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STUDY ON ALCOHOLIC AND NON ALCOHOLIC LIVER DISEASES RISK FACTORS, SYMPTOMS, PREVALENCE OF ALCOHOLIC LIVER DISEASE BY ALCOHOL AND SMOKING, ESTIMATION OF ELEVATED PARAMETERS, ESTIMATION OF HIGHEST OCCURANCE OF ALCOHOLIC LIVER DISEASES IN 978 PATIENTS ADMITTED IN HOSPITAL

Aishwarya Arigapudi*

Department of Pharmacy Practice in Gastroenterology and Liver, St.Peter's Institution of Pharmaceutical Sciences, Warangal, India.

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***Corresponding Author**
Dr. Aishwarya Arigapudi
Department of Pharmacy Practice in Gastroenterology and Liver, St.Peter's Institution of Pharmaceutical Sciences, Warangal, India.

ABSTRACT

Alcoholic Liver Disease is a term that encompasses the liver manifestations of alcohol overconsumptions, including fatty liver, alcoholic hepatitis and chronic hepatitis with liver fibrosis or cirrhosis. Risk factors include increased quantity of alcohol intake, pattern of drinking, sex, hepatitis infection etc. Non-Alcoholic Fatty Liver Disease (NAFLD) is excessive fat build up in the liver due to causes other than alcohol use**.** There are two types non-alcoholic fatty liver (NAFL) and non-alcoholic steatohepatitis (NASH) with the latter also including liver inflammation. Risk factors include diabetes, obesity, a high in fructose and older age. NAFDL and alcoholic liver disease are types of fatty liver disease. NAFLD is related to insulin resistance and metabolic syndrome. The patients admitted with liver impairment data was collected. The risk factors were assessed based on the question forms. Differentiations of alcoholic and non alcoholic liver diseases were done. The age, sex, symptoms, diagnostic parameters, alcoholic and smokers rates were calculated based on the data collected over a period of time. The diagnostic parameter changes were listed in the patients.

KEYWORDS: Non-Alcoholic Fatty Liver Disease (NAFLD), Alcoholic Liver Disease, non-alcoholic fatty liver (NAFL), portal hypertension (PHNT), shortness of breath (SOB), pulse rate(pr).

INTRODUCTION

Liver is one of most complex organ in body, with over 500 functions like filtering out blood toxins, storing energy, making hormones and proteins and regulating cholesterol and blood sugar. ALD has 3 stages of liver damage: fatty liver(steatosis), alcoholic hepatitis (inflammation and necrosis), and alcoholic liver cirrhosis. All are caused by chronic heavy alcohol ingestion. NAFLD is build up of extra fat in liver cells that is not caused by alcohol. The exact cause of NAFLD was not known.

ALD symptoms: Pedal edema, Fatigue, Abdominal pain, Nausea, Vomiting, skin and eyes that appear yellowish, loss of appetite.

NAFLD symptoms: fatigue, pain and discomfort in upper abdomen, abdominal swelling, enlarged blood vessels beneath the skin, weight loss.

Causes of ALD: Quantity of alcohol taken (60-80g per day, pattern of drinking, sex, hepatitis C infection, genetic factors, iron overload, diet (malnutrition), jaundice.

Causes of NAFLD: NAFLD are associated with insulin resistance, metabolic syndrome, genetics, dysbiosis, some drugs (amiodarone, methotrexate).

Diagnosis: The current diagnostic criteria for liver diseases are liver function tests, blood tests, endoscopy, ULTRA sound, CT scan of the liver and liver biopsy.

METHODOLOGY

Study site: Sandeep Reddy gastro and liver clinic and Rohini Super speciality hospital, Warangal, Telangana.

Study design: A prospective study. It is a questionnaire based study involving assessment of disease progression, causes, symptoms, diagnostic changes in liver functioning.

Study period: 11 months (November 2018 to September 2019).

Sample size: 978 patients suffering from alcoholic liver diseases were considered and patient information was collected.

Study population: all patients who are admitted in the hospital with liver function impairment.

Study criteria: The inpatients that were diagnosed with elevated liver enzymes were enrolled into the study by considering following inclusion and exclusion criteria.

Inclusion criteria

→All Patients with either sex.

→All Patients of both alcoholic and non alcoholic patients.

→patients of all ages.

Exclusion criteria

→patients who are unable to comply with study criteria.

→out patients.

STUDY PROCEDURE

The study is aimed to calculate the ratio of ALD and NAFLD in liver impairment patients. The risk of alcohol intake in admitted patients was assessed. The age and gender factors also play a crucial role in estimating the risk of liver damage. The patients who were diagnosed with ALD or NAFLD by the physicians were taken into the study. The initial assessment is done by the patient diagnosis test reports. Patient's data was collected in a data collection form and patient was reassessed within 2-7 days of using medication and disease severity was assessed by comparing the previous diagnostic test data. The data was mainly focused on the parameters which include age,gender,alcoholic and non alcoholic patients ratio, smoker and non smokers, elevated diagnostic parameters(B.P, pulse rate, total bilirubin, direct bilirubin, serum creatinine, serum urea, alkaline phosphatase, hemoglobin, RBC, WBC, albumin, lipase, amylase, SGPT, SGOT, decreased diagnostic parameters) symptoms(fever, abdominal pain, nausea, vomiting, stomach fullness, constipation, shortness of breath, yellow color of eyes, asymptomatic)rate at which the patients suffered due to liver disorder. The severity and the symptoms rate were evaluated over a particular area over a period of time.

