranges from 1.4-5.
In patients with hepatocellular carcinoma serum bilirubin ranges from 1.4-5. Mean bilirubin in acute hepatitis 8.5, chronic hepatitis 3.6, cirrhosis 4.2 and HCC 4. Direct bilirubin was the predominant in all groups compared to indirect bilirubin.

**AST and ALT**
Mean AST in acute hepatitis was 330.7. In chronic hepatitis it was 193.5,114.1 in cirrhosis and 100.5 in HCC. Mean ALT in acute hepatitis was 391.1, 189.7 in chronic hepatitis, 129.8 in cirrhosis and 101.5 inHCC.

**Prothrombin time**
Prothrombin time prolongation was presented in 7 (41.2%) patients with acute hepatitis and 12 patients (16%) with cirrhosis and in 1 patient (25%) with HCC.

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**HBsAg**

HBsAg positivity was presented in 6 patients (35.3%) of acute hepatitis, 1patient (25%) with chronichepatitis, 18 patients (24%) of cirrhosis and 2 patients (50%) with HCC.

All 6 patients with acute hepatitis Bwere confirmed by detecting Ig M anti HBc.

**HCV**

One patient with chronic hepatitis (25%) was positive for anti HCV and HCVRNA.

Two patients with cirrhosis (2.6%) were positive for anti HCV and HCV

RNA.

One patient with HCC was positive for anti HCV (25%).

**Imaging**

**Table 10: Ultrasonography**

| Diagnosis | SL+SM+AS | Normal | AE+AS | AE+AS+SM | Hepatomegaly | SL+SM | HCC |
|---|---|---|---|---|---|---|---|
| Acute hepatitis | - | 8 | - | - | 3 | - | - |
| Acute hepatitis B | - | 3 | - | - | 3 | - | - |
| Chronic hepatitis | - | - | - | - | 2 | - | - |
| Chronic hepatitis B | - | - | - | - | 1 | - | - |
| Chronic hepatitis C | - | 1 | - | - | - | - | - |
| Cirrhosis with portal hypertension | 21 | - | 3 | 31 | - | - | - |
| Cirrhosis with portal hypertension with hepatitis B | 11 | - | - | 5 | - | - | - |
| Cirrhosis with hepatitis C | - | - | - | 2 | - | - | - |
| HCC | - | - | - | - | 4 | - | 4 |

SL+SM+AS  Shrunken liver with splenomegaly with ascitis. AE + AS  Altered echotexture with ascitis.

AE + AS + SM  Altered echotexture with ascitis with splenomegaly SL + SM  Shrunken liver with splenomegaly

Eleven patients with acute hepatitis had sonographic evidence of hepatomegaly and 6 patients had normal findings.

Three patients with chronic hepatitis had hepatomegaly and one patient had normal sonography.

38 patients (50.6%) with cirrhosis had altered echotexture of liver with ascitis with splenomegaly and 33 patients (44%) had shrunken liver, splenomegaly and ascitis.

All patients with hepatocellular carcinoma had sonographic evidence of hepatic mass lesion which were later confirmed by abdominalCT.

**AG reversal**

All patients with cirrhosis had AG ratio reversal.

## IV. DISCUSSION

**Age group**

In the present study, age group ranges from 21-85 years. In acute hepatitis 41.2% of patients were in the age group of 14-30 years and 41-50 years. Mean age in acute hepatitis was 35.4  10.6 years. Ravinder Kaur et al.[36]study of 306 patients with acute hepatitis age group ranges from 1-68 years with mean age of 26  2.5 years. Estrada JY et al.[21]a study of clinical profile of acute hepatitis shows mean age of 34.1  11.7 in study of 203 patients.

In the present study, in chronic hepatitis patients were in all age groups without anyclustering.

In cirrhosis 70.6% of patients were in the age group of 41-60 years in the present study. Tarun Kumar[32]study of 80 cases with cirrhosis 46.83%

patients were in the age group of 31-60years.
In the present study, 50% of patients with hepatocellular carcinoma were in the age group of 51-60 years. Shashi Bala Paul et al.[22] study of 301 patients with hepatocellular carcinoma mean age was 45.1 □ 13.1years.
The present study had more number of acute hepatitis patients. Other studies with acute hepatitis also included children in whom hepatitis A was more common.
Current study mean age group of acute hepatitis matches with Estrada et al.
In cirrhosis and hepatocellular carcinoma the age group matches with comparative studies.

