Original Research Article

A study on clinical, etiological and laboratory profile in patients with jaundice at a tertiary care centre in south bihar

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Abstract

Introduction: Jaundice is a major components of the syndrome of liver failure, which can be acute, subacute or chronic. Subacute and chronic liver failure are well-recognized syndromes with known causes of liver disease. While viral hepatitis and acetaminophen overdose are major causes of acute liver failure, there are many other infections and non-infectious causes that can mimic this presentation especially in a tropical country like India.

Aim and objective: To study the clinical profile, etiology and laboratory findings in different patients with jaundice. **Methodology:** An observational study was conducted in General Medicine department in Narayan Medical College and Hospital, Jamuhar. Total 100 patients were selected from OPD and IPD of Narayan medical college and hospital with jaundice being treated and fulfilled inclusion and exclusion criteria. The study was conducted between Dec 2019 to June 2020. **Result:** Most common cause of jaundice came out to be viral hepatitis making a total of 60 cases (60%), with 23 cases of females (23%) and 37 cases of males (37%). Among the viral hepatitis the highest number of cases were of HEV (26%), followed by HBV (21%), HAV(16%) and HCV(1%). Next most common cause of jaundice came out to be Malaria (12%), Dengue (5%), and drug induced hepatitis (15%).**Conclusion:** Jaundice is very common disease with male predominance, varied etiology most common being viral hepatitis, Alcoholic liver diseases. Most common presentation is anorexia followed by myalgia, fatigue.

Keywords: Jaundice, viral hepatitis, SGOT, SGPT.

Introduction

Jaundice is a common problem in both medical and surgical practice. It is classified into three types: Pre-hepatic or hemolytic, Hepatic or hepatocellular and Post-hepatic or cholestatic or obstructive jaundice. For best possible results, differentiation between types of jaundice is very important so as to decide the line of expectant management.

A carefully elicited history and clinical examination with judicious selection of diagnostic tests and procedures can lead to a quick diagnosis. Also, by weighing their relative risk and efficacy, the physician can better ensure the comfort, safety and the cost effectiveness of medical care.[1]

Jaundice is a major component of the syndrome of liver failure, which can be acute, subacute or chronic. Subacute and chronic liver failure are well-recognized syndromes with known causes of liver disease. While

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viral hepatitis and acetaminophen overdose are major causes of acute liver failure, there are many other infections and non-infectious causes that can mimic this presentation especially in a tropical country like India.[2]

Themechanisms involved in hepatic dysfunction are obscure.Nitric oxide is implicated in liver injury under variouspathologic conditions. Derangement of liver functions injaundice has been known to influence surgicaloutcome. Liver function testsby themselves do not contribute to etiology or the lesionsleading to surgical obstructive jaundice, and other radiologicand endoscopic investigations are necessary before surgical treatment. None of the liver function test enablesthe surgeon to accurately assess the functional capacityof the liver while investigations recommended should be performed in a standardized manner.[3]

HAV is the most common cause of acute hepatitis in paediatric age group (1–3 years). But, there has been a gradual shift in the age of acquiring the infection from early childhood to adulthood in different parts of the world.HBV is a cause of about 15-30% of acute hepatitis in India. On the other hand, HCV causes most cases of post transfusion hepatitis. Acute infections by HCV is usually benign and asymptomatic. Clinically, it has remarkable ability to persist and produce chronic and irreversible liver damage.HEV is one of the leading causes of hepatitis worldwide. Most of the outbreaks of waterborne hepatitis in India have been attributed to HEV. HEV affects young to middle aged adults and causes high mortality in pregnant women, 20– 30% as compared to 0.2–1% in generalPopulation[4]

Chronic liver disease (CLD) refers to a wide spectrum of disorders characterized by ongoing liver damage with a potential for progression to cirrhosis or end stage liver disease. CLD implies long standing liver disease (usually 3-6 months), leading to various manifestations and complications of liver cell failure.[5]

An accurate diagnosis can usually be made with combination of different approaches like, history, physical examination, and biochemical tests, radiological and histopathological test and observation of the patient's course. Early and precise detection of etiology of jaundice can help physician to accurately manage such patients and thus will improve quality of life of patient and improving the survival rates among the patients. Hence, present study was undertaken in the above background to study the clinical,Etiological and Laboratory profile of patients with jaundice with following aim and objectives.