Sources of data

All the relevant and necessary data was collected from the following.

Patient medication chart.

Patient profile form.

Patient and attendant interview.

RESULTS

During the study period a total number of 978 patients were reviewed. The roles of several factors were assessed in the study.

Distribution of patients according to age

Out of 978 patients participated in our study; belong to age group 17-80 years. The distribution is as follows.

CHART: 1: age wise assessment.

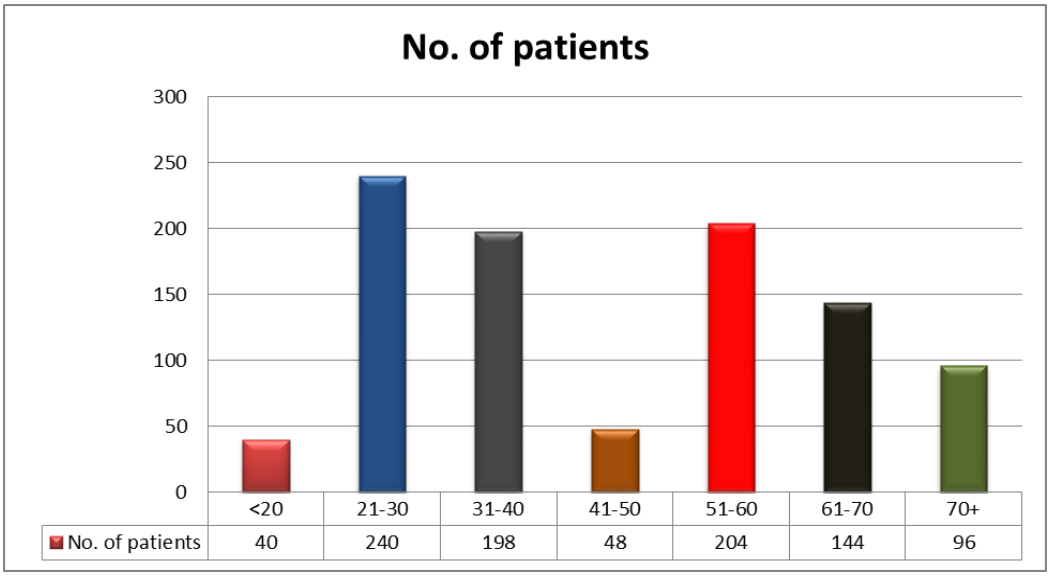


CHART: 1: AGE WISE ASSESSMENT CHART.

The highest age group of people suffering from liver disease is 21-30 years of age group.

CHART: 2: distribution of patients according to gender

The prevalence of liver diseases was considerable greater in men than in women of total 978 patients participated in the study. The distribution is as follows.

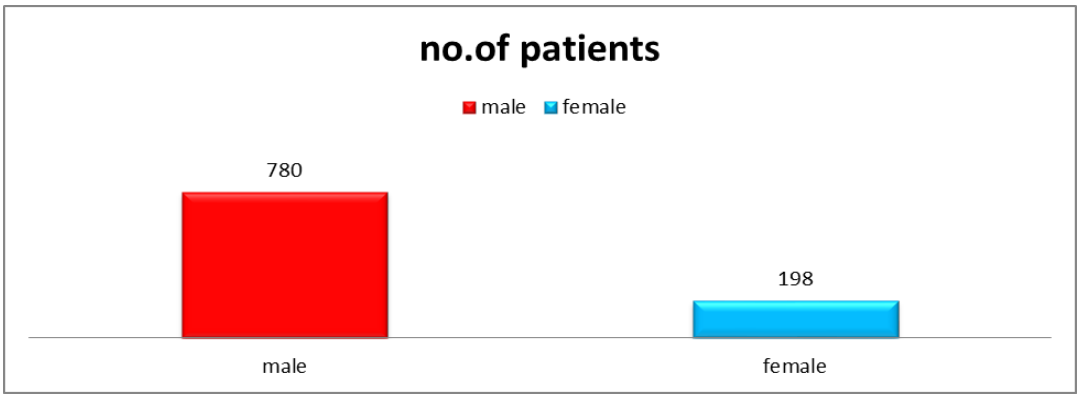


Chart: 2: Gender Wise Assessement Chart.

