



“A PROSPECTIVE STUDY OF LIVER CIRRHOSIS: AN OVERVIEW, PREVALENCE, CLINICAL MANIFESTATION & INVESTIGATIONS IN PATIENTS ADMITTED TO THE MEDICINE WARD IN A RURAL TEACHING HOSPITAL.”

Pharmacology

Ervilla Dass*	Department of Pharmacology, Smt. Bhikhiben Kanjibhai Shah Medical Institute & Research Centre, Sumandeep Vidyapeeth deemed to be University, At. & PO. Piparia, Tal. Waghodia Dist. Vadodara -391760 (Gujarat) *Corresponding author
Mehul Patel	Students of M.B.B.S., Smt. Bhikhiben Kanjibhai Shah Medical Institute & Research Centre, Sumandeep Vidyapeeth deemed to be University, At. & PO. Piparia, Tal. Waghodia Dist. Vadodara -391760 (Gujarat)
Shaini Patel	Students of M.B.B.S., Smt. Bhikhiben Kanjibhai Shah Medical Institute & Research Centre, Sumandeep Vidyapeeth deemed to be University, At. & PO. Piparia, Tal. Waghodia Dist. Vadodara -391760 (Gujarat)
Dhruv Patel	Students of M.B.B.S., Smt. Bhikhiben Kanjibhai Shah Medical Institute & Research Centre, Sumandeep Vidyapeeth deemed to be University, At. & PO. Piparia, Tal. Waghodia Dist. Vadodara -391760 (Gujarat)
Gunjan Patel	Students of M.B.B.S., Smt. Bhikhiben Kanjibhai Shah Medical Institute & Research Centre, Sumandeep Vidyapeeth deemed to be University, At. & PO. Piparia, Tal. Waghodia Dist. Vadodara -391760 (Gujarat)
Unnati Pobaru	Students of M.B.B.S., Smt. Bhikhiben Kanjibhai Shah Medical Institute & Research Centre, Sumandeep Vidyapeeth deemed to be University, At. & PO. Piparia, Tal. Waghodia Dist. Vadodara -391760 (Gujarat)

ABSTRACT

Liver disease covers a broad range of clinical histological features. Various liver disorders are major cause of morbidity and mortality rate, and amongst them liver cirrhosis is the final common pathological pathway of liver injury, is characterized by widespread nodules in the liver combined with fibrosis and by increased deposition and altered composition of extracellular matrix. The aim of the present study was to see the prevalence of liver cirrhosis in rural area, and to study laboratory investigations. Various clinical manifestations that were recorded of which most common were, tiredness, and itching. We recorded 18 patients suffering from liver cirrhosis, out of 18 16 were male and 2 were female; further, 13 patients showed elevated SGOT levels and serum SGPT levels were elevated in 15 number of patients than compared to the normal values.

KEYWORDS

liver cirrhosis, Alanine aminotransferase; Alkaline phosphatase; Bilirubin; clinical manifestation

INTRODUCTION

Liver cirrhosis is severe, chronic, irreversible and non-communicable disease which is one of the chief causes of mortality and morbidity worldwide. Liver disease encompasses a clinical histological spectrum and is amongst them cirrhosis is the culmination of various pathways that leads into development of advanced hepatic fibrosis with its complications. Hence, it can be stated that liver cirrhosis is the final pathological result of various chronic liver diseases, and fibrosis is the precursor of cirrhosis (Wen-Ce Zhou et al, 2014)¹. Various causes of liver cirrhosis includes, hemochromatosis, Wilson's disease, primary biliary cirrhosis, primary sclerosing cholangitis, and autoimmune hepatitis which results from altered composition of extracellular matrix (Friedman SL, 1993)^{2,3}.

Liver cirrhosis is a pathological state which is associated with a range of characteristic clinical manifestations, which can result in necrosis of the cell followed by fibrosis and nodular regeneration with gross change in liver architecture. The exact prevalence of cirrhosis "cirrhosis" (Greek=orange color) is unknown⁴. The clinical manifestations of cirrhosis vary widely, from no symptoms at all to liver failure, and are determined by both the nature and severity of the underlying liver disease as well as the extent of hepatic fibrosis⁵ and the frequent elevated levels are seen with AST, ALT, ALP and OGT; whereas, jaundice, nodular liver and spider angionitis are the general clinical features of cirrhosis⁶.