Aims and Objectives

To study the clinical profile, etiology and laboratory findings in different patients with jaundice.

Material and Methods

An observational study was conducted in General Medicine department in Narayan Medical College and Hospital,Jamuhar. Total 100 patients were selected from OPD and IPD of Narayan medical college and hospital with jaundice being treated and fulfilled inclusion and exclusion criteria. The study was conducted between Dec 2019 to June 2020.

Inclusion criteria

- All patient getting treated in both OPD and IPD
- Age >18 years
- Willing to participate in this study

Exclusion criteria

- Pts. With Carotenoderma

Ethical clearance from college Institutional Ethics Committee was obtained. Informed verbal and written consent was obtained from patients to take part in the study. Predesigned questionnaire was used for collecting data.The data of all patients - i.e. detailed history, clinical examination, laboratory and radiological investigation were collected and analysed. Patients were also inquired about alcohol consumption and hygiene. The patients were subjected to the routine laboratory tests like complete blood count, peripheral blood smear, blood sugar, liver function tests, renal function tests and urine routine and microscopy. The serological confirmations of viral hepatitis done for anti HAV immunoglobulin M (IgM), hepatitis B surface antigen (HBsAg), IgM against HCV; anti HEV IgM. Whenever indicated, patients underwent ultrasound examination of abdomen to study radiological features of viral hepatitis or cirrhosis.

The lab investigation tests were carried out by collecting 3.5ml of venous blood in aseptic condition in a dry and labelled vial. Serum was separated from the clotted blood within 4 hrs. Serum sample was stored at 48 degrees Celsius for maximum of 7days.

Biochemical tests included serum AST (aspartate amino transferase), serum ALT (alanine amino transferase), Total bilirubin, conjugated and unconjugated bilirubin, total protein, albumin, globulin, A/G ratio, cholesterol levels.

Result

We conducted our study on 100 patients of jaundice, 66(66%) of them were males. Mean age of study subjects were 34.86±10.59 yrs, Male were in the age group of 36.12±9.69 yrs whereas female were in the age group 32.41±11.93 yrs. Most common cause of

jaundice came out to be viral hepatitis making a total of 60 cases (60%), with 23 cases of females (23%) and 37 cases of males (37%). Among the viral hepatitis the highest number of cases were of HEV (26%), followed by HBV (21%), HAV(16%) and HCV(1%). Next most common cause of jaundice came out to be Malaria (12%), Dengue (5%) , and drug induced hepatitis (15%).

In our study anorexia came out to be the most common symptom, found in 86 patients (86%). It was followed by myalgia (64%), fatigue (67%) and abdominal pain (38%).

In our study Hepatomegaly was found in 33 patients (33%) followed by splenomegaly (8%).

The practice of handwashing with soap after defaecation and before meals (less than 24%) was low in patients of HAV and HEV than others.Among the risk factors HAV and HEV was found to be associated with poor hygienic habits. Patients of HAV and HEV used less than 54% covered water storage andreliable water source (hand pump and well was the most common water source in them) which is lower than other etiologies. Only 12 patients (12%) among the studied patients used purified water for drinking purposes.

Chronic alcohol consumption was affirmed by all the 6 patients diagnosed as cases of alcoholic liver disease. 91 patients (91%) had their SGOT raised above 40 IU/L. Among the 9 below 40 IU/L, 5 patients were diagnosed to have haemolytic anaemia. SGPT of 87 patients (87%) was above 40 IU/L.

Table 1: Laboratory parameters of study subjects as per the etiology

Etiology	No	Total bilirubin	SGPT	SGOT	Alk phosphatase	Platelet
HEP A	16	10.5±1.303	374±78.86	473±163.79	149.85±156.60	54923±27706.9
HEP B	21	13.2±0.468	229.95±331.45	172.05±195.77	129.64±139.32	45781.8±29372.5
HEP C	1	5.7±3.86	273±61.36	165.30±148.51	128.6±115.33	49800±24096.1
HEP E	26	7.80±0.707	315±27.78	218±56.57	78	41000±18384.7
Malaria	12	4.3±0.704	74.0±56.76	61.0±23.74	173.13±175.46	1,25,400±12401.6
Dengue fever	5	3.1±0.862	84.59±259.22	91.47±162.51	124.88±151.2	31122.8±11616.3
Drug induced hepatitis	6	6.7±0.577	125.33±31.37	146±77.58	176.33±4.93	66333.33±18475.2
ALD	6	3.93±0.577	143.33±51.08	131.67±49.79	173.67±22.12	16666.7±9865.8
CLD	4	4.33±0.42	79.33±21.38	407±68.71	81.53±28.34	86500
ACLF	2	8.2±2.37	114±33.42	98±23.41	147±39.58	97000
Gilbert syndrome	1	3.5	30	25	98	2,01,000