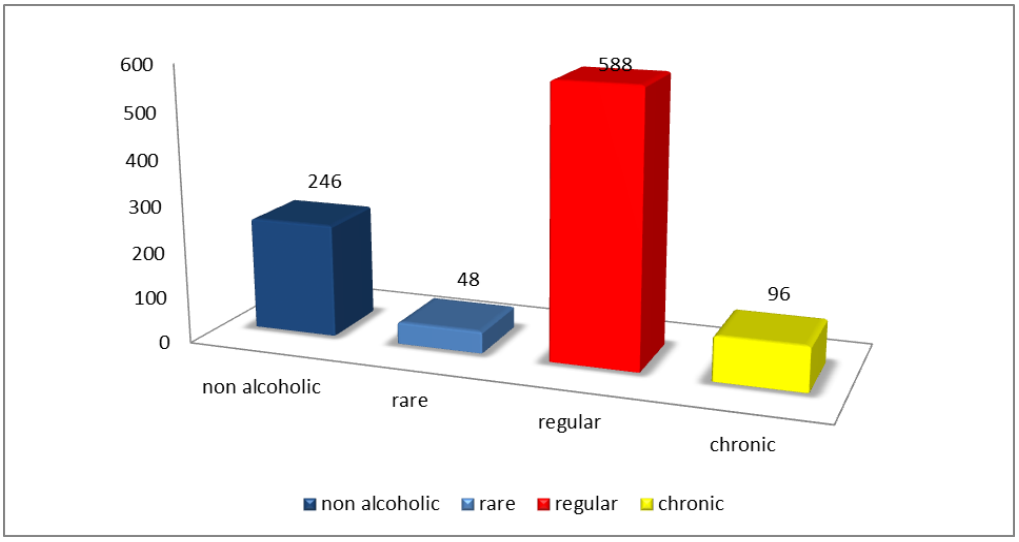


Chart: 3: Number of Patients Who Are Alcoholic.

Chart 3: There is 74.8 per cent risk of getting liver disease when increases in the intake of alcohol. The regular alcoholics have more risk when compared to other patients.

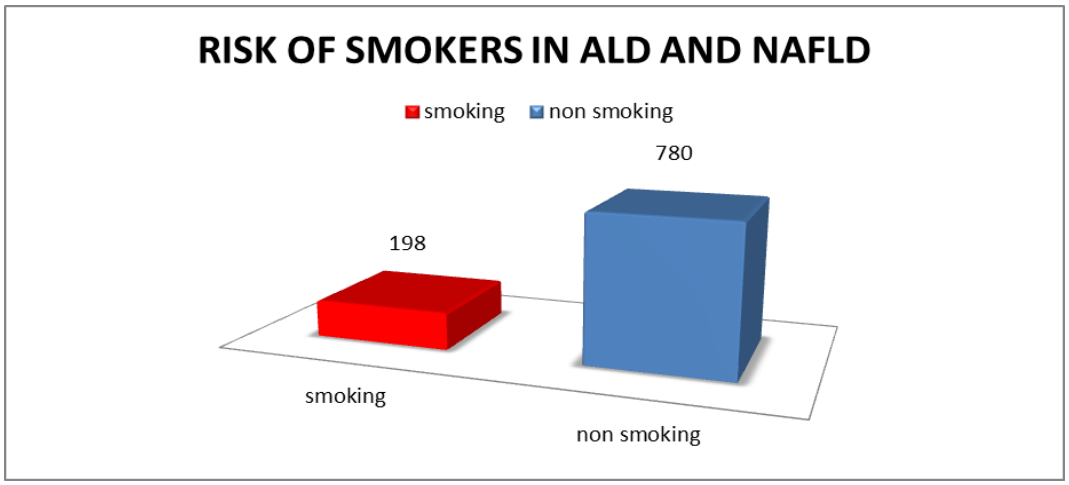


Chart 4: The Risk of Smoking in Liver Impairement Patients.

CHART: 4: risk of smokers in ALD and NAFLD.

The risk of 20.2% was assessed in the people who were smokers are having liver disease.

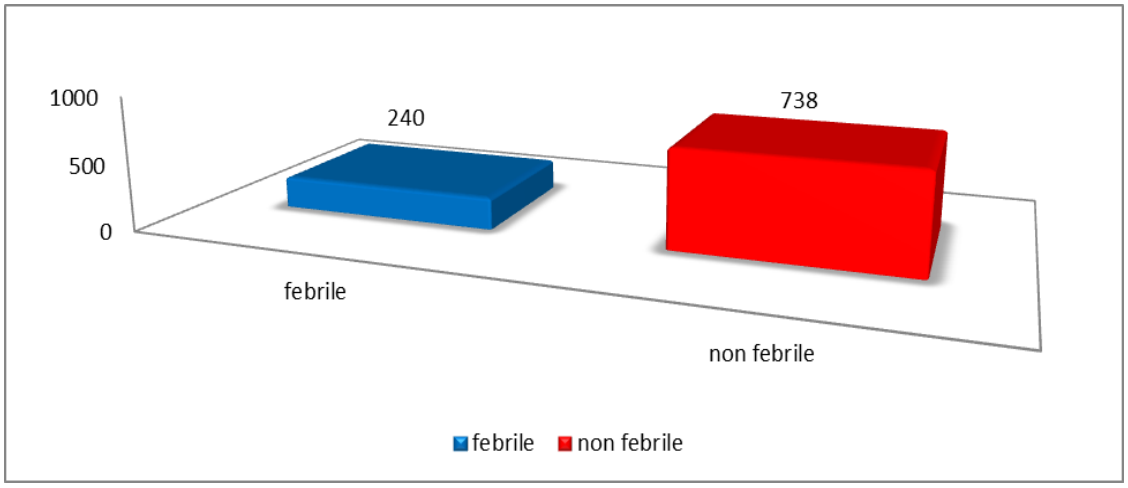


Chart: 5: The Vital Signs That Are Changed In Liver Disease Patients.