The incidence and prevalence of two conditions in particular, cirrhosis (liver scarring) and primary liver cancer, are key to understanding the burden of liver disease as they represent the end-stage of liver pathology and thus are indicative of the associated mortality⁷. Epidemiological studies suggest prevalence of liver disease in around 9%-32% of general population in India with patients having obesity,

and diabetes. Liver disorder is mostly prevented in rural area due to less awareness of health education and lack of medical facilities and clinical examination to find liver disorders. Liver disorders are an important cause of unexplained elevated transaminases, cryptogenic cirrhosis and cryptogenic hepatocellular carcinoma in Indian patient. According to the latest WHO data published in may 2014 liver disease deaths in India reached 216,865 or 2.44% of total deaths⁸. The disease under treatment may also affect the liver adversely leading to elevated hepatic enzymes⁹ and also conventional antimalarial drugs; like chloroquine, quinine and sulphadoxine-pyrimethamine when used alone or with chloroquine can induce liver damage¹⁰.

At present, effective strategies to treat liver cirrhosis are still lacking, partially because of a poor understanding of the molecular mechanisms leading to cirrhosis. Hence, a better understanding of the pathogenesis of liver cirrhosis would help in the development of more effective treatment options.

MATERIAL AND METHODS

This short-term study design was a prospective, cross-sectional and observational type, was approved by Sumandeep Vidyapeeth Institutional Ethics Committee (SVIEC) and was conducted at the Medicine Department of Dhiraj Hospital, a rural tertiary care teaching hospital, attached to Smt. B. K. Shah Medical Institute & Research Centre, Sumandeep Vidyapeeth deemed to be University, Piparia. Necessary data was gathered from each patient files, compiled in the data collection sheet which was prepared and the data were entered in Microsoft Excel for statistical analysis.

The sample size was initially approximate 50 patients; however, within the duration of stipulated time of July 2016 till November 2016, we collected data of 18 patients suffering from liver cirrhosis.

Selection criteria of patient:-

Inclusion criteria:-

1. Patient with elevated Liver Function Tests.
2. Patients diagnosed as cirrhosis.
3. Patient admitted in Dhiraj Hospital in medicine ward or OPD patients.

Exclusion Criteria:-

1. Final diagnosis is not made or diagnosis is query.
2. No treatment written on case paper.
3. They contain drug belonging to ayurved or other disciplines of medicine as main drug

Collection of Data:

Data collection sheet was prepared which included the details of patients, such as name, age, sex, location of the patients, including relevant history, examination details, diagnosis and laboratory investigation such as levels of serum SGOT, SGPT and serum total bilirubin was collected and recorded.

Additional information including predisposing factors and complications were also noted. Individual analysis of patient record was carried out to minimise errors.

RESULTS

Observations and results:

Data collection Sheet

Laboratory investigation from medicine ward over the duration of four months was collected. Out of approximate 3000 number of patients assumed to be in the Medicine department, nearly 18 patients diagnosed with liver cirrhosis were found.

Out of 18 patients recorded, 2 were female and 16 were male patients as depicted in **table 1** and **figure 1** and they belong to the age group between 30 years to 65 years. The laboratory investigations included Liver Function Tests and the parameters which were recorded were serum SGOT, serum SGPT and serum bilirubin levels as shown in **figure 2, 3 & 4** respectively, and **figure 5** shows comparison of serum levels of all the 18 patients of liver cirrhosis, the values were compared with the normal values of SGOT and SGPT that is about 40 IU/L and that of direct bilirubin is 0.1-0.4 mg %. We recorded 18 patients suffering from liver cirrhosis, out of which 5 patients showed nearly normal SGOT levels, and 13 patients showed elevated SGOT levels than compared to the normal values. Serum SGPT levels were elevated in 15 number of patients and 3 patients showed nearly normal values. Whereas, only one patient showed normal serum bilirubin levels and other 17 showed elevated levels. Clinical manifestations such as, Fatigue, Insomnia, Itchy skin, Loss of appetite, Nausea were recorded.

