ORIGINAL RESEARCH PAPER

General Medicine

VALIDITY OF CONVENTIONAL SIGNS OF CHRONIC LIVER DISEASE: OBSERVATIONAL STUDY

KEY WORDS: CLD (Chronic liver disease), NAFLD (non alcoholic fatty liver disease)

Manish Sharma Associate Professor, Department Of Medicine, Gajra Raja Medical College, Gwalior,M.P., India

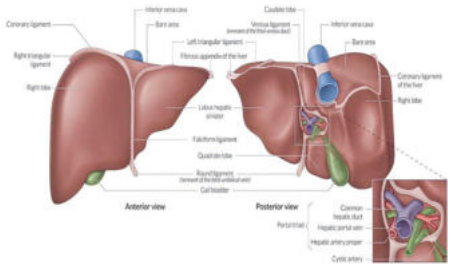
Vipin Kumar Meena Junior Resident, Department Of Medicine, Gajra Raja Medical College, Gwalior, M.P., India

ABSTRACT

Background : Chronic liver disease (CLD) is a hterogeneous group of conditions characterized by ongoing hepatic inflammation, injury, and progressive fibrosis. The most common aetiologies of CLD include alcoholic liver disease (ALD) and non alcoholic fatty liver disease (NAFLD), with other contributing factors such as viral hepatitis, autoimmune diseases, and metabolic disorders. these patients may present with many symptoms like abdominal distension, jaundice, pedal edema, weakness, fatigue etc. **Objectives :** to study the prevalence of various signs and symptoms of CLD patients **Patients And Methods:** The present study Was carried out in the Department of Medicine in J.A. Group of Hospitals, Gwalior by the Team of trained residents under the guidance of senior consultant, on in and outpatient Of CLD. **Conclusion:** The most frequent clinical features at presentation were ascites and splenomegaly , indicating significant liver dysfunction.Weight loss was significantly more common in ALD patients compared to NAFLD .

INTRODUCTION

Chronic liver disease (CLD) is a heterogeneous group of conditions characterized by ongoing hepatic inflammation, injury, and progressive fibrosis[1]. The most common aetiologies of CLD include alcoholic liver disease (ALD) and non alcoholic fatty liver disease (NAFLD), with other contributing factors such as viral hepatitis, autoimmune diseases, and metabolic disorders. Early diagnosis and intervention in CLD are crucial for preventing irreversible liver damage, reducing complications, and improving patient outcomes.



Liver Anatomy And Physiology : The liver, the largest internal organ in the human body, is a complex and vital organ located in the upper right quadrant of the abdomen. Encased within a fibrous capsule known as Glisson's capsule, the liver is divided into four distinct lobes: the right, left, caudate, and quadrate lobes. These lobes are further subdivided into functional units called lobules, which are hexagonal structures comprised of hepatocytes, the primary liver cells, arranged in cords radiating from a central vein .

Hepatocytes are the workhorses of the liver, responsible for executing a multitude of essential functions. They play a crucial role in metabolism, facilitating the synthesis, breakdown, and storage of carbohydrates, lipids, and proteins. The liver also serves as a detoxification centre, processing and eliminating waste products, drugs, and toxins from the body. Additionally, hepatocytes synthesize essential proteins, such as albumin and clotting factors, as well as bile, which aids in the digestion and absorption of fats. The liver also acts as a storage depot for various vitamins and minerals, including iron, copper, and vitamins A, D, and B12 .Within the liver lobule, sinusoids are specialized blood vessels that lie between the cords of hepatocytes. These sinusoids receive blood from both the hepatic artery (oxygenated blood) and the portal vein (nutrient-rich blood from the intestines). This unique dual blood supply allows hepatocytes to efficiently process and modify the incoming blood, extracting nutrients, removing toxins, and synthesizing essential molecules. The bile produced by hepatocytes is secreted into small bile canaliculi, which merge into larger bile ducts, ultimately draining into the gallbladder for storage and later release into the small intestine. Crucially, hepatocytes are also responsible for the production and release of liver enzymes, including aspartate aminotransferase (AST) and alanine aminotransferase (ALT), which are key biomarkers for assessing liver health and diagnosing liver diseases.