Out of 978 patients 240 patients are having fever and 738 patients are non febrile. Only 24.5% of the patients are febrile.

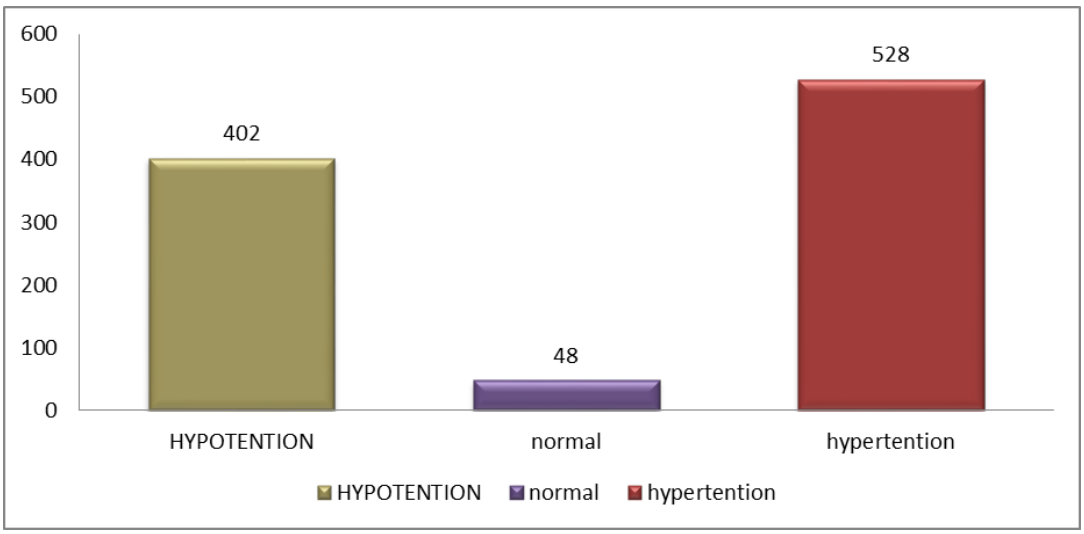


Chart: 6: blood pressure changes in patients.

CHART: 6: Blood pressure in ALD and NAFLD patients

41.1% of the total patients are hypotensive and 53.9% of total are hypertensive. This states that 4.9% of total are only having the normal blood pressure.

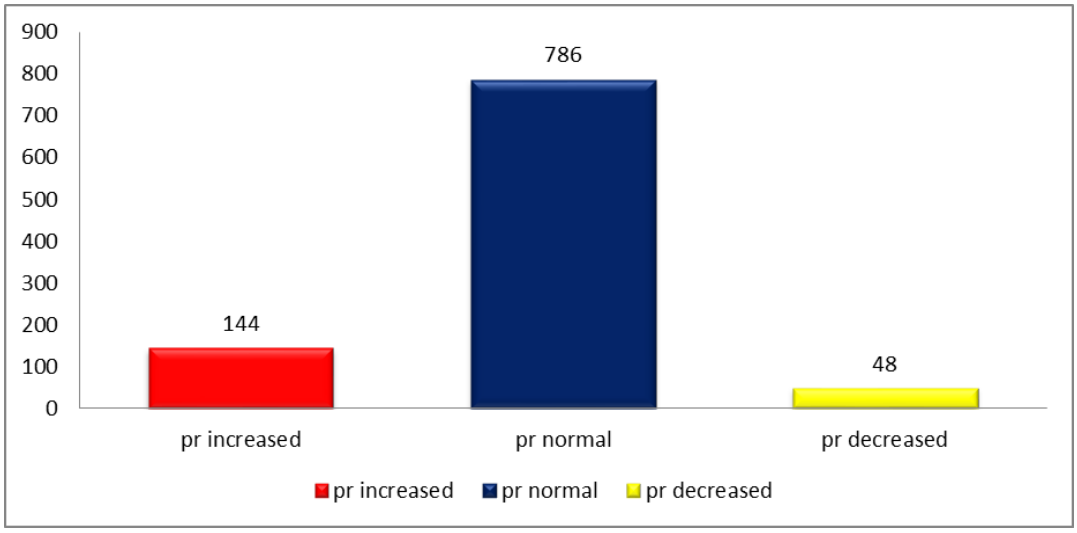


Chart: 7: pulse rate variation in hepatic disease.

14.7% of all the patients were having increased pulse rate, 4.9% were having decreased pulse rate.