**Sex ratio**
Out of 100 patients, 80 patients (80%) were males and 20 (20%) were females.
Male:Female::4:1.
In acute hepatitis male:female was 4.6:1, chronic hepatitis 3:1, cirrhosis 4:1 and in hepatocellular carcinoma3:1.
Kaur H et al.[23]a study of spectrum of acute viral hepatitis in 101 patients showed male:female ratio of1.65:1.
Golnaz Bahramali et al.[37]a study of clinical, virologic and phylogenetic features of chronic hepatitis in Iranian patients had male:female ratio of 4:1.
Paul SB et al.[22]study of cirrhosis of liver in Indian patients showed male:female ratio of 6:1.
Khan et al.[76]a study of clinical profile of hepatocellular carcinoma showed male:female ratio of 4.5:1.
All studies show male preponderance of disease comparable with present study probably because of high risk behaviour inmales.

**Occupation**
Majority of male patients (63%) were agriculturists and majority of female patients (100%) were housewives.

**Symptoms and signs in comparison with other studies**

In the present study, jaundice was the commonest clinical symptom and sign (100%) which were comparable to Kaur H et al.[23](93.06%) and Holgado GM et al.[77](97.2%).

Followed by Anorexia (82.4%), 72.6% in Kaur H et al.[74]and 61.1% in Holgado GM etal.[24]

Pain abdomen was present in 52.9% in the present study which was little lower comparable to Holgado GM et al.[77]

Fever was present in 58.8% of patients comparable to Holgado et al.[24] (55.5%).

Hepatomegaly was present in 40% of patients comparable to Kaur H et al.[23] 38.6%, which was slightly higher in Holgado GM et al.[77]63.9%.

In the present study, among patients with chronic hepatitis 50% had jaundice, 75% had anorexia and 50% had pain abdomen.

Usha Arora et al.[25]had higher incidence of jaundice 92.8%, followed by anorexia 45% and pain abdomen 35.71%.

However, these three symptoms were the commonest in both studies.

The present study had only 4 patients with chronic hepatitis without cirrhosis, so there is difference in the incidence of jaundice and anorexia.

In the present study, in patients with cirrhosis abdominal distension (96%) was the commonest presenting symptoms followed by anorexia (66.7%), GI bleeding (45%) and jaundice (44.3%). Commonest signs were pedal oedema (98.7%) followed by splenomegaly (94.9%).

All the above symptoms and signs are comparable to Sarin SK et al.[35]where abdominal distension (93.4%), followed by anorexia (74.2%) and GI bleeding (55%) were commonest presenting symptoms followed by signs pedal oedema (82.1%) and splenomegaly (67.5%).

In the present study, in patients with hepatocellular carcinoma anorexia was the commonest symptom (100%), which was comparable to Khan et al.[76]78%.

Hepatomegaly was the commonest sign present in 100% patients which was comparable to Khan et al.[33]96.2%, followed by icterus in 50% slightly higher compared to Khan et al.[33]in which it was 26%.

However the number of patients in the present study with HCC was very less.

**LIVER FUNCTION TESTS**

In the present study, mean bilirubin in acute hepatitis was 8.5 □ 7.4, AST and ALT were 330.7 □ 210, 391.1 □ 180, respectively, which was comparable to Holgado GM et al.,[24]bilirubin (10.6 □ 7.9), AST (410.2 □ 136) and ALT (441.6 □ 226).

**Comparison of chronic hepatitis with other studies**

Mean bilirubin, AST and ALT in the present study, in patients with chronic hepatitis were 3.6 □ 2.8, 193.5 □ 20.2, 56.4 □ 36.3, respectively comparable to Alam
et al. where bilirubin (16 □ 5.1), AST (56.4 □ 36.3) and ALT (170 □ 100.1) respectively.