symptoms observed in patients of CLD were abdominal distension , pedal edema , and jaundice .These findings align with classic manifestations of advanced liver disease, reflecting impaired hepatic function and portal hypertension. Abdominal distension often results from ascites, a common complication of cirrhosis, while pedal edema signifies fluid retention due to hypoalbuminemia and decreased oncotic pressure. Jaundice, the yellowing of skin and eyes, arises from elevated bilirubin levels due to impaired hepatic excretion. splenomegaly is characteristic of portal hypertension, a hallmark of advanced liver disease. portal hypertension arises from increased resistance to blood flow through the liver, leading to collateral circulation, splenic congestion, and fluid accumulation in the peritoneal cavity. the high prevalence of these findings in our cohort aligns with other studies on cld, where ascites and splenomegaly are frequently reported, particularly in patients with cirrhosis (williams and hoofnagle[1] (1988), nyblom et al. (2004). other common clinical findings included pallor , and abdominal veins . pallor often reflects anemia, which can be a consequence of chronic liver disease due to impaired hematopoiesis and blood loss. Icterus , as mentioned earlier, is a manifestation of hyperbilirubinemia, while abdominal veins may indicate the development of collateral circulation due to portal hypertension.

Aims And Objectives

to study the prevalence of various signs and symptoms of CLD patients

Patients And Methods

The present study Was carried out in the Department of Medicine in J.A. Group of Hospitals, Gwalior By Team of trained residents under the guidance of senior consultant on in and outpatient Of CLD from AUGUST 2022 to MARCH 2024.

Sample Size - 100 patients

Inclusion Criteria:

1. Patients age 18 years and above with DIAGNOSED CASES OF CHRONIC LIVER DISEASE . Diagnosed on the basis of combination of history, clinical findings, LIVER FUNCTION TESTS(LFT) ,USG WHOLE ABDOMEN, ASCITIC FLUID R/M ,URINE R/M CBC and RFT.

Exclusion Criteria:

1. Patients suffering from other comorbid illness like chronic kidney disease, cardiac illness or other systemic illnesses.
2. Patients suffering from any kind of benign/malignant tumor.

Statistical Analysis:

Statistical Analysis shall be done using SPSS 2.0 and graphs shall be generated by Microsoft Excel and Word. p value of less than 0.05 shall be considered significant

OBSERVATION AND RESULTS

Distribution Of Patients According To The Age Group

The largest proportion of patients (37%) falls within the 41-50 years age group, followed by the 51-60 and ≥61 groups, each representing 15% of the total sample. The youngest age 35 group (≤30) and the 31-40 group each account for 14% and 15% of the patients, respectively. The sample includes a total of 100 patients.

Distribution Of Patients According To The Gender

Out of the 100 patients in the sample, a majority (86%) were male, while 14% were female. This Indicates a male predominance in the study population.

Distribution of patients according to the clinical findings observed in CLD patients

Table 1

S No	Clinical findings	No of Patients	Percentage
1	Ascites	90	90.0
2	Splenomegaly	81	81.0
3	Pallor	66	66.0
4	Icterus	67	67.0
5	Average built	52	52.0
6	Abdominal veins	45	45.0
7	Clubbing	39	39.0
8	Bleeding tendencies	13	13.0
9	Asterixis	12	12.0
10	Hepatomegaly	3	3.0
11	Raised JVP	2	2.0
12	Murmur	0	0.0

Table 1 summarizes the clinical findings observed in the patient cohort. Ascites was the most common finding present in 90% of patients, followed closely by splenomegaly (81%). Pallor and icterus were also frequently observed, with 66% and 67% of patients exhibiting these signs, respectively. Over half of the patients (52%) were of average build, while abdominal veins and clubbing were noted in 45% and 39% of patients, respectively. Less common findings included bleeding tendencies (13%), asterixis (12%), hepatomegaly (3%), and raised jugular venous pressure (JVP) (2%). No patients presented with a murmur. This distribution highlights the high prevalence of signs and symptoms associated with advanced liver disease, such as ascites and splenomegaly.

The clinical presentation of CLD in our study was dominated by ascites (90%) and splenomegaly (81%). These findings are characteristic of portal hypertension, a hallmark of advanced liver disease. The high prevalence of these findings in our cohort aligns with other studies on CLD, where ascites and splenomegaly are frequently reported, particularly in patients with cirrhosis (Williams and Hoofnagle[2] (1988). Other common clinical findings included pallor (66%), icterus (67%), and abdominal veins (45%). Pallor often reflects anemia, which can be a consequence of chronic liver disease due to impaired hematopoiesis and blood loss. Icterus, as mentioned earlier, is a manifestation of hyperbilirubinemia, while abdominal veins may indicate the development of collateral circulation due to portal hypertension.