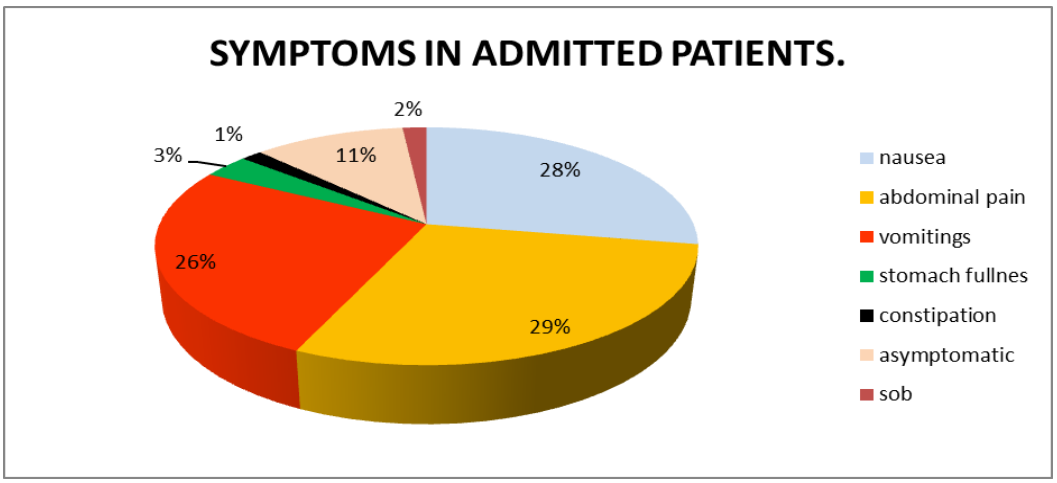


Chart: 8: symptoms in admitted patients.

The symptoms that occurred to the patients who are admitted in the hospital

The most common symptoms that occurred due to the liver diseases in patients are calculated as the data collected. The common symptoms in ALD and NAFLD are nausea, abdominal pain, vomiting, stomach fullness, constipation, asymptomatic, shortness of breath etc.

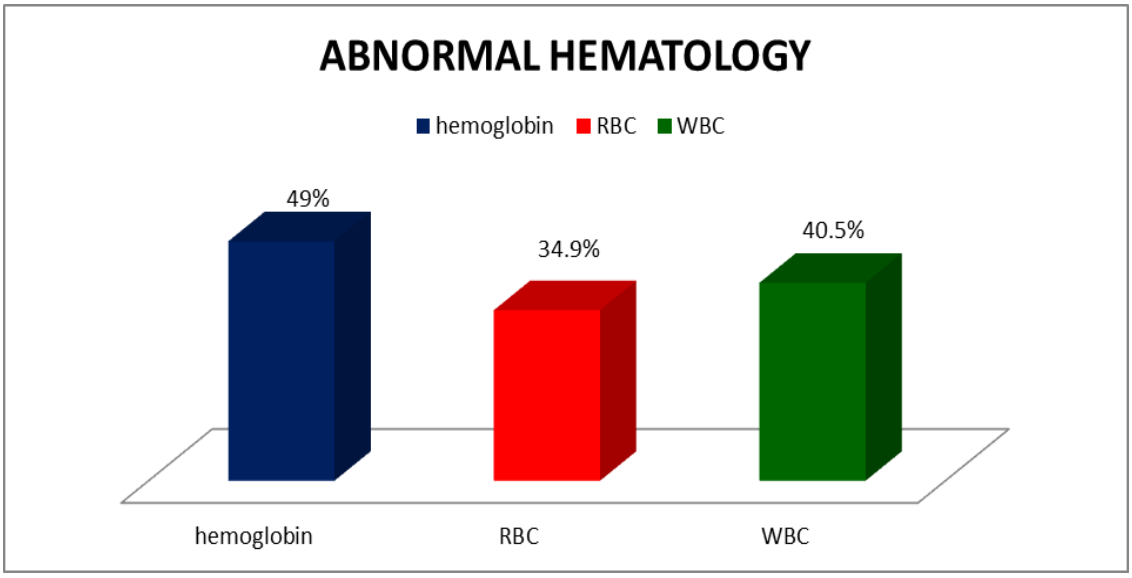


Chart: 9: abnormal hematology.

CHART: 9: abnormal hematological rate in ALD and NAFLD patients.

The abnormal ranges of blood cells were determined from the collected diagnosis reports. The fluctuations in the blood cells were seen in the liver impaired patients.