Table - 1: Gender distribution of patients with liver cirrhosis in rural area:

Total Cases of Liver cirrhosis patients	Male	Female
18	16	02

Figure 1: Gender distribution of patients with liver cirrhosis in rural area

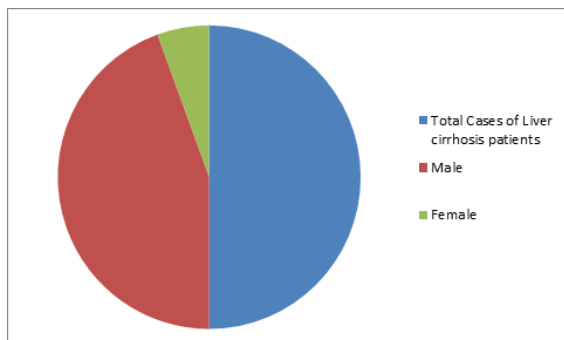


Figure 2: Levels of Serum Glutamic-Oxaloacetic Aminotransferases (SGOT)

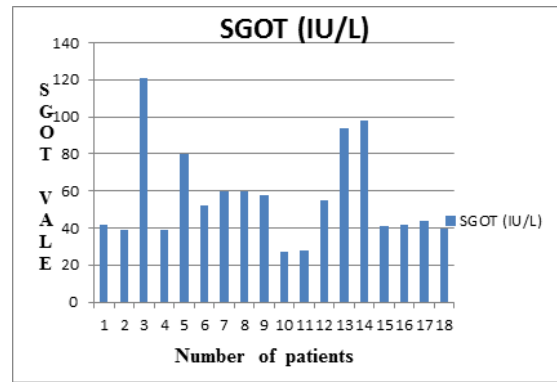


Figure 3: Levels of Serum Glutamic-Pyruvic Transaminase (SGPT) levels

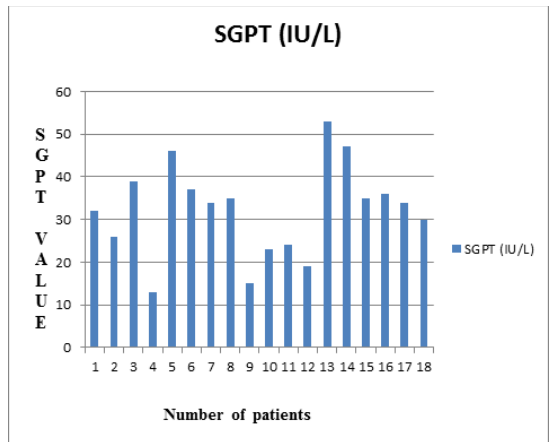


Figure 4: Levels of Total Serum Bilirubin levels

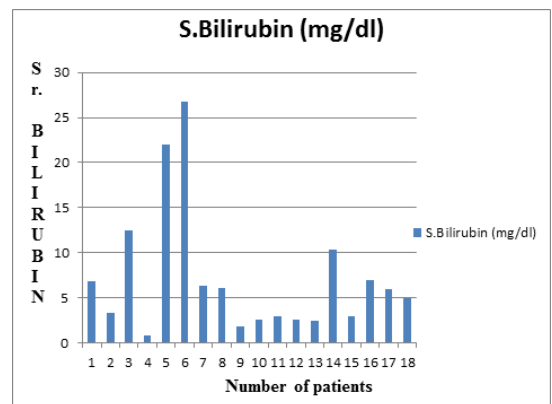
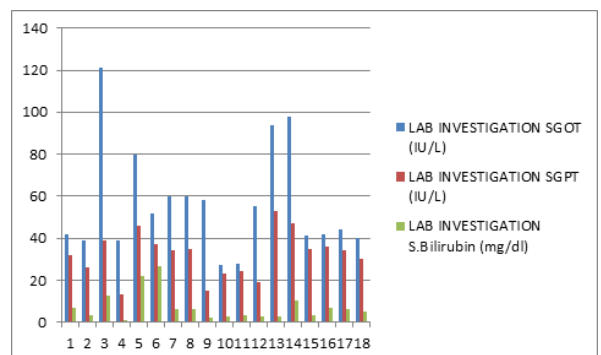