Table 2: Symptoms of Jaundice as per the etiology

Etiology	no	Fatigue	Myalgia	Abdominal pain	Anorexia	Wt loss
HEP A	16	13	11	6	16	4
HEP B	21	16	17	9	19	7
HEP C	1	1	0	0	1	0
HEP E	26	19	21	7	21	2
Malaria	12	3	4	1	8	0
Dengue fever	5	5	5	4	4	0
Drug induced hepatitis	6	2	2	4	6	1
ALD	6	3	2	5	5	2
CLD	4	3	1	1	4	0
ACLF	2	2	1	1	2	1
Gilbert syndrome	1	0	0	0	0	0
Total	100	67	64	38	86	17

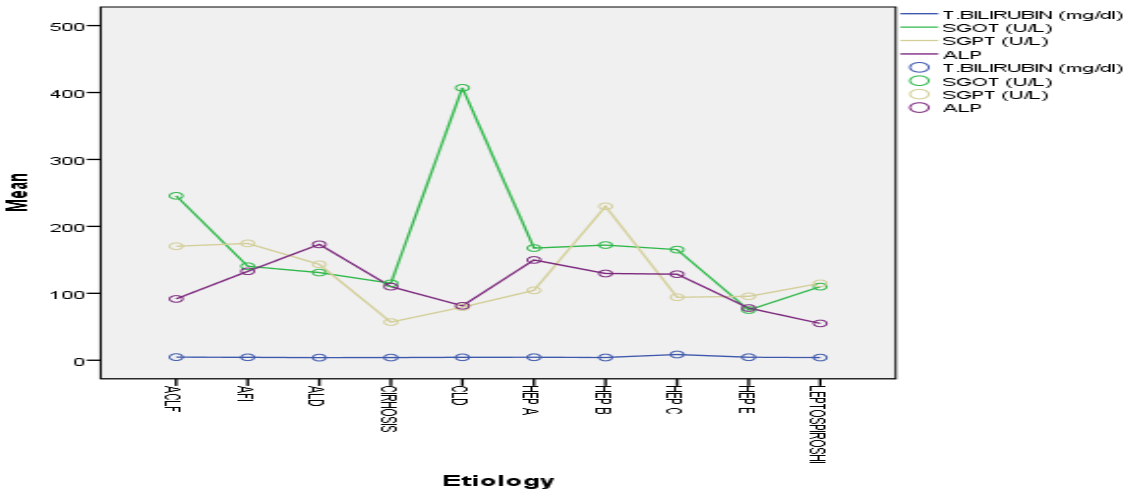

Fig 1: Mean of different laboaratory parameters as per etiology of Jaundice

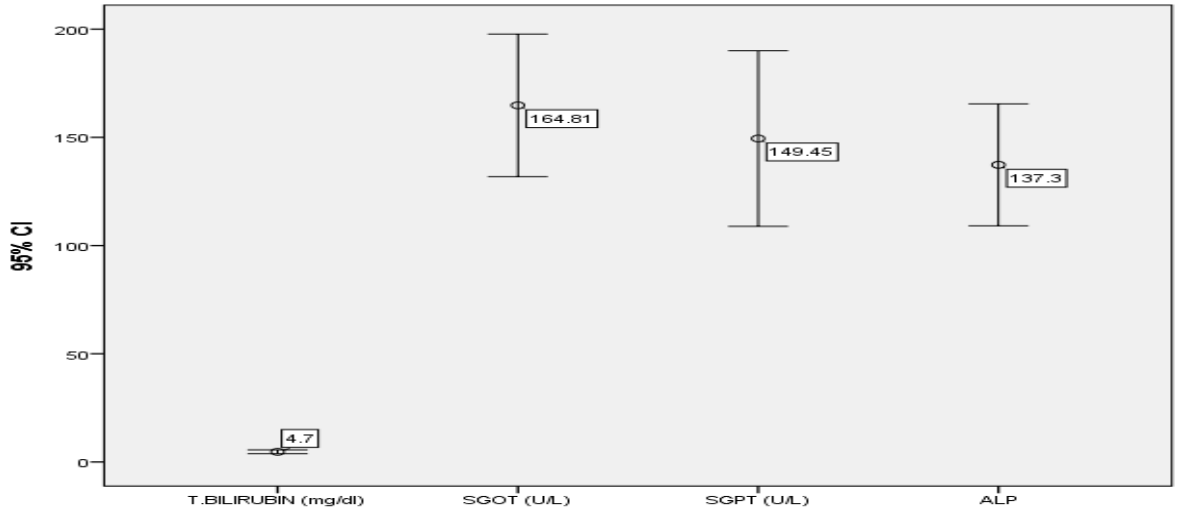

Fig 2 :Error graph representing the different laboratory parameter

Discussion

Our study was male dominated with male to female ratio was 1.94. This has been attributed to males being more involved in outdoor activities and assignments especially in rural areas.Lamba S et al [4], Chauhan S et al[1], also made similar observations. The most common aetiology behind jaundice came out to be viral hepatitis. Many studies have been conducted in past to study prevalence of HAV, HBV, HCV and HEV. Study by LambaS et al[4] found similar results with predominance of Hep A cases in Jaundice.Similar results seen by Acharya SK et al[6] and Chandra NS et al[7]. However study done by Dabadghaoet al[8] found among forty hepatitis cases, majority were hepatitis E (45%), followed by hepatitis A, hepatitis B and hepatitis C.

In our study anorexia came out to be the most common symptom, found in 68 patients (68%). It was followed by myalgia (63%), fatigue (62%) and abdominal pain (28%). Study by LambaS et al[4] shows the most common symptom was fatigue (86%) followed by anorexia, pain abdomen and fever. In study on viral hepatitis patients done by Dabadghaoet al[8] in 40 patients of HAV found fever, malaise, generalized weakness and yellow discoloration of eyes as common symptoms of hepatitis. Study conducted by Zhang et al[9] also observed that the common clinical symptoms were jaundice (85.7%), fatigue (70.5%) and anorexia (64.8%). Chauhan S et al[1] in their study foundanorexia the most common symptom (90%) followed by distension of abdomen (54%). However in one study conducted by Suthar et al[10], they found abdominal distension as a presenting complaint in 84%, 71% and 60% of their patients respectively