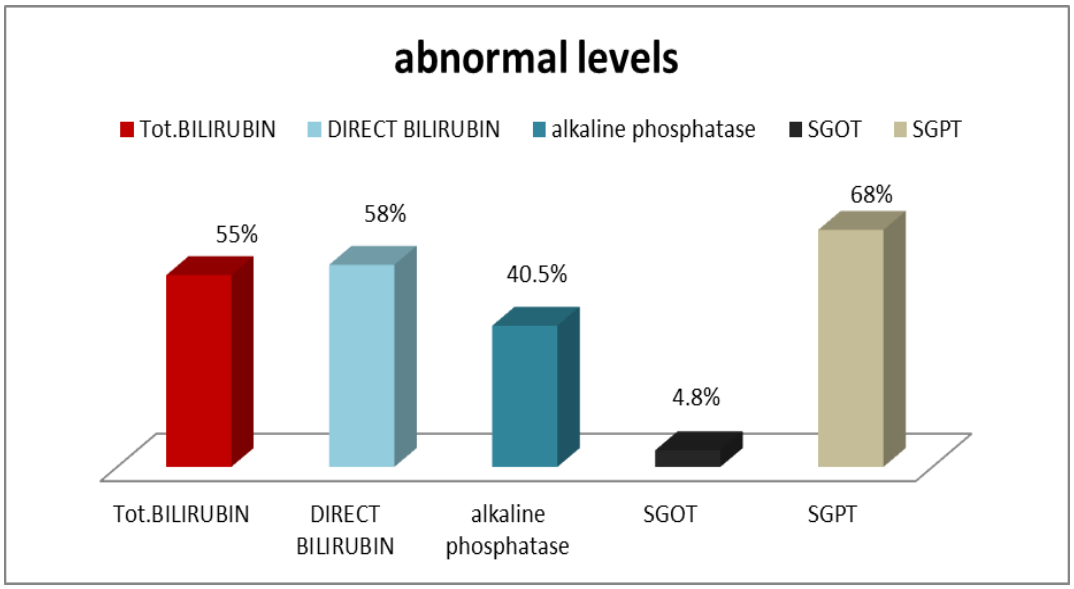


Chart: 10: Patients with Abnormal Liver Enzymes.

The chart shows the percentage about the patients who are having elevated levels of liver enzymes. As the liver damage is done there are elevated levels in the patients as per the data collected.

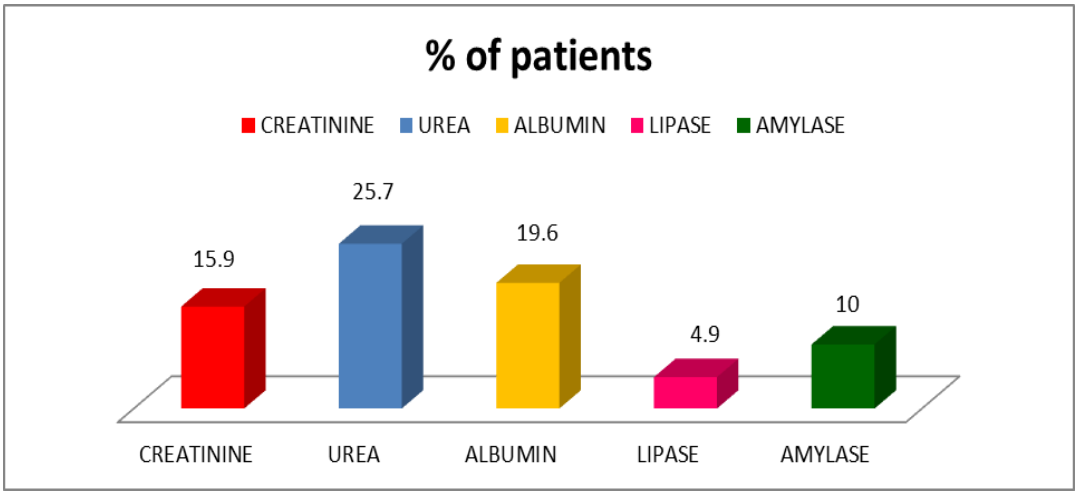


Chart: 10: abnormal levels of serum enzymes.

Huge increase in the levels of the serum creatinine, urea, albumin, lipase, and amylase. In ALD and NAFLD there is large increase in the serum enzymes.

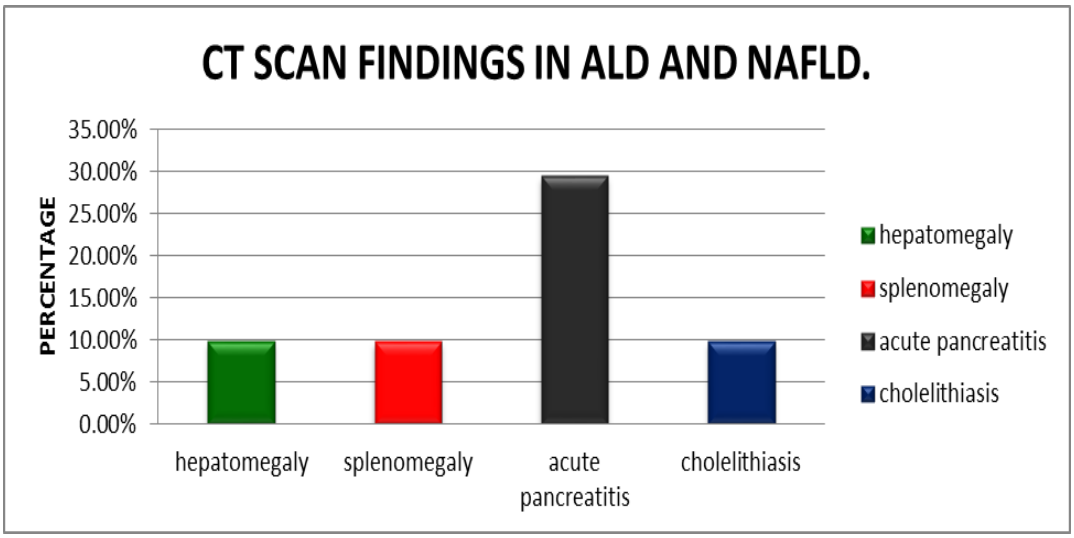


Chart: 11: CT scans of abdomen in ALD and NAFLD.