Figure 5: Comparison of the levels of various Liver Function Tests in patients with liver cirrhosis

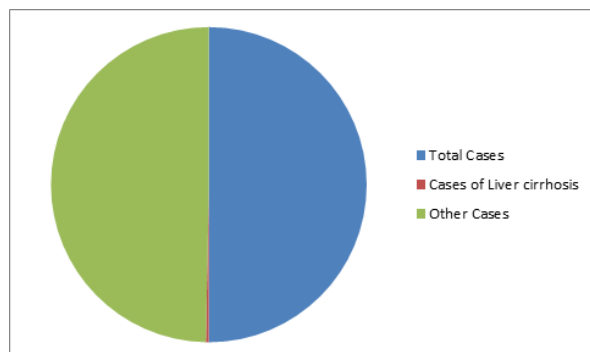


In the present study, nearly for 4 month approximately 3000 OPD patients were there, out of which we find nearly 18 patients that were diagnosed as liver cirrhosis as shown in **table 2** and **figure 6**. So according to our findings, liver cirrhosis prevalence in rural area is at 0.667, which showed alterations in the serum levels.

Table 2: Prevalence of liver cirrhosis in rural area:

Total Cases	Cases of Liver cirrhosis	Other Cases
3000	18	2982

Figure 6: Prevalence of liver cirrhosis in rural area:



DISCUSSION

Cirrhosis is defined as the histological development of regenerative nodules surrounded by fibrous bands in response to chronic liver injury, which extends to portal hypertension and end stage liver disease, and the ultimate therapy for cirrhosis and end stage liver disease is liver transplantation¹¹.

Liver disease encompasses a clinical histological spectrum. Fatty liver is benign reversible condition but progression to alcoholic hepatitis and cirrhosis is life-threatening according to a prospective analysis on profile of liver disease in India. Cirrhosis of the liver is the most dangerous condition affecting the vital organ liver and can be caused by alcohol and hepatitis. Cirrhosis of the liver, which is also called hepatic cirrhosis, is a condition of chronic liver damage from a variety of causes leading to scarring and liver failure. Approximately more than one million cases per year in India are seen. It can't be cured but treatment may help to the patient. It requires medical diagnosis, includes also laboratory investigations or imaging depending upon the severity of the condition. Liver cirrhosis often has no signs or symptoms until liver damage is extensive.

Epidemiological studies suggest prevalence of liver disease in around 9%-32% of general population in India with patients having obesity, and diabetes¹². Liver disorder is mostly prevented in rural area due to less awareness of health education and lack of medical facilities and clinical examination to find liver disorders.

Liver disorders are an important cause of unexplained elevated transaminases, cryptogenic cirrhosis and cryptogenic hepatocellular carcinoma in Indian patient. According to the latest WHO data published in may 2014 liver disease deaths in India reached 216,865 or 2.44% of total deaths^{8,9,13}.

The natural history of cirrhosis is dependent on both the aetiology and treatment of the underlying cause. However, the exact prevalence of cirrhosis is unknown. The general laboratory signs that are frequently elevated in cirrhosis are AST, ALT, ALP and OGT. The general clinical features of cirrhosis include jaundice, nodular liver and spider angionitis⁶.

CONCLUSION

With observations made by the authors, males are most prone to cirrhosis than females at an age group of 30–65 years. This may be mainly due to the increased alcohol consumption, which is one of the most important predisposing factors for cirrhosis by men in Indian scenario. According to data collected within four months short duration, the prevalence of liver cirrhosis was about 0.667 in the rural area compared to the total number of patients. Various clinical manifestations that were recorded of which most common were, tiredness, and itching and also insomnia, fatigue, loss of appetite and

nausea.

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