**Comparison of cirrhosis with portal hypertension**

Mean bilirubin, AST and ALT in patients with cirrhosis in the present study were 4.2 □ 1.6, 114.1 □ 20.8, 129.8 □ 14.6, respectively comparable to Kumar T et al., bilirubin 5.1 □ 2.2, AST 106 □ 8.6 and ALT 186 □ 26

**Comparison of hepatocellular carcinoma with other studies**

Mean bilirubin, AST, ALT in patients with HCC were 4 □ 2.6, 100.5 □ 20,
101.5 □ 16.2, respectively comparable to Paul SB et al.[22]bilirubin (6.2 □ 1.6), AST (98.1 □ 26) and ALT (106 □ 6.2).

In acute hepatitis there was high AST, ALT and bilirubin compared to other groups probable because of active hepatitis, comparable to study group. In other groups values matches with comparable studies.

**Seroprevalence of HBV and HCV**

**Comparison of acute hepatitis with other studies**

Seroprevalence of hepatitis B virus in the present study was 35.3% which was comparable to Ayoola et al.[27]35.6%, which was slightly lower in Kaur H et al.[23]29.7%, still lower in Kaur R et al.[36]12.9%.

No patient with acute hepatitis was seropositive for HCV in the present study. However seroprevalence of acute hepatitis C ranged from 0-3.7% in comparative studies.

**Comparison of chronic hepatitis with other studies**

Seroprevalence of hepatitis B in chronic hepatitis was 25% which was comparable to Aminuddin et al.[30]25.4%.

Seroprevalence of HCV in chronic hepatitis in the present study was 25%, slightly higher compared to Aminuddin et al. 16.3%.

**Comparison of cirrhosis with portal hypertension with other studies**

Seroprevalence of hepatitis B virus in patients with cirrhosis was 24% in the present study. Seroprevalence ranges from 17.5% (Kumar T et al.[34]) to 42.9% (Blankson A et al.[27]).

Seroprevalence of Hep C virus in the present study was 2.6% which was comparable to Blankson et al.[27]7.1%.

**Comparison of hepatocellular carcinoma with other studies**

Seroprevalence of Hep B in patients with HCC in the present study was 50% comparable to Paul SB et al.[22]51%, which was 33.35% in Khan et al.[33]and 64.2% in Han BH et al.[29]

Seroprevalence of Hep C in patients with HCC in the present study was 25%, slightly higher compared to Paul SB et al.[22](12%) and Han BH et al.[29](12.7%).

Only 4 patients had HCC in the present study. Vast study is needed to find out the exact prevalence of HCV in HCC.

## V. SUMMARY

1. One hundred patients with liver diseases were studied among whom 17 patients (17%) had acute hepatitis, 4 patients (4%) had chronic hepatitis, 75 patients (75%) had cirrhosis and 4 patients (4%) had hepatocellularcarcinoma.
2. Males outnumbered females in all groups of liverdisorders.
3. Presenting symptoms in the patients with acute hepatitis was jaundice and anorexia, in patients with chronic hepatitis it was anorexia, in cirrhosis abdominal distension, in hepatocellular carcinoma anorexia and painabdomen.
4. In patients with acute hepatitis 35.3% cases was due to HBV infection. No case of acute HCV infection wasnoted.
5. Out of 4 patients with chronic hepatitis, one had HBV and one patient had HCV infection.
6. In patients with cirrhosis high prevalence of HBV wasnoted.
7. Out of 4 patients with hepatocellular carcinoma 2 patients had HBV and one patient hadHCV.
8. No cases of co-existent infection of both HBV and HCV was observed in the presentstudy.

## VI. LIMITATIONS OF THE STUDY

1. It is a hospital based study and not a population basedstudy.
2. Onlypatientswithsymptomsofliverdiseasearein cludedinthestudy.Asymptomatic patients are not included.
3. All the required investigations are not done in all 100cases.
4. Chronic hepatitis is diagnosed taking into consideration either the histopathology report orserology.
5. Hepatocellular carcinoma has been identified as a mass lesion in the ultrasound and CT abdomen. Histopathology is notdone.

## VII. CONCLUSIONS

1. Majority of patients were in the age group of 41-60years.
2. Male to female ratio was4:1.
3. Majority of patients presented with abdominal

distension, anorexia andjaundice.
4. All the 100 patients had abnormalLFT.
5. Twenty patients had abnormal prothrombintime.
6. Histopathological examination identified two patients of chronic hepatitis and one with cirrhosis ofliver.
7. 30% had abnormal viral markers in the form of HBsAg in 26% and anti HCV in4%.

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