Distribution Of Patients According To The Etiology Of Cld And Clinical Features

Table 2

Clinical features	Group					Chi square value	P value
	Alcoholic Liver Disease	NASH	Viral Hepatitis	Autoimmune Hepatitis	Cardiac Cirrhosis		
	N (%)	N (%)	N (%)	N (%)	N (%)		
Weight loss	25 (44.6)	6 (19.4)	3 (27.3)	0 (0.0)	0 (0.0)	7.042	0.134
Abdominal distension	48 (85.7)	25 (80.6)	11 (100.0)	1 (100.0)	1 (100.0)	2.858	0.582
Breathlessness	23 (41.1)	17 (54.8)	2 (18.2)	1 (100.0)	1 (100.0)	7.194	0.126
Hematemesis	6 (10.7)	2 (6.5)	0 (0.0)	0 (0.0)	0 (0.0)	1.792	0.774
Malena	6 (10.7)	1 (3.2)	0 (0.0)	0 (0.0)	0 (0.0)	2.844	0.584
Jaundice	33 (58.9)	20 (64.5)	8 (72.7)	0 (0.0)	0 (0.0)	4.026	0.402
Altered sensorium`	15 (26.8)	4 (12.9)	5 (45.5)	0 (0.0)	0 (0.0)	5.739	0.220
Pedal edema	47 (83.9)	25 (80.6)	8 (72.7)	0 (0.0)	1 (100.0)	5.301	0.258
Chest pain	3 (5.4)	2 (6.5)	1 (9.1)	0 (0.0)	1 (100.0)	13.681	0.008
Generalized weakness	20 (35.7)	15 (48.4)	6 (54.5)	0 (0.0)	1 (100.0)	4.243	0.374
Abdominal pain	24 (42.9)	18 (58.1)	5 (45.5)	0 (0.0)	1 (100.0)	3.886	0.422

Table 2 presents the distribution of various clinical features across different etiologies of chronic liver disease (CLD), including alcoholic liver disease (ALD), non-alcoholic steatohepatitis (NASH), viral hepatitis, autoimmune hepatitis, and cardiac cirrhosis. The chi-square test was used to assess the association between clinical features and CLD etiology.

Key Findings:

Chest Pain: A significant association was found between chest pain and CLD etiology ($p = 0.008$). Specifically, a higher proportion of patients with cardiac cirrhosis (100%) reported chest pain compared to other groups.

The most common symptoms observed in our study population were abdominal distension (86%), pedal edema (81%), and jaundice (61%). These findings align with classic manifestations of advanced liver disease, reflecting impaired hepatic function and portal hypertension. For instance, **Kolhe et al**[3]. (2019) reported a similar frequency of abdominal distension (86%) in their study on non-alcoholic fatty liver disease (NAFLD), while **Gurung et al**[4]**.** (2013)noted jaundice in 61% of their alcoholic liver disease (ALD) patients.

CONCLUSION

The most frequent clinical features at presentation were ascites (90%) and splenomegaly (81%), indicating significant liver dysfunction. Weight loss was significantly more common in ALD patients (44.6%) compared to NASH (20.5%) ($p = 0.011$), suggesting a potential differentiating factor between the two etiologies. pallor (66%), icterus (67%), and abdominal veins (45%). most common symptoms observed in our study population were abdominal distension (86%), pedal edema (81%), and jaundice (61%).No other clinical feature showed significant differences between groups, although chest pain was notably associated with the single

patient with cardiac cirrhosis

REFERENCES

1. Standring S, Gray H, editors. Gray's anatomy: the anatomical basis of clinical practice. Forty-second edition. Amsterdam: Elsevier; 2021. 1588 p.
2. Williams AL, Hoofnagle JH. Ratio of serum aspartate to alanine aminotransferase in chronic hepatitis. Gastroenterology. 1988 Sep;95 (3): 734–9.
3. Kolhe KM, Amarapurkar A, Parikh P, Chaubal A, Chauhan S, Khairnar H, et al. Aspartate transaminase to platelet ratio index (APRI) but not FIB-5 or FIB-4 is accurate in ruling out significant fibrosis in patients with non-alcoholic fatty liver disease (NAFLD) in an urban slum-dwelling population. BMJ Open Gastroenterol [Internet]. 2019 Jun [cited 2024 Jun 28];6(1):e000288. Available from: 000288
4. Gurung RB, Purbe B, Gyawali P, Risal P. The ratio of aspartate aminotransferase to alanine aminotransferase (AST/ALT): the correlation of value with underlying severity of alcoholic liver disease. Kathmandu Univ Med J (KUMJ). 2013;11(43):233–6.