In our study Hepatomegaly was found in 33 patients (33%) followed by splenomegaly (8%).LambaS et al[4] in their study found Hepatomegaly, found in 132 patients (66%) was the most consistent sign followed by splenomegaly (39.5%) and oedema (19.5%). High prevalence of hepatomegaly and splenomegaly may depends on clinical stages of jaundice or etiology. Study by Vasanthan K et al [11],abdomen hepatomegaly was present in 44.2% patients, splenomegaly in 11.6%, and hepatosplenomegaly in 20.9%.

In our study mean total bilirubin was 4.70±4.46, Mean SGPT was 149.45±204.54, Mean SGOT was 164.81±166.02 and mean alkaline phosphatase was 137.3±141.93. Study done by Tong et al[12] showed that the mean presenting laboratory tests from 59 hepatitis A patient, included mean bilirubin of 5 mg/dL, mean AST of 1442 lU/ mL and mean ALT of 1952 lU/ mL.studyby Lamba S et al 100% patients had bilirubin greater than 3 mg/dl as jaundice was the basic inclusion criteria. Mean levels of total bilirubin, SGOT and SGPT were 9.9 mg/dl, 223 IU/L and 235 IU/L respectively. All the patients who were diagnosed as patients of alcoholic liver disease accepted chronic consumption of alcohol by them.

In our study Poor environmental hygiene and sanitation was found to be associated with HAV and HEV infection , Similar findings was seen in study by Lamba S et al.

Conclusion

The variability in nature of the disease regarding its presenting signs and symptoms, clinical course and development of complications are important aspects. Jaundice is very common disease with male predominance, varied etiology most common being viral hepatitis, Alcoholic liver diseases. Most common presentation is anorexia followed by myalgia, fatigue.

Conflict of Interest : NO
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Ethical approval: The study was approved by the Institutional Ethics Committee

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