CT scan of most of the ALD and NAFLD were hepatomegaly, splenomegaly, acute pancreatitis, cholelithiasis were most commonly observed. The acute pancreatitis is most common for the alcoholic patients as per the data.

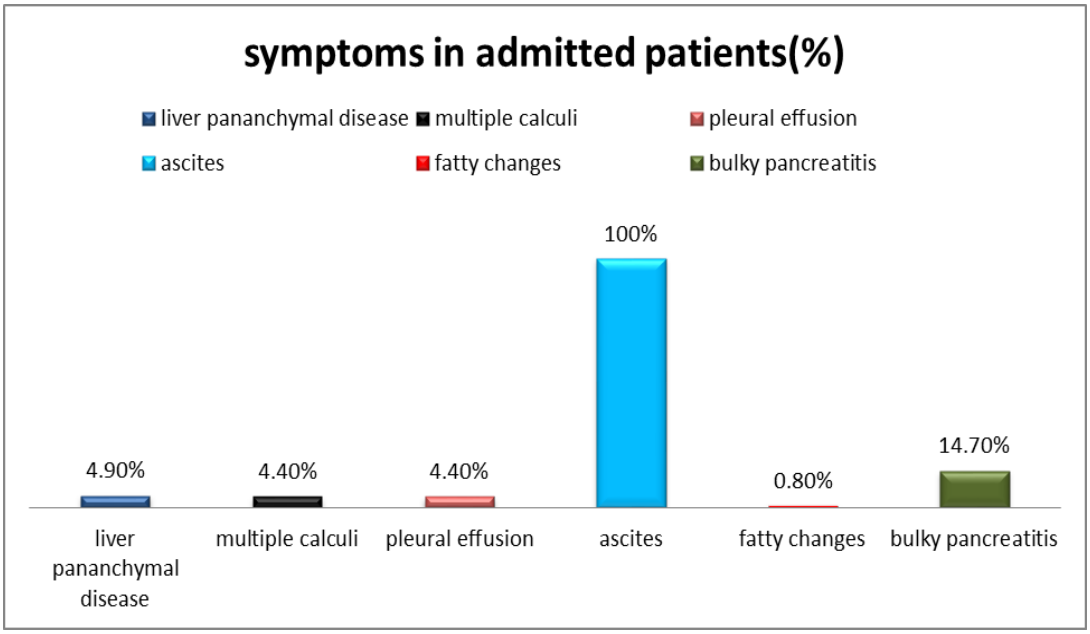
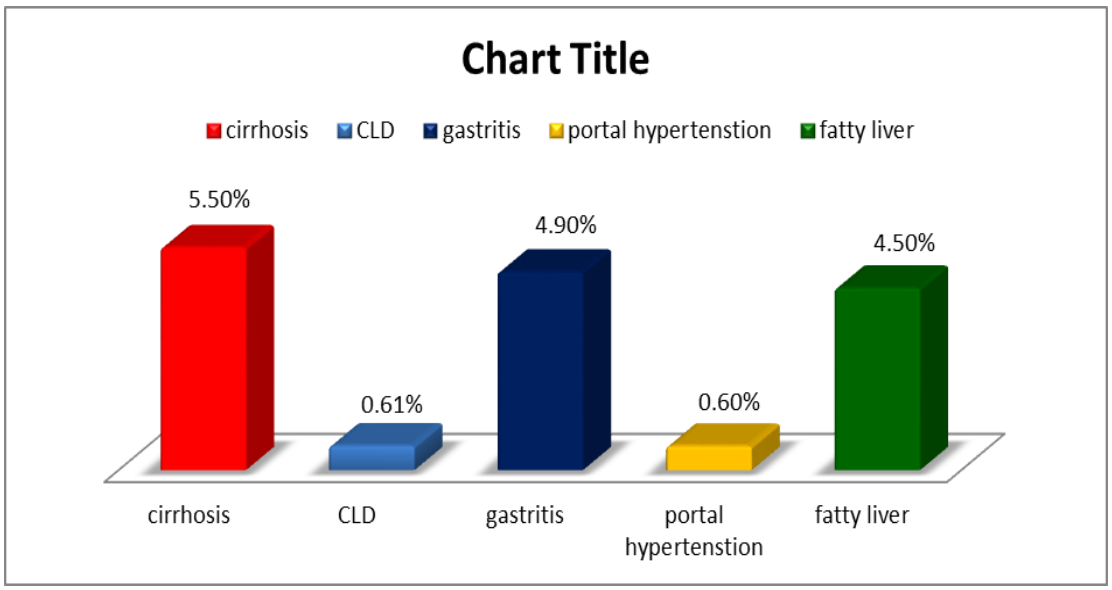


Chart: 12: ULTRA scans impressions of ALD and NAFLD.

The change in the liver tissue is seen as liver parenchymal disease 4.90% of total 978 patients, multiple calculi 4.40%, pleural effusion 4.40%, ascites100%, fatty changes 0.80% and bulky pancreatitis 14.70%. The incidence for ascites in ALD and NAFLD is the prevalent.

CHART: 13: COMMON DISEASES THAT ARE CAUSED DUE TO ALCOHOL

The highest rate of occurrence of ALD is cirrhosis, gastritis, and fatty liver. The less incidence of occurring is chronic liver disease and portal hypertension.



DISCUSSION

before considering the present series of 978 patients with liver diseases, it may be useful to review some of the pertinent literature concerned with inter relationships of vital signs, symptoms, alcoholism and diseases like acute pancreatitis, cholenthiasis, cirrhosis, chronic liver disease, gastritis, fatty liver etc. In considering the risk of alcohol in ALD a distinction should be made between those cases in which liver impairment is caused by alcohol and those in which alcohol is not the cause for liver impairement. Although it has been well documented that alcohol may antedate the development of ALD.

Total patients participated in our study were divided into groups based on the study. The study assessed the causes of liver diseases, age group that is mostly affected by liver impairement, most common alcoholic diseases, the symptoms that are present in the patient during admission, the changes in the vital signs of patients in hospital, the risk of alcohol intake in patients, quantity that is leading to damage the liver and changes in the liver tissue in CT and ULTRA scan.

In the total patients the age groups that are mostly affected with the liver disease is 21-30 years with 240 patients. The second highest age group is 51-60 with 204 patients(chart-1). The second group was distribution of patients based on their gender(chart-2). the prevalence of liver disease was considerably greater in men than in women of total 978 patients participated in the study 780 patients were male and 198 patients were female.

The quantity and number of alcoholics (chart-3). the number of NAFLD patients were 246 of 978 patients. The rare alcoholic patients were 48. The most affected patients of all were regular alcoholic. The counts of regular alcoholic were 588. The chronic alcoholics were 96 patients. The risk of 20.2% was assessed in the people who were smokers are having liver diseases (chart-4). Out of 978 patients 240 patients are having fever (chart-5).

Out of 978 patients only 48 patients are having normal BP 402 patients were having hypotension and 528 patients were having hypertension(chart-6). the pulse rate is increased in 144 patients and decreased in 48 patients (chart-7). the major symptoms that were presented in patients as reasons for admissions are nausea, abdominal pain, vomiting, stomach fullness, constipation, asymptomatic, shortness of breath(chart-8). the patients of abnormal hematology were 49% patients were having abnormal RBC, 34.9% with abnormal RBC, 40.5% with abnormal WBC. (chart-9).

CT scan changes in 978 patients were noted as hepatomegaly, splenomegaly, acute pancreatitis, cholelithiasis. The ULTRA scan findings were liver parenchymal disease, multiple calculi, pleural effusion, ascites, fatty changes, and bulky pancreas.(chart 11 and 12). finally the most common ALD in patients were cirrhosis, CLD, gastritis, portal hypertension, fatty liver(chart-13).

CONCLUSION

In this study 978 patients with liver diseases were studied by evaluating the causes for the liver damage bases on the diagnostic reports. The effect of the alcohol that lead in the progression of liver damage in the stages of fatty liver to liver fibrosis and then to cirrhosis. The number of patients and their stages of liver damage are been determined based on their lab reports and scanning.

The incidence of liver disease was found to more in male than female of 4:1ratio.The incidence of liver disease was found to be higher in the age group of 21-30 years. The vital signs like blood pressure and pulse rate are varied in the patients. The temperature are even fluctuating in every patient. This was clearly noted on the basis of the data collected. The major symptoms which are the cause for admission in the hospital were noted as nausea-90%, abdominal pain-94%, vomiting-85%. asymptomatic-35%, stomach fullness-10.5%, shortness of breath-5.5%, constipation-4.9%. The diagnostic abnormalities of vital signs like B.P and pulse were abnormal in patients, hemoglobin, RBC and WBC levels has been changed both in ALD and NAFLD patients. The electrolytes like sodium, potassium and chloride were disturbed at rate of 55%, 26% and 15% respectively by overall patients. The serum enzymes like creatinine, urea, albumin, lipase, and amylase scattered to abnormal at the rate of 16%, 25%, 19.6%, 4.9%, and 10% respectively. The liver functioning enzymes are elevated in total bilirubin-55%, direct bilirubin-58%, SGPT-60%, SGOT-4.8%, alkaline phosphatase-40.5%. the scanning reports of CT and ULTRA scanning shows the features like: ascites-100%, bulky pancreas-14.7%, liver parenchymal disease-4.4%, acute pancreatitis-29.5, cholelithiasis-9.8%, chronic liver disease-0.61%, gastritis-4.9%, hepatomegaly-9.8%, bulky pancreatitis-14.7%, cirrhosis-5.5%, splenomegaly-9.8%, fatty liver-4.4%, multiple calculi-4.4%, pleural effusion-4.4%, portal hypertention-0.6%, bulk pancreas-4.4%, fatty changes-0.8% were been noted as per the data. The most common alcoholic liver diseases are found to be cirrhosis-5.5%, gastritis-4.4%, fatty liver-4.5%, chronic liver disease-0.61%, portal hypertention-0.6